

From Brownfield to Resilience: Collaborative Stormwater Innovation at Overbrook Environmental Education Center

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What we will be presenting:

The Overbrook Environmental Education Center (OEEC) is a long-standing community-based organization dedicated to preserving the built and natural environment, improving public health, and promoting sustainable, livable neighborhoods. Located on a former Brownfield Site in the Overbrook/Wynnefield community in West Philadelphia, the site once housed an abandoned liquor store, grocery, and auto mechanic shop filled with derelict automobiles and debris. Over the past two decades, OEEC has collaborated with a wide array of partners to transform this neglected impervious landscape by removing more than 20 tons of waste, restoring native ecology, and introducing green infrastructure systems including bioretention features, urban forestry, community agriculture, and orchards.

Building on this foundation, OEEC is advancing two major projects that expand green space access and climate-resilient infrastructure in an historically underserved community. The first is a Resilience Hub, designed to provide safe, sustainable community gathering space equipped with restrooms, utilities, hardscaping, and climate-adaptive landscaping. Key construction milestones were completed during 2025. The second initiative, the Farmacy/NatureWorks Campus, converts a once impervious auto mechanic yard into a multifunctional green campus. Planned features include a looping nature trail, healing gardens, nature-based play spaces with water and canopy-level experiences, and community agriculture facilities for food production, education, and workforce training. An existing building will be repurposed as the NatureWorks learning center serving children ages 5–12. Design for this project concluded in 2025, and permitting is underway, with construction anticipated in 2026.

What the audience will learn:

The audience will learn about the collaborative process that has brought together community leaders, educators, engineers, landscape architects, public agencies, and funding partners to develop solutions that are both technically effective and community driven. The complexity of transforming former brownfield and heavily impervious urban sites into resilient community assets required close coordination among diverse stakeholders to balance stormwater performance, environmental restoration, educational programming, long-term maintenance, regulatory requirements, and community priorities. This presentation will explore the key stormwater design challenges encountered, the innovative green infrastructure strategies developed to address current and future climate needs, and the partnerships that made implementation possible. The audience will gain insight into how sustained collaboration among community organizations, design professionals, permitting agencies, and project funders shaped project goals, informed design decisions, navigated permitting and construction challenges, and ultimately produced more resilient and enduring stormwater solutions. The lessons learned from these partnerships will provide a framework for developing successful, community-centered stormwater projects in other urban environments.

NYC Cloudburst Resiliency: Transformational Community Adaptation through Strong Partnerships

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A “cloudburst” is a sudden, heavy downpour that can overwhelm sewer systems and result in flash floods. These intense rainfalls are becoming more frequent, disruptive, and damaging in New York City (NYC); devastating residents, destroying homes, and disrupting businesses. On September 1, 2021, Hurricane Ida shattered the record for the highest single-hour rainfall in NYC, set only two weeks earlier by another extreme storm, Tropical Storm Henri. Both storms caused flooding, damaged property, disrupted critical infrastructure, and polluted New York’s rivers and Harbor.

NYC’s Cloudburst Program will protect vulnerable communities, mitigate flood damage, and improve water quality. Historical data measuring which neighborhoods were hit hardest by Hurricane Ida were used to identify cloudburst planning areas, including flood extents with sea level rise, structural damage reports, sewer backups, and social vulnerability index. All the recommended Cloudburst projects are in flood-prone environmental justice areas.

This project redefines stormwater management in the built environment by transforming streets, parks, and other open public areas into multi-functional community assets for recreational use and flood mitigation. Stormwater runoff from sidewalks and streets is absorbed by porous parking lanes, bike lanes, or medians and then transferred into redesigned public spaces that safely accommodate flood waters. After a storm has passed and sewers have regained capacity, the water drains back into sewer systems. This project is the first large-scale innovative application of interconnected green infrastructure for cloudburst management.

NYC’s ultra-dense built environment is congested and presents complex challenges that require meticulous coordination among multiple private and public agencies. Further, the complex drainage network requires careful consideration to maintain gravity flow. These challenges were addressed through interagency partnerships, stakeholder consensus building, sewer system modeling, and developing cost-effective integrated solutions.

Cloudburst stormwater management integrates flood-protection solutions into public spaces, instilling a positive public perception of how engineering solutions can complement community goals. Integrating public amenities and open spaces with stormwater management solutions, such as sunken basketball courts, water squares, and playgrounds with subsurface storage, transforms these public spaces into multi-beneficial community assets. Based on recommendations from this project, the city announced \$400 million in the construction of Cloudburst Resiliency Projects to better manage intense rainfall events in flood-prone neighborhoods; currently four of these projects are in final design and a fifth is in preliminary design.

This presentation will cover:

- 1) NYC Cloudburst Program Goals
- 2) Social and Physical Vulnerability Assessment
- 3) Opportunity Screening and Adaptation Analysis
- 4) Cloudburst Adaptation Toolbox
- 5) Social, Economic, and Sustainable Design Considerations

Building Flood Resilience in Selinsgrove Borough

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What I will be presenting:

The increasing complexity of flooding underscores an urgent need for actionable, community-based resilience strategies. The Borough of Selinsgrove, located in Snyder County, Pennsylvania, is rising to that challenge. With grant support from the SEDACouncil of Governments, the Borough partnered with a multidisciplinary team led by AKRF to identify strategies that will improve preparation, response, and recovery efforts related to flooding. The study involved navigating a rich institutional knowledge of flooding in the Borough through stakeholder engagement with long-term residents, Borough officials, first responders, and members of the flood task force. The community's prior research and lived experience were key drivers of the resiliency plan, which focuses on organizing and formalizing procedures, response roles, resources access, and partnerships. The study includes the development of a Flood Response Operations Plan, community flood messaging, evacuation planning, and recommendations for obtaining credits towards FEMA's Community Ratings System. The aim of this presentation is to share non-infrastructure-based strategies for building flood resilience.

