

Exploring Barriers to Accessing Evidence and Federal Resources for Equitable Green Infrastructure Implementation with NGOs

The American Association for the Advancement of Science's Center for Scientific Evidence in Public Issues (AAAS EPI Center) in partnership with the US Environmental Protection Agency (EPA) Office of Water hosted the first discussion in a two-part virtual series "Exploring Barriers to Accessing Evidence and Federal Resources for Equitable Green Infrastructure Implementation." The panelists, who represented non-governmental organizations working on green infrastructure and nature-based solutions, highlighted opportunities, challenges, barriers, and lessons learned from the design and planning to implementation to operations and maintenance of green infrastructure and nature-based solutions.

The discussion focused on leveraging evidence, expertise, and tools for advancing resiliency, accessing and utilizing federal funding sources, and centering equity and the needs of frontline communities. The event was attended by representatives of 12 federal agencies, universities, state agencies, NGOs, and communities.

The following summarizes the information presented during the virtual discussion as well as key resources shared.

Panelists

- **Dr. Angela Chalk**, Founder and Executive Director, Healthy Community Services
- **Paula Conolly**, Director, Green Infrastructure Leadership Exchange
- **Harriet Festing**, Executive Director, Anthropocene Alliance
- **Caroline Koch**, Water Policy Director, WaterNow Alliance
- **Tanner Yess**, Co-Executive Director, Groundwork Ohio River Valley

continued on next page >

“

“The key is...engaging, educating, and empowering people to make the decisions that are best for them and their communities.”

DR. ANGELA CHALK
FOUNDER AND EXECUTIVE DIRECTOR
HEALTHY COMMUNITY SERVICES

AAAS Center for Scientific Evidence in Public Issues

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

The **Center for Scientific Evidence in Public Issues (AAAS EPI Center)** is an initiative from the American Association for the Advancement of Science (AAAS) designed to provide scientific evidence to policymakers and other decision-makers in ways that are clear, concise, and actionable. The AAAS EPI Center makes it easier for people to access scientific evidence and information and then integrate that evidence into their decision-making process. AAAS is the world's largest general scientific society with nearly 250 affiliated societies and academies of science and is the publisher of the *Science* family of journals.

United States Environmental Protection Agency

In May of 2021, EPA re-launched the Green Infrastructure Federal Collaborative. This cooperative effort fosters engagement and cooperation between agencies that actively work to promote the implementation of green infrastructure. Collaborative members work closely to align knowledge and resources to build capacity for green infrastructure implementation. These coordinated efforts provide a platform to publicize the multiple environmental, economic, and social benefits of green infrastructure. In addition, the collaborative seeks to facilitate strategies that foster climate resilience and encourage the equitable implementation of green infrastructure in all communities.

Key issues emerged from the discussion

Leveraging Evidence, Expertise, and Tools for Advancing Resiliency

- Creating standardized metrics for quantitative data
- Increasing buy-in with data and anecdotal evidence
- Integrating community knowledge with data

Accessing and Utilizing Federal Funding Sources

- Reporting requirements are onerous
- Lack of funding for planning and program development
- Need for guidance on funding prioritization for different types of green infrastructure and nature-based solutions

Centering Equity and the Needs of Frontline Communities

- Including communities from the beginning of the planning process
- Helping communities navigate federal requirements
- Considering nature-based solutions in the context of a communities' unique challenges

“We need a better data plan, a better research plan, so that we’re all working towards the same goals and that we’re really clear on where that’s taking us.”

PAULA CONOLLY, DIRECTOR
GREEN INFRASTRUCTURE LEADERSHIP EXCHANGE

“The number one resource need that we hear from our members is quantitative data of effectiveness and success, and a close second is case studies of those successes.”

CAROLINE KOCH, WATER POLICY DIRECTOR
WATERNOW ALLIANCE

Topic 1: Leveraging Evidence, Expertise, and Tools for Advancing Resiliency

A major theme that emerged from the panel discussion is the need for quantitative data with standardized metrics that allow for comparison between projects. Panelists spoke about the benefits of a standardized approach to measuring data pertaining to water quantity and quality, ecosystem services and social benefits. Panelists suggested that establishing standardized metrics for green infrastructure would help communities and municipalities demonstrate the success of

these projects prior to installation. They discussed the need for coordinated solutions such as a national data library or a national research plan to improve practitioner collaboration across the US and support national, regional, and local planning and implementation efforts. Additionally, the panelists pointed out that green infrastructure and nature-based solution case studies are currently too localized to be used across a range of communities and municipalities. Panelists recommended that demonstrating standardized metrics coupled with anecdotal success stories can help increase support for green infrastructure and nature-based solutions. The panelists agreed and emphasized that utilizing a communities' specialized regional knowledge in conjunction with quantitative data metrics is critical to the successful implementation of these projects.

“

“The barriers start way before the application process. You need to have a shovel-ready project, you need to have the metrics and the data...in developing a robust application.”

