

South Platte River Urban Waters Partnership (SPRUWP) Quarterly Meeting
February 15, 2022, from 1:00 pm to 3:00 pm
Virtual Meeting
Meeting Summary – Final

ATTENDANCE

Participants: Ryan Banta, Chelsea Campbell, Gabe Catenacci, Julia Clark, Dana Coelho, Jim Dorsch, Stacey Eriksen, Sherry Fountain, Nolan Hahn, Guadalupe Herrera, Peter Ibsen, Peter Ismert, Aimee Konowal, Steve Lundt, Sydney McAndrews, Cathy McCague, Mike McHugh, Margaret McRoberts, Greg Newman, Jordan Parman, Lisa Pelstring, Chris Poulet, David Rausch, Donny Roush, Erickson Smith, Travis Warziniack, and Scott Williamson

Facilitation: Samuel Wallace and Izzy Sofio

ACTION ITEMS

Samuel Wallace	<ul style="list-style-type: none">• Add Dana Coelho to the Education and Outreach Committee contact list.• Distribute the registration form for Water '22 events and activities.
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PARTNER INTRODUCTIONS AND UPDATES

- SPRUWP partners welcomed several new meeting participants to the SPRUWP quarterly meeting.
- The Environmental Protection Agency (EPA) received approval to continue rain barrel sampling work with Groundwork Denver. The EPA is also actively searching for funding sources to continue supporting SPRUWP.
- The Colorado State University (CSU) Spur campus is hosting a Bio Blitz event this spring to document the natural history of the portion of the South Platte River that runs through the National Western Complex in northwest Denver. [Click here](#) to find more information about past Bio Blitz events.
- Groundwork Denver is looking for six to eight young adults from underserved communities to participate in the Green Infrastructure Training (GRIT) program. To learn more about Groundwork Denver’s GRIT program or connect individuals who may be interested in the program, reach out to Gabe Catenacci (email: gabe@groundworkcolorado.org).
- Margaret McRoberts is working with the Living Lab at the CSU Spur campus to identify potential projects to partner with throughout the urban-metro area. If any SPRUWP partners are interested in partnering, they should contact Margaret McRoberts (email: Margaret@stellasustainability.com).
- The Region 8 Adolescent and Young Adult 2022 Virtual Summit, an event focused on uplifting youth and adult partnerships and environmental justice, will be held via Zoom from March 1 through March 3. The event is free. SPRUWP partners can register for the event through [this link](#).
- Colorado Water Wise is offering a How to Host a Rain Barrel Installation Workshop, a free, online, bilingual webinar event on Wednesday, February 23, from 10:00 am to 11:30 am.

URBAN TREE CANOPY MODELING AND RESEARCH PRESENTATION

Peter Ibsen, U.S. Geological Survey (USGS), presented his recent research on urban tree canopy and its impact on the urban heat island effect. Below are key points from his presentation.

Overview

- Extreme heat continues to become a more significant issue each year. While Denver is in a temperate climate, the City sees 26 days above 90 degrees every year. Extreme heat can generate devastating impacts, including mortality, in cities without adequate heat infrastructure. Heatwave mortality in cities is one of the most significant natural disasters.
- According to 100-year modeling, many areas across the U.S., including Colorado, the Pacific Northwest, and New England, will see more significant daytime and nighttime heat increases compared to areas in the Southwestern U.S., which consistently see high temperatures.
- Additional modeling of several cities across the U.S. indicates increased community-level mortality with each increase in one degree Centigrade. For Denver, this model outlines that every degree increase in the summer results in a four to nine percent increase in community mortality rates.

More on Extreme Urban Heat and Mitigation Techniques

- Peter Ibsen researches how street trees can impact temperature. Urban trees are one way to mitigate extreme heat in cities. Other ways to mitigate extreme urban heat include cool roofs, gray infrastructure changes, green roofs, and different ways to use water within a city. His research generally focuses on the biophysical properties of heat mitigation in conjunction with gray infrastructure.
- In cities, incoming radiation reflects from buildings and bounces back to the sky. Trees in cities can provide a physical benefit by shading the radiation. Additionally, transpiration reduces the temperature around them.
- During heat waves, the surface cooling effect from vegetation has been found to be higher than during a typical weather event. A study examining how street trees cool urban surfaces compared day and night temperatures across six cities and found that the cooling effect was greatest during the hottest times of the day and night, which was strengthened during heatwaves. Ibsen's research found the same results across eight states. His research found that the drier the city, based on regional aridity, the greater the cooling effect during heat waves.