What the audience will learn:

By exploring practical solutions and real-world examples, Selinsgrove's Flood Mitigation Study identifies pathways to protect Selinsgrove and build flood resilience. Studies like these highlight the urgent need for partnerships, research, and funding to protect riverfront communities from flooding and allow these areas to have a safe and prosperous relationship with the river. As flooding grows more severe across the U.S., efforts like Selinsgrove's show what's possible when resilience planning is both local and forward-looking. In this presentation, the audience will:

- Learn how to engage with stakeholders to understand community-specific needs and develop realistic resilience strategies that align with existing capacity
- Learn how to incorporate historical community data into flood resiliency plans
- Understand one community's approach to "living with flooding" and how non-infrastructure-based approaches can have meaningful impacts
- Learn how to develop response procedures driven by predicted and observed river stage
- Understand different strategies for communicating flood information
- Become familiar with FEMA's community rating system

The Smith Cove Project – A Middle Branch Resiliency Initiative Effort

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What I will be presenting:

The Smith Cove Project is a part of the Middle Branch Resiliency Initiative (MBRI), an innovative, watershed-scale effort in South Baltimore, Maryland to improve water quality, improve habitat diversity, and improve coastal resiliency. Located within the Middle Branch of the Patapsco River, a major tributary of the Chesapeake Bay, the Smith Cove Project integrates an extended detention stormwater wetland into a larger coastal restoration project, enhancing the ecological function of the tidal and non-tidal wetlands. The project is nearing completion of design and is expected to begin construction later this year.

Presenter(s) will briefly introduce MBRI, and then discuss the Smith Cove Project's goals, approach, and design, as well as the fundraising efforts and financing strategy for completing this ~\$35 million project. The project includes the creation of 4.5 acres of stormwater management wetlands to provide water quality treatment of 350 acres of urban drainage area; 1,250 linear feet of living shoreline; near-shore sub-aquatic habitat improvements; and a new public boardwalk to connect previously separated public open spaces.

What the audience will learn:

Community engagement benefits from integration with broader planning initiatives. Leveraging the existing Reimagine Middle Branch engagement framework allowed the project to reach a broad audience efficiently and consistently over time. Integrating project-specific updates into established community channels helped maintain transparency, reduce engagement fatigue, and ensure that local perspectives continued to inform design decisions.

Early and continuous regulatory coordination is essential for advancing innovative, nature-based projects, especially in complex urban environments. Engaging federal, state, and local regulatory agencies early—and maintaining that engagement through iterative design milestones—proved critical to refining the project in ways that improved overall outcomes. Ongoing coordination with MDE, USACE, and other agencies enabled the project team to adapt the layout to site conditions, minimize impacts to open water, and increase water quality and habitat benefits while maintaining permitting momentum.

Integrated stormwater and habitat approaches are well-suited to constrained urban waterfronts. The Smith Cove Project demonstrated that aligning stormwater management, habitat restoration, shoreline stabilization, and public access within a single, coordinated design can maximize benefits in space-limited urban environments. This integrated approach provides a transferable model for other coastal communities seeking to address water quality, climate resilience, and equitable access simultaneously.



How the Envision the Choptank collaborative accelerates clean water goals

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What I will be presenting:

Since 2015, the Envision the Choptank (Envision) collaborative has united federal and state agencies, local governments, nonprofits, and community organizations to restore the Choptank River watershed on the Delmarva Peninsula. Many local governments in the watershed serve small, rural communities with limited tax bases, staffing, and in-house technical expertise, constraining their ability to plan, fund, and implement restoration projects. These challenges are compounded by increasing flooding, aging infrastructure, and climate impacts, with underserved communities disproportionately affected.

The Center for Watershed Protection (CWP), an environmental nonprofit, serves as the grant-funded Technical Assistance Circuit Rider (TACR), delivering consistent, hands-on support across jurisdictions. Acting as an extension of local staff, the TACR helps communities identify and prioritize projects, navigate complex funding programs, and advance implementation. This presentation will highlight how the TACR model and Envision collaborative framework accelerate project delivery and improve watershed outcomes, and will also discuss funding sources that support the collaborative, the TACR role, and project implementation.

What the audience will learn:

Through its TACR role, CWP supports thirteen local governments (four counties and nine municipalities) in advancing stormwater and watershed restoration efforts. To date, this work has resulted in over twenty grant applications and approximately \$4.95 million in secured funding, advancing 12 projects into design or construction. These projects address water quality, flooding, and infrastructure challenges while contributing to nutrient and sediment reductions across the watershed.

Attendees will learn how the Envision collaborative's Common Agenda and coordinated framework align planning, funding, outreach, and implementation to achieve measurable results. The presentation will share practical lessons on building and sustaining effective multi-jurisdictional partnerships, embedding project prioritization into local decision-making, tracking practices to support long-term maintenance, and leveraging technical assistance to overcome capacity barriers. Participants will leave with strategies to replicate this model and accelerate watershed restoration and resilience efforts in their own regions.