

POLICY RECOMMENDATIONS

The RIPPLE Plan is a generational plan that will take decades to fully implement and will require administrative infrastructure that can consistently assess and adapt to opportunities and challenges.

Implementing green stormwater infrastructure at watershed scale requires more than strong project design, it requires durable organizational infrastructure capable of sustaining coalitions, coordinating action, and stewarding built work over time. As the coordinating organization and long-term vision keeper, UpstreamPgh must be shaped to support both implementation and stewardship. Partnerships with municipalities, agencies, nonprofits, community members, and property owners must be cultivated with the same care and consistency as the restored landscapes that form the physical foundation of this plan.

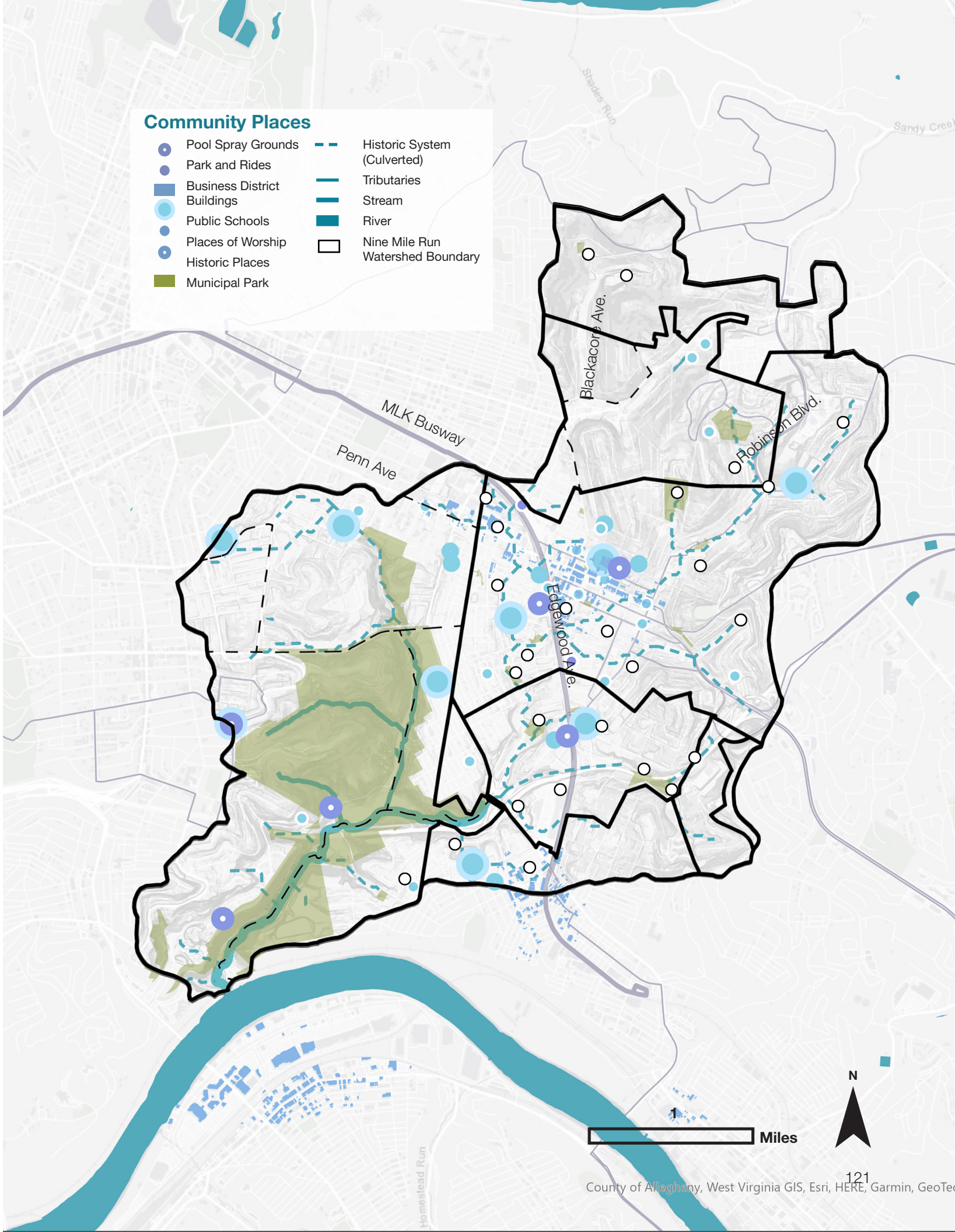
Through this process, **five core challenges** have emerged:

1. municipal continuity
2. multi-municipal coordination and funding
3. alignment of codes and policies
4. the unique design and maintenance needs of living systems
5. UpstreamPgh's capacity to scale.

