

**South Platte River Urban Waters Partnership (SPRUWP)
 QUARTERLY MEETING
 November 7, 2018, 9:30 am – 12:30 pm
 The Greenway Foundation, Denver, CO
 Meeting Summary -FINAL**

Attendance: Nate Beckman, Stacey Eriksen, Donny Roush, Andrea Savage, Jeff Shoemaker, and Sam Stein

Facilitation: Sam Haas and Dan Myers

ACTION ITEMS

Sam Haas	<ul style="list-style-type: none"> • Ask The Greenway Foundation to send information for SPRUWP to distribute concerning events like South Platte Stewardship Days and the Gala on the Bridge. • Send a survey to SPRUWP members to identify meeting dates and times for 2019.
SPRUWP Members	<ul style="list-style-type: none"> • Contact Groundwork Denver if interested in hosting a youth team member for a job shadow day

SPRUWP PARTNER UPDATES

SPRUWP partners provided updates on their current work priorities. Their comments are summarized below.

Nate Beckman- Colorado State Forest Service

- Beckman works in the Colorado State Forest Service’s (CSFS) Golden Field Office, which covers the agency’s Northeast Area (including Clear Creek, Park, and Jefferson Counties.
- The Upper South Platte Partnership (USPP) is one of Beckman’s major priorities. The USPP mitigates risks from wildfire and postfire erosion within high-risk watersheds. USPP partners work with private landowners and (non-federal) public land managers to do forest restoration and wildfire mitigation projects.

Stacey Eriksen-Environmental Protection Agency

- Eriksen’s role with the Environmental Protection Agency (EPA) has recently changed and she will be spending less time working on green infrastructure and urban waters issues and more time working on the EPA’s brownfields program.
- Eriksen has been working with graduate students from the University of Colorado’s (CU) Masters of the Environment program and the Colorado Department of Public Health and Environment (CDPHE) to develop a forthcoming “Green Streets for Main Streets” guide to help smaller communities incorporate green infrastructure into their municipalities. The target audiences for the guide are business improvement districts and municipal officials. The guide is clear, does not feature much jargon, and includes great photos. Students from CU’s Masters of the Environment program typically decide on capstone projects in November, so partners could float ideas for collaboration to the students for next year.
- If any SPRUWP partners need analysis from the EPA’s Denver lab, Eriksen will put in a request to get that work done sometime after mid-May.

Donny Roush-City and County of Denver

- Roush leads the City and County of Denver's Stormwater Education and Outreach program. He has worked with the same school for ten years to help a 6th grade class do a five month of study of the South Platte River.
- A group of students from Denver North High School are also working with Roush on a project to learn about and test for lead and corrosion in the river and in their communities.
- Roush is also creating a collection of macroinvertebrates from around the watershed.

Andrea Savage-Groundwork Denver

- Groundwork Denver is continuing to sample water in Bear Creek, is taking readings of turbidity and temperature in the creek and has just renewed its contract with River Watch to train six youth to do sampling.
- Savage's Blue Team finished a second summer of irrigation audits to fix sprinklers for free to reduce contamination stemming from leaks.

Sam Stein- Colorado State University

- Stein is pursuing a graduate degree in economics with a concentration in water economics at Colorado State University (CSU).
- Stein's thesis focuses on how revealed preferences such as travel costs show people's valuation of instream flows in the South Platte River Basin.
- SPRUWP's Natural Capital Assessment tool may be relevant to Stein's work. It can be found on the SPRUWP website under "Featured Resources."
<https://www.epa.gov/urbanwaterspartners/urban-waters-and-south-platte-watershed-headwaters-denver-metropolitan-area>

UPDATE ON SUBGROUPS

SPRUWP members discussed the progress made in forming subgroups to meet the partnership's goals. Their comments are summarized below.