Denver Urban Heat Research

- Most research on urban heat compares cities, regional aridity, and the overall cooling effect of vegetation for an entire city. Ibsen's research focuses on understanding how much vegetation increases cooling, how much land cover increases heating, and where those interact. His research includes the human component of this issue, which is often not addressed in other research.
- Ibsen uses high-resolution land cover that allows researchers to see individual trees, individual patches of turf/lawns, impervious surfaces, and structures in Denver. In addition to high-resolution land cover information, the research utilized data collected through 60 small sensors attached to trees distributed throughout Denver. The research focuses on four land cover types: tree canopy cover, turf cover, impervious surface cover, and building cover.
- This research creates a better understanding of how urban exterior air temperature occurs in a city through interactions between different land covers, where interactions occur (i.e., hot spots or cool spots), and the land cover and demographics of those regions. The models use regional climate inputs to model extreme heatwaves and show differences in extreme heat between day and night. The research also highlights various approaches to mitigate urban heat.

Research Findings

- The basic results of Ibsen's research in Denver were that urban vegetation has a strong effect on cooling surfaces and air temperature. During the day, the cooling mostly comes from tree canopies. There is a 0.1 degree decrease in air temperature for every percent increase in canopy coverage. Impervious surface increases surface and air temperature. If tree canopy increases and impervious surfaces decrease, there is an additive effect as removing impervious surfaces also removes their heating effect. During the night, tree canopies are less impactful. Turf appears to drive cooling at night, which is likely related to turf irrigation. There is less heat from impervious surfaces at night.
- Across Denver, during the day, there is a difference of 2 to 2.5 C air temperature between the warmest and coolest areas. During heatwaves, that difference is closer to 3.5 C.
- The industrial and commercial areas in Denver create hot spots during the day. These are prime locations to address heat with mitigation. Denver has 40 percent tree canopy cover, so there is an opportunity to increase the percent tree canopy cover to mitigate the heat.

Next Steps

Peter Ibsen's research is currently under review by the USGS for publication. He hopes to expand this research to identify who in Denver is experiencing the effects of urban heat the most and conduct this research in other areas.

Clarifying Questions

SPRUWP partners had the opportunity to ask clarifying questions about Peter Ibsen's presentation and research. Questions are in italics below, and corresponding answers are in plain text.

Have the eight cities Peter Ibsen and his team plan to research already been selected? If not, could Urban Waters help determine those locations?

Denver, Miami, Baltimore, Portland, Phoenix, Tucson, Las Vegas, and Los Angeles were selected for the research. Denver, Baltimore, Phoenix, and Los Angeles are Urban Waters Federal Partnership locations.

In some areas in and around Denver, turf is being replaced with xeric plants. Are xeric plants considered to be impervious surfaces?

Researchers are actively working to determine that. Many xeric plants do not have the same transpiration properties that trees have.

CSFS URBAN TREE CANOPY INITIATIVES PRESENTATION

Dana Coelho, CSFS, presented about planned and implemented urban tree canopy initiatives led by the CSFS. Below are key points from her presentation.

What the CSFS Does

- The CSFS is a state agency based out of Colorado State University's Warner College of Natural Resources. Dana Coelho's role as a statewide Urban and Community Forestry Program Manager allows her to distribute funding and information throughout Colorado to benefit Colorado's trees, people, and communities.
- The CSFS has a grant program to allocate funding to communities across Colorado and nonprofit organizations engaged in tree planting, tree-related education and outreach, tree/forest management, and assessment projects. This grant program is funded through the U.S. Forest Service (USFS) and donations. The CSFS has several partnerships across Colorado to conduct this work and allocate funding.

Understanding Urban and Community Forests

- The CSFS definition of urban and community forests recognizes that although human-dominated and not naturally occurring, these forests are part of ecosystems. Urban and community trees offer many benefits and are located across private, local, public, state, federal, and tribal lands. Where there are people, there will also be trees.
- Urban and community forests have ecological, economic, and intrinsic value. As Colorado continues to develop, understanding these forests can ensure that they and their surrounding communities continue to benefit from forest resources through effective forest management.
- Often, urban and community forests are not considered in policymaking as a forest. The CSFS is working to bring awareness to these forests so that policymakers and people consider them as part of forests in Colorado.