In addressing these challenges, UpstreamPgh may serve in multiple **roles**, including convener, technical advisor, advocate, partner, and capacity builder. Lastly, the planning process has distilled a series of recommendations and best practices organized around **resilience policy** at the municipal and state levels, with special focus on **community education** strategies and **design integrations**.



ABOVE Rain garden planting with Operation Better Block Junior Green Corp (UpstreamPgh)



CHALLENGE

Support Municipal Continuity

Primary actors: Municipal governments; regional agencies
UpstreamPgh: Convener, grant coordinator, implementation partner

Implementing watershed-scale green stormwater infrastructure requires sustained coordination over many years. In smaller municipalities, frequent turnover in key leadership and staff roles, such as borough managers, public works directors, and permitting officials, can disrupt project momentum, slow decision-making, and complicate long-term maintenance planning. While UpstreamPgh’s sustained partnerships support implementation, this plan explicitly addresses risks related to municipal leadership and staffing transitions.

A recent review of staffing patterns across Pittsburgh, Wilkinsburg, Swissvale, and Edgewood shows varying levels of administrative stability. Pittsburgh’s risk lies in turnover within large departments and leadership roles that can disrupt coordination through shifting priorities. Smaller municipalities face a greater risk from staff changes, as the loss of a single position can significantly slow or stall implementation. While some municipalities in the watershed have maintained consistent leadership, others have experienced interim appointments or transitions that increase risk for multi-year, multi-site efforts. These changes affect project delivery, the ability to pursue joint funding, code alignment, and the stewardship of interconnected infrastructure systems.

To better coordinate efforts and address risks related to municipal continuity, UpstreamPgh can:

- **Convene regular cross-municipal coordination meetings** focused on watershed-scale priorities to reinforce relationships and align timelines. Explore formal and informal mechanisms for multi-municipal cooperation to improve long-term capacity, such as joint planning efforts or shared services.
- **Prioritize early projects in municipalities with stable administrative capacity** (e.g., where a borough manager role is currently staffed and consistent).
- **Develop common documentation**, templates, and onboarding materials to help preserve institutional knowledge when staff changes occur. This might include project related documents such as “handoff-proof” scopes, standard details for streetscapes and other areas, maintenance guides, or administrative templates such as MOUs, maintenance schedules, funding calendars to preserve momentum and shorten re-onboarding time when staffing changes occur.
- **Use multi-municipal workflows to reduce fragility.** Establish a core inter-municipal team with active working relationships to maintain continuity and sustain progress across the watershed. Use multi-municipal workflows to reduce fragility by enabling municipalities to support one another during transitions.

CHALLENGE

Advance Multi-Municipal Coordination and Funding

Primary actors: Municipal governments; regional agencies
UpstreamPgh role: Convener, grant coordinator, implementation partner

Watershed-scale stormwater challenges cross municipal boundaries, yet funding, permitting, and implementation are still largely pursued on a municipality-by-municipality basis. In the Nine Mile Run watershed, this fragmentation limits the ability to plan, fund, and deliver networked green stormwater infrastructure at a meaningful scale. There are currently no routine joint submissions for funding or coordinated capital strategies, resulting in missed opportunities for leverage and efficiency.

Differences in administrative capacity, timing, and familiarity with multi-jurisdictional funding processes create barriers to collaboration. Smaller municipalities may lack the staff capacity to pursue complex grants independently, while larger entities may not have incentives to align schedules or scopes across borders. As a result, projects that would perform better as connected systems are often advanced as isolated interventions, reducing overall watershed benefit and competitiveness for state and federal funding.

To strengthen shared systems and coordination to pursue funding, UpstreamPgh can:

- Together with partners, **identify barriers to joint MS4 funding applications and chart a path to coordinated submissions.** Conduct a focused review of recent and attempted funding efforts to understand where coordination breaks down, such as mismatched timelines, eligibility concerns, staffing constraints, or uncertainty around shared responsibility, and document lessons learned. Define the opportunity cost of not pursuing joint submissions.
- **Pilot a multi-municipal funding application focused on networked GSI** by selecting a near-term opportunity that spans multiple municipalities. This pilot should test shared roles, coordination processes, and reporting structures. One opportunity is the Nine Mile Run Outflow, where above- and below-grade infrastructure crosses multiple jurisdictions and agencies. Alternatively, projects in the upper watershed in Pittsburgh, Wilkinsburg, and Penn Hills may offer a simpler setting to build and test coordination systems.
- **Assess governance models from eastern Pennsylvania and other places** that might increase coordination in the Nine Mile Run watershed. Review successful examples of cross-jurisdictional stormwater cooperation, such as shared authorities, intergovernmental agreements, or watershed-based partnerships, to identify structures that could be adapted to support long-term coordination in the Nine Mile Run watershed.
- **Develop shared project criteria and implementation timelines** by establishing common standards for project readiness, performance, equity benefit, and maintenance responsibility. Aligning schedules, values, and roles will improve the group’s ability to pursue funding and support coordinated design, permitting, and construction.