- At the March SPRUWP meeting, partners decided to form subgroups to flesh out implementation specifics in three areas: science and data, outreach and education, and policy and planning. The first two groups have met so far.
- The science and data subgroup have come up with some concrete steps for subgroup members and partners to move forward with.
- The outreach and education subgroup have been brainstorming ways to use the Natural Capital Assessment Tool and Water Quality Assessment Tool to conduct trainings with water educators like Water Education Colorado. The group also discussed the Stormwater Mapping App and potential strategies for boosting its use.
- The City and County of Denver's Stormwater Education and Outreach program is interested in having someone experienced with the Water Quality Assessment Tool (such as its creator, Ben Tyler) train their group and potentially a broader group of SPRUWP partners. There will be an opportunity in February to attend Water Education Colorado's educator symposium, and someone could present on the tool there.
- Water Education Colorado may be involved in writing the implementation plan for the outreach and education portion of Colorado's Water Plan (CWP). SPRUWP and its outreach and education subgroup could support those efforts.
- There were questions about the potential for funding a messaging campaign on stormwater. It is difficult to choose among the thousands of existing stormwater messaging approaches, but Amy Conklin of the Barr Lake and Milton Reservoir Watershed Association created some with broad buy-in.

- The group discussed the DrainMarker app. <https://www.drain-marker.com/>The developers of the app will be coming to an April middle school service day event to do some on-the-ground tests for students. There are questions about how input from students in the app can feed into the City's compliance work. Open Geographic Information Systems (GIS) data could make it easier to provide that input. 90% of inlets draining to the river need to be marked (and stay marked) with stickers.
- SPRUWP could arrange for the app's developers or someone else with knowledge of the app to present on the national Urban Waters Partnerships call with all 19 locations. The presentation could be a great way to reach a potentially interested audience. The app developers could also apply for Urban Waters Small Grants next year to help the app become commercially viable and to compensate the developers for their work.

THE GREENWAY FOUNDATION PROJECT UPDATES

Jeff Shoemaker of The Greenway Foundation provided an update on the Foundation's projects. His comments are summarized below.

- Shoemaker cochaired the successful campaigns to pass Referred Measure 2A and Ballot Issue 7G. 2A will provide Denver County with \$45 million a year dedicated for parks and rivers. The money will be matched and leveraged to address a backlog of maintenance needs and to meet the demands of a growing population. 7G loosened Taxpayer Bill of Rights (TABOR) restrictions on the Urban Water and Flood Control District (UWFCD) and provided the UWFCD with \$23 million a year to promote the health of rivers, creeks, etc.
- The South Platte River is now healthy enough to sustain cold water fish species and poses a much less severe flood risk than it did in 1965, when Denver was devastated by flooding from the South Platte.
- Property values near the South Platte River and Cherry Creek have increased as a direct result of their proximity to the river. Many of Denver's most highly touted developments are valuable because they are adjacent to the river.
- The Greenway Foundation is a major supporter of the Chatfield Storage Reallocation Project, a \$170 million effort paid for more capacity for the municipal and agricultural water users who will receive 20,000 acre-feet of additional storage in the reservoir. The project is unprecedented because it is repurposing an existing federal reservoir without raising walls or creating new holes (reservoirs). The project will add ecological and recreational value to the reservoir, with 2,000 of the 20,000 acre-feet being set aside for an environmental pool. The Greenway Foundation worked with Colorado Parks and Wildlife (CPW), the Colorado Water Conservation Board (CWCB), and Denver Water to create the environmental pool to be used for direct instream uses that benefit the environment and recreation. The environmental pool water will eventually flow downstream to Weld County to meet the needs of livestock and agriculture. The Greenway Foundation is working with CPW to coordinate the releases into the river. The project will begin storing water by 2020.
- The Greenway Foundation and the Colorado Water Quality Control Division are working to reach a compromise through a stakeholder engagement process to reduce the presence of lead in drinking water in the Denver Metro area without creating harmful algal blooms in the South Platte River from the addition of orthophosphates to the water supply in order to reduce corrosion in lead pipes. Groundwork Denver and Denver Water are pursuing funding to establish onsite filtration units to reduce lead poisoning. State politicians are also working to find money to further reduce the presence of lead in Denver's drinking water. SPRUWP's science and data subgroup has discussed the possibility of applying for funding to measure orthophosphates in the South Platte to establish baseline levels in case additional orthophosphates are added to the water supply.