Resources, Programs, and Data

- Data, tools, and maps, like the CSFS's Tree Inventory Program and the South Platte Natural Capital Project, are critical in defining community engagement and ecosystem goals for the CSFS and its partners, as well as achieving those goals. CSFS has made investments in geospatial data and tools across the agency and continues to seek out partnerships at the national level, too, to establish additional forest-related resources like the Tree Equity Program and i-Tree.
- Having tree canopy data in addition to data on tree stems, roots, balls, etc., allows urban and community trees to be seen as forests. The CSFS is creating programs to manage urban ecosystems. There is an opportunity to build the CSFS's tree canopy data library for Colorado and specific communities. Tree View, CSFS's platform for statewide tree inventory, allows foresters to upload information and work. Some larger communities can upload their Geographic Information System (GIS) resources with their plot-based inventory, too. Tree View allows foresters to access data so the CSFS can understand Colorado's tree population, health, and conditions.

Your Ash is on the Line Campaign

- The silver lining of the Emerald ash borer (EAB) and other epidemics is that these events drive investments in assessments and technology. From these events, communities and scientists have learned that tree diversity is key to resiliency.
- Data from Tree View indicates that 12 percent of urban and community forests statewide are Ash trees. Fourteen percent of the trees in communities affected by EAB are Ash trees. In Grand Junction, Ash Bark Beetles are attacking the Ash trees. Tree canopy data rather than stem data would provide a more accurate understanding of the issue, which would speak to the value of investing in urban forests management.
- The CSFS, the Colorado Tree Coalition (CTC), and the EAB Response Team developed the EAB Landscape Scale Restoration (LSR) Grant Project to conduct Ash tree inventories in Colorado communities without the in-house resources for that work. This program also provided resources for EAB mitigation.

Continuing Urban and Community Forest Work

- The CSFS plans to continue investing in inventories and tree canopy assessments to develop a more comprehensive data set and to assist smaller communities that do not have the community resources for this work.

- The American Forests provides a Tree Equity score throughout the country. They are developing a network for communities to discuss issues, challenges, and solutions.
- SPRUWP is a place to continue the discussion around tree canopy and equity, too.
- The CSFS recognizes that there is more work to be done in order to create accessible resources for all community members on this topic.
- In addition to the benefits urban and community forests provide to people, they also benefit the ecosystems. If they are not invested in or understood, it will be more challenging to understand the animal, water, and resource patterns across the region, especially within the context of the Front Range.
- The Urban Forestry Expansion Strategy is one of the paths forward for the CSFS to support urban and community forests. This strategy includes equity-based work development, community-centered engagement strategies, tree planting, tree care, hazard mitigation, project planning, project implementation, applied urban forestry research, and continued discussion around this topic with partners, like SPRUWP partners.
- For any follow-up questions or conversations, SPRUWP partners can email Dana Coelho at dana.coelho@colostate.edu.

Discussion

- The lack of diversity amongst trees may be partially related to market pressures to sell certain trees.
- SPRUWP can play a role in starting dialogues for funding, tree diversification, and creating urban forests in different neighborhoods and communities.
- Identifying and communicating the benefits of forests in the ways that overlap with other issues cities and communities are tackling is one way to increase urban and community forests. There are opportunities to tie the benefits of urban forests to discussions around homelessness, for example.
- EAB is also threatening trees in Lincoln, Nebraska. The City is developing pilot programs in conjunction with the Lincoln Social Service Department to cover the fees from approved tree maintenance contractors.
- The City is also reviewing past barriers to tree planting in low-income areas of the City.
- The Urban Wood Utilization Workshop, hosted by the CSFS on April 8, will demonstrate how to sell a tree in merchantable sections instead of chipping the tree or throwing it away.

Clarifying Questions

Meeting participants had the opportunity to ask clarifying questions about the presentation. Questions are indicated below in italics, and corresponding answers are in plain text.

How many Ash trees in Colorado are affected by EAB?

In Colorado's Tree View platform, around 70,000 to 100,000 of are Ash trees, making them susceptible to EAB.

Is there a treatment for EAB, or do the trees need to be removed?

Yes. Trunk injections of an insecticide are most frequently recommended for trees of historical or economic value. Once a tree begins treatment for EAB, the tree must continue to receive that treatment. The City of Arvada and the City of Boulder proactively treat Ash trees. Boulder and Denver are exploring biological control. Some places treat and remove EAB in a phased approach, which can be more manageable. There is also some research from the Midwest that may result in new treatment insights.

Could diseased trees be used for something (i.e., can they be merchantable)?

The third component of the Your Ash is on the Line campaign involves urban wood utilization.