HARRIET FESTING, EXECUTIVE DIRECTOR
ANTHROPOCENE ALLIANCE

”

Topic 2: Accessing and Utilizing Federal Funding Sources

Accessing and utilizing federal funding sources is a key consideration in the planning and implementation of green infrastructure and nature-based solutions. Panelists characterized federal funding requirements such as invoicing and reporting as onerous and restrictive. The panelists pointed out several challenges for communities that are interested in accessing federal funds. They agreed high administrative costs lead to decreased community participation and access to funding, particularly amongst small-to-medium sized communities. Similarly, required cost-benefit analyses can produce barriers for practitioners without standardized metrics and quantifiable data. Panelists highlighted the tendency for funding to go towards project implementation rather than project planning. They suggested that this can lead to a lack of support for communities that are looking to develop new projects. Funding for green infrastructure and nature-based solutions is often awarded on a project-by-project basis rather than for multiple projects spanning multiple years. This mismatch between how funding is structured and how communities are seeking funds creates a barrier to funding opportunities and awards. Panelists also highlighted the lack of dedicated funding for stormwater projects and the need for guidance from federal agencies regarding funding prioritization for distributed green infrastructure options for maximizing water management including storage and infiltration.

continued on next page >

Topic 3: Centering Equity and the Needs of Frontline Communities

Throughout the discussion, panelists emphasized the importance of involving and collaborating with local communities where green infrastructure and nature-based solutions are being planned and implemented. They discussed centering equity as a vital part of green infrastructure and nature-based solutions and integrating local knowledge with quantitative data to better inform decisions made in frontline communities. Panelists noted that federal agencies working to support communities need to shape their support by engaging with communities and listening to their needs, which is key to building trust and ensuring that solutions fit a community's specialized needs. Panelists described how projects informed by a community's needs can help alleviate unfortunate side-effects of green infrastructure

implementation, such as green gentrification and displacement. Additionally, panelists discussed how green infrastructure and nature-based solutions need to be considered and implemented in the context of other challenges a community faces, including climate issues, workforce challenges, and social barriers. It was suggested that federal agencies work closely with communities as they may need extra support and guidance to submit funding applications and reporting requirements related to green infrastructure and nature-based solutions. Visiting a community and making a connection can break down silos and help communities navigate the federal funding application process. Panelists urged federal agency staff to work alongside community members and be patient with their unique needs and concerns.

“

“We have a once-in-a-generation opportunity to re-patch our communities that have been split.”

TANNER YESS, CO-EXECUTIVE DIRECTOR, GROUNDWORK OHIO RIVER VALLEY

RESOURCES SHARED

CASE STUDIES

- [Advancing Natural Infrastructure in Canada International Institute for Sustainable Development](#) (2019)
- [Austin Land Development Code: Functional Green Overview](#) CodeNext (2018)
- [Brightstorm and partners announce completion of stormwater pilot project in Maryland to protect Chesapeake Bay water quality](#) The Nature Conservancy (2021)
- [Case Studies: Economic Benefits of Applying Soil Health Practices](#) USDA Natural Resources Conservation Service
- [Green Stormwater Infrastructure for Urban Flood Resilience: Opportunity Analysis for Dallas, Texas](#) The Nature Conservancy & Texas A&M Agrilife Extension (2022)
- [Tap into Resilience Case Study: City of Hoboken](#) WaterNow Alliance

EQUITY

- [Applying Economics to Build Resilient and Equitable Communities](#) Earth Economics
- [Creating Sustainable and Resilient Communities: Aseeds Initiative in Duck Hill, Mississippi](#) EPA
- [EJ Screen Environmental Justice Screening and Mapping Tool](#) EPA
- [Equitable Development and Anti-Displacement Collaborative](#) Urban Waters Learning Network
- [How Some Mississippi Teens Are Saving Their Town From Climate Change](#) HuffPost (2020)
- [Tap into Resilience Building Blocks of Trust](#) WaterNow Alliance

FUNDING/FEDERAL RESOURCES

- [Municipal Ombudsman](#) EPA
- [USDA to Invest \\$1 Billion in Climate Smart Commodities, Expanding Markets, Strengthening Rural America](#) USDA Press Release (2020)

TOOLS

- [Best Practices and Resources on Climate Resilient Natural Infrastructure](#) ICF for the Canadian Council of Ministers of the Environment (2018)
- [Center for Watershed Protection 2022 Conference](#)
- [Fieldwork Dashboard](#) Groundwork Ohio River Valley
- [Fight the Flood Middle Peninsula](#)
- [Practical Guide to Implementing Green-Gray Infrastructure](#) Green Gray Community of Practice (2020)
- [Regional Conservation Partnership Program 2021 Projects](#) USDA Natural Resources Conservation Service
- [Sustainable Infrastructure: Putting Principle into Practice – Library](#) Duke Nicholas Institute for Environmental Policy Solutions
- [Tap into Resilience Case Study Map](#) WaterNow Alliance
- [The Protective Value of Nature](#) National Wildlife Federation (2020)