- The Greenway Foundation is working with the National Western Center to create an eight-acre riverfront park near the Center. The US Army Corps of Engineers is currently examining potential flood control and restoration measures on the project site.
- The Greenway Foundation is working to help secure \$200-300 million for improvements to Harvard Gulch, Weir Gulch, and the South Platte River from 6th to 58th avenues.
- The Greenway Foundation is working with Clear Creek County to create a Clear Creek Greenway Authority.
- The Cherry Creek Stewardship Partners are now self sufficient enough to work without further Greenway Foundation support.
- The Greenway Foundation is working with The Water Connection to offer a Clean River Design Challenge to students from local colleges to design innovative trash removal devices. Five teams will receive money to build working protocols that will be tested on the South Platte.
- Frog Creek Partners of Casper, Wyoming have devised gutter bins that collect 99% of solid pollutants and over 50% of liquid pollutants when placed under storm grates. 12 working models of the bins are being tested around Denver. If more municipalities adopt the devices, they will become cheaper for the developers to produce. The national Trash Free Waters program has received information on the gutter bins.
- The Greenway Foundation's South Platte River Environmental Education (SPREE) program is offering two excursions at different sites each day. Approximately 60 preschool-5th grade students participate each day. The Foundation is working with Metro State University-Denver to provide opportunities for members of diverse communities to serve as environmental educators
- The Greenway Foundation offers South Platte Stewardship Days to allow volunteers to help clean up the river.
- The South Platte River Festival and Gala on the Bridge remain major events for The Greenway Foundation.
- The Greenway Foundation is launching a major fundraising campaign, including the Friends of the Greenway program, to fund a permanent endowment that allows The Greenway Foundation to work in the future.

LANDSCAPE-SCALE FOREST RESTORATION PROJECTS ON THE UPPER SOUTH PLATTE

Nate Beckman of the CSFS provided an overview of landscape-scale forest restoration projects taking place in the Upper South Platte watershed. His comments are summarized below.

- The Upper South Platte watershed encompasses 2,600 square miles from Kenosha Pass to I-70 and the Pikes Peak area. The drinking water for one in three Colorado residents passes through the watershed and filters down through Denver.
- The watershed has experienced five major fires in the past 20 years. These fires have fundamentally changed the watershed. For example, the 13,000-acre Buffalo Creek fire's burn scar was hit by a major rain event shortly after the fire took place. Decomposed granite from the burn scar washed down into Strontia Springs and Chatfield Reservoirs, costing Denver Water millions of dollars in (still ongoing) clean-up expenses. That event galvanized efforts to proactively create a healthy watershed.
- The USPP was created in 2015 to work on private land in the watershed in complement to work happening on Denver Water and US Forest Service (USFS) land. The USPP is set to end in 2020, but there are hopes that it continues to operate.
- USPP partners include the American Forest Foundation, the Colorado Forest Restoration Institute, the CSFS, the Coalition for the Upper South Platte, Denver Mountain Parks, Denver Water, the Jefferson Conservation District, Jefferson County Open Space, The Nature Conservancy, the USFS, and local fire protection districts