THE WATER '22 CAMPAIGN

Scott Williamson, Water Education Colorado (WECO), provided information about the Water '22 campaign. Below are key points from his presentation

- Water '22 is a year-long public awareness campaign working to highlight the role of water in Colorado's communities. It is a year of celebration, engagements, events, and educational opportunities.
- 2022 marks the 100th anniversary of the Colorado River Compact, the 50th anniversary of the Clean Water Act, and the 20th anniversary of WECO. The 2015 Colorado Water Plan will be updated in 2020, as well.
- The goals of the campaign are as follows: 1) Connect Coloradans to existing and new opportunities to learn about water and how they can affect change. 2) Motivate Coloradans to become more proactive participants in Colorado's water future. 3) Instill passion for water programs throughout the community by maximizing visibility of Water '22 campaign messages and events.
- There are several Water '22 activities, including a book club, a partnership with the Colorado Environmental Film Festival, tours, volunteer events, student involvement opportunities, and more.
- Water '22 also wants to showcase the events of and partner with SPRUWP partners and other organizations throughout the campaign. For any SPRUWP partners that would like to submit their event or activity to the Water '22 campaign, they can do so by [clicking this link](#) to register. Samuel Wallace, Peak Facilitation Group, will also distribute the registration form.
- In January, Governor Jared Polis helped kick off the campaign. Each month there are more planned events and spokespeople helping to bring awareness to the campaign.
- There is a Water '22 marketing toolkit in which Water '22 partners can co-brand their materials with the Water '22 messaging, including for social media.
- Another campaign component is the "22 Ways to Care for Water in 2022," which is available for Coloradans in English and Spanish.
- SPRUWP partners can support the campaign by becoming a partner or sponsor, using the marketing tool kit, signing up to be a member of the Water '22 Speakers Bureau, creating local events and activities that coincide with the campaign, and reposting/resharing campaign messages to social media or posting your own water stories on social media using #water22.
- For more information partners can email water22@wateredco.org.

SPRUWP SUBCOMMITTEE UPDATES

Samuel Wallace provided an update on the work of the SPRUWP subcommittees. Below are key points from his update.

SPRUWP Organizational Structure

- The SPRUWP Full Partnership meets quarterly for partners to connect and hear about ongoing projects through presentations.
- The Strategic Planning Committee is developing a strategic plan for 2022 to 2025.
- The Science and Data Committee works to develop projects devoted to improving and expanding access to data and scientific findings related to water quality and restoration.

- The Education and Outreach Committee works to provide opportunities for educators to collaborate on projects and share best practices related to expanding awareness and education of urban water issues and developing future water stewards and practitioners.
- The Advisory Committee oversees administrative and budgetary tasks for SPRUWP, including endorsing projects on SPRUWP's behalf.
- SPRUWP partners are welcome to join any committee, aside from the Strategic Planning Committee, which is wrapping up its work shortly.

Strategic Planning Committee

- This committee has met four times to identify goals, strategies, and actions for SPRUWP over the next three to five years.
- The next step for this committee is to create the strategic plan and prioritize the plan's actions.
- The committee will share the strategic plan with SPRUWP partners once it is finalized.

Science and Data Committee

- The committee submitted pre-proposals for U.S. Geological (USGS) Survey Urban Waters program funding to 1) install a super gage to track real-time water quality metrics on the South Platte River and 2) conduct a geomorphological analysis of the South Platte River to create baseline data ahead of two South Platte River restoration projects.
- Unfortunately, SPRUWP was not selected due to the competitive application process. Committee members discussed how the USGS is working to continue moving the geomorphological study forward during the last meeting, potentially in partnership with Denver Department of Public Health and Environment (DDPHE).
- The committee will continue to explore other projects and opportunities for the next USGS Urban Waters Funding cycle.
- The committee will discuss sediment in the Strontia Springs Reservoir at the next meeting.
- Once the contract to update the Water Quality Assessment Tool is in place, the committee will update the tool so that it can integrate data in real-time.

Education and Outreach Committee

- The committee is considering hosting grant writing and water equity training and workshops for SPRUWP partners.
- The committee is discussing opportunities for education and outreach in the South Platte watershed related to the Water '22 campaign.

NEXT STEPS

- The next SPRUWP meeting will be on Tuesday, April 19, 2022.
- A panel of speakers from Colorado Parks and Wildlife (CPW) will present about potential funding for water quality projects in the Upper South Platte watershed on State parkland during the next meeting.