- The USPP's work is informed by the USFS' National Cohesive Wildland Fire Management Strategy ("Cohesive Strategy"). The Cohesive Strategy's three legs are to ensure resilient landscapes, fire-adapted communities, and safe and effective fire response.
- The USPP is prioritizing where it works in the watershed. The USPP works within Denver Water's "zones of concern" which are priorities in the watershed based on a given area's wildfire hazard, erodibility, road density, etc. Additionally, Rob Addington of The Nature Conservancy modeled burn probability, post-fire soil loss, and high-density population pockets in wildland-urban interface (WUI) areas to create a map of risks in the watershed. The highest risk areas are in or around Conifer and Evergreen. The USPP also used sub-watershed boundaries and the locations of past fires to inform its selection of priority areas.
- USPP partners are working on a large number of projects in these prioritized areas, but one of many strong examples of the USPP's work is the CSFS' Heavens project.
- The CSFS is collaborating with five landowners across property boundaries on the 588 acres that compose the Heavens project. The landowners' goals for the project include reducing fire risk, creating a healthy forest, and increasing the presence of wildlife. The USPP's goals for the project closely resemble those found in the Cohesive Strategy.
- USPP partners start projects by assessing current conditions in a project area. USPP partners analyze factors like topography, moisture levels, forest type, etc. to gain a better idea of fire risk across property boundaries.
- Foresters visit project sites to collect the wide-ranging scientific data used to create treatment prescriptions to meet project goals and to develop desired conditions on the treatment unit.
- The USPP focuses on adaptively managing its treatments and projects so that it can apply lessons learned to future actions.
- There is a high risk of crown fire in the Heavens area and in much of the watershed, and the USPP aims to return low-to-mid severity groundfire to the landscape that is more in keeping with the area's ecology.
- In much of the forest in the watershed, fire has been eliminated from the ecosystem, and unhealthy forest conditions like the encroachment of conifers on aspen and ponderosa have led to an overgrowth forest. The USPP works to create healthy forests conditions by, for example, creating more canopy openings or creating new aspen stands.
- A major challenge facing the USPP is that there is little utilization along the Front Range of the timber products created by forest treatments, so it can be difficult to dispose of material.

Clarifying Questions

SPRUWP members asked several clarifying questions regarding Beckman's presentation. Questions are indicated in italics and the corresponding responses are below in plain text.

How is the CSFS funded?

The CSFS works under Colorado State University, which provides it with base funding for 40% of its costs. The remainder of the agency's funds come from grants from partners. A lot of the CSFS' work is funded by Denver Water and the USFS.

How long does a fire scar last?

It depends. The natural fire regime in this area was disrupted 100 years ago when the federal government enacted policies intended to eliminate fires. Vegetation grew unchecked by fire, so now when there is fire it burns so hot that it sterilizes the soil. Another challenge is many people are moving to the Upper South Platte watershed from other parts of the country and expect forests here to look as dense as they do in the eastern United States.

Does the USPP work on a mix of public and private land?

All of the USPP's work is on private land, but the USFS owns much of the land in the watershed.

Why is there not enough of a wood market? Is there no value to wood of this type and age?

The lack of a wood market makes projects very expensive, so there is a need to create local markets. The USPP is discussing the possibility of A1 Organics taking some of the biomass from USPP projects to make mulch and woodchips and to compost the remainder of the slash. Trees grow too slowly in Colorado to compete with the rotational forestry products from other regions, but there is a strong need to reduce project costs in the watershed.

After prescribed fire is used, do forests become more self-sustaining?

That is the hope. Using prescribed fire is politically charged, however, so it is a challenge to return fire to the landscape.

What is the importance of the USPP's work to urban areas and their waterways?

The water of those urban areas starts in the Upper South Platte watershed as snowmelt. It is critical to have a healthy environment that produces clean water to flow downstream.

What educational background do people need to have to work at the CSFS?

CSFS employees need degrees from schools accredited by the Society of American Foresters.

Group Discussion

SPRUWP members discussed Beckman's presentation. Their comments are summarized below.

- There are challenges for the USPP in educating community members and engaging with them about the need for treatments in the watershed. The American Forest Foundation has been a tremendous help in communicating the USPP's goals and actions to the public.
- It would be interesting to create a video showing how water from the Upper South Platte watershed begins as snow, flows downhill, and provides the Denver area with drinking water.
- It may be useful for the CSFS or USPP to work to educate people in Colorado about where their water comes from.
- There are opportunities for the USPP and SPRUWP to complement each other's work in the upper and lower South Platte watersheds. SPRUWP members could go on a field trip to a USPP project site.

E. COLI MONITORING ON LOWER BEAR CREEK

Andrea Savage of Groundwork Denver presented on her group's monitoring efforts along Lower Bear Creek. Her comments are summarized below.

- Groundwork Denver is an environmental justice organization with expertise in community engagement. Groundwork Denver has been working with youth teams to monitor E.coli levels and to find their sources in Lower Bear Creek for several years. Groundwork's teams found a source of E.coli near a leaky sewage drain, which showed how important gathering this kind of data can be. After the leak was fixed, E.coli levels in the creek remained mostly unchanged, indicating that this is a nonpoint source pollution issue. The youth teams are working to determine which animals are producing the E.coli in the creek by testing for sucralose, a compound only consumed and produced by humans. Metro State University-Denver is analyzing Groundwork's sample to try to help to identify the source of the E.coli.
- Since 2014, Groundwork Denver has conducted weekly water quality sampling to support a total maximum daily load (TMDL) of pollutants. Sampling is for acidity, temperature, turbidity, etc., at 17 sites along Lower Bear Creek between the creek's confluence with the South Platte and Wadsworth Boulevard. Groundwork's team also collect data on weather,

rainfall, creek outfalls, homeless camps, etc. Groundwork has recently added collection sites upstream of Sheridan Boulevard, which forms a transition zone from clean to less clean water in the creek. Groundwork will try to produce a new report on water quality monitoring results this December with analysis of the data from last year. Groundwork youth work with River Watch to learn the science behind their monitoring data.

- In Denver, stormwater runoff picks up fecal matter, antifreeze, fertilizer, and other pollutants and carries them directly to the river. In some older and coastal cities, there are combined sanitary and stormwater sewers. The difficulty with that approach is that big storm events can force those cities to release raw sewage into the river.
- In 2017, Groundwork Denver began providing irrigation audits to fix sprinklers and other community outreach projects. 83 audits have been conducted so far, and repairing sprinklers to decrease nitrogen and phosphorus runoff from driveways has the added benefit of serving as an opportunity for public education.
- Groundwork's youth team members have done a lot of bilingual outreach in Sheridan and southwest Denver to educate people about stormwater. Teams used an Inspire Grant from Great Outdoors Colorado (GOCO) to create a series of *paleta* carts depicting the water cycle and possible pollution sources. The teams discussed the work that Groundwork is doing along Lower Bear Creek with interested residents.
- Groundwork also receives funding to get kids outdoors. Team members bike to Chatfield Reservoir and hike to the top of Mount Evans at the end of the summer to see the source of Bear Creek. In the next few months, they will visit a recycling plant in northeast Denver.

Clarifying Questions

SPRUWP members asked several clarifying questions regarding Savage's presentation. Questions are indicated in italics and the corresponding responses are below in plain text.

How many youths have worked to monitor Lower Bear Creek with Groundwork Denver?

Over four years, 60 high schoolers have worked in paid positions monitoring the creek. In the winter, team members spend more time building their planting skills and working on community cleanups.

Are Groundwork students interested in working in natural resources?

Yes! Groundwork is looking to partner with Emily Griffith High School on a water quality program to provide kids with work experience. Groundwork is also looking to start a scholarship program, because many kids leave the field right after high school. There are financial barriers to the students attending college. Groundwork's goal is to help create a group of environmental leaders of color who can inspire students to follow in their footsteps and create more diversity in the field.

Does Groundwork help to engage the community most hurt by water quality issues?

Groundwork employs young people in those communities to help with the public education piece, where there is a significant disconnect.

NEXT STEPS

- Peak Facilitation will send out a summary of this meeting with Nate Beckman and Andrea Savage's presentations attached.
- Peak will also send out a survey to find meeting dates and times for next year.
- The City of Denver, CSFS, and EPA all expressed interest in having Groundwork Denver's youth team members shadow their staff to learn about potential careers.
- More information about SPRUWP can be found at:
<https://www.epa.gov/urbanwaterspartners/south-platte-program-updates>