CHALLENGE

Align Municipal Codes and Policies

Primary actors: Municipal governments and planning commissions
UpstreamPgh role: Technical assistance, coordination, documentation

Watershed-scale green stormwater infrastructure works best when the rules governing development, stormwater management, and long-term maintenance are consistent across municipal boundaries. In the Nine Mile Run watershed, municipalities share hydrology and infrastructure systems, yet stormwater and development requirements can vary, affecting what gets built, how quickly it is approved, and who is responsible for upkeep. When codes are not aligned, projects can face avoidable delays, designers and contractors must navigate inconsistent standards, and the cumulative performance of GSI systems can be weakened by uneven expectations from one municipality to the next. This is particularly relevant for complex areas such as the urban industrial districts at the top of the watershed (Robinson Boulevard) and south of the East Busway (Penn Avenue).

Alignment does not require identical ordinances. Alignment could involve common performance goals, predictable design and review criteria, and clear maintenance expectations so projects can be delivered efficiently and function as a connected system. Networked GSI, which relies on coordinated installations across multiple parcels and rights-of-way, depends on this consistency to support effective operations and long-term stewardship.

To advance code alignment, UpstreamPgh and its watershed partners could pursue the following actions:

- **Conduct a comparative review of stormwater and development codes.** Compile and compare stormwater ordinances and related development standards in Pittsburgh, Wilkinsburg, Swissvale, and Edgewood, focusing on provisions that influence GSI feasibility, review, and long-term stewardship.
- **Identify which codes most strongly support GSI implementation and maintenance.** Highlight the most GSI-supportive provisions, such as clear GSI preference language, zoning code entitlement credits or points, and practical operations and maintenance requirements in stormwater codes. Identify best practices that can be adapted across municipalities.
- **Document challenges created by unaligned codes.** Capture the practical impacts of inconsistency, including permitting delays, conflicting design criteria, unclear maintenance responsibilities, and uneven expectations for private development or redevelopment.
- **Develop recommended code updates or shared guidance language.** Create a concise set of model language and guidance that municipalities can adopt incrementally, emphasizing shared performance outcomes, consistent design expectations, and clear maintenance standards.
- **Provide technical assistance to municipalities** to encourage them to adopt or pilot aligned standards. Provide implementation support such as staff training, checklists, example applications, and pilot project accompaniment, to help translate alignment into day-to-day review practice.

CHALLENGE

Address the Unique Needs of GSI Design and Maintenance

Primary actors: Municipal public works departments; agencies; workforce partners

UpstreamPgh role: Systems designer, partner coordinator

Green stormwater infrastructure differs from traditional stormwater systems because it relies on living materials, soils, and biological processes to perform hydrological functions. These biotic systems change over time as vegetation establishes, matures, and responds to stress, resulting in performance that is more dynamic and less predictable than gray infrastructure. Because GSI effectiveness is shaped by both initial design and ongoing ecological conditions, UpstreamPgh's challenges are two-fold—the implementation of capital projects and the long-term stewardship that supports sustained performance, monitoring, and urban placemaking.

This dynamic behavior also complicates how GSI performance is evaluated. Conventional stormwater metrics were developed for static infrastructure and are less suited to systems that change over time. Variability across seasons and sites makes measurement, comparison, and attribution more difficult, limiting how GSI is documented, monitored, and recognized within regulatory frameworks and how it is credited toward required stormwater management and compliance goals.

To address these needs, UpstreamPgh and its watershed partners can pursue the following actions:

- **Develop shared design standards for networked GSI systems.** Create a “kit-of-parts” approach to design standards and construction details that Municipalities can adopt. Guidelines must be sure to address opportunities to incorporate GSI tools in Bike-Ped improvements, trail development and other right-of-way applications to align with future improvements along the Penn Avenue Business District and Busway Station Areas.
- **Establish lifecycle-based stewardship frameworks.** Define clear maintenance phases and responsibility roles for establishment, early care (typically 3–5 years), and long-term rejuvenation to guide responsibilities, budgeting, and performance expectations over time.
- **Identify sustainable funding strategies for operations and maintenance.** Explore cost-sharing approaches, dedicated maintenance funds, and performance-based funding models that support long-term stewardship beyond initial construction. Explore multi-site maintenance contracts tied to typologies rather than locations and bundling stewardship costs into stormwater fees or MS4 compliance budgets.
- **Expand partnerships with workforce organizations.** Strengthen collaborations with groups such as Landforce to support routine maintenance, build local workforce capacity, and align infrastructure investment with job creation. Create tiered stewardship roles, where workforce partners handle routine care and trained technical partners address adaptive or corrective actions.
- **Explore pay-for-success and outcome-based funding models.** Pay-for-success is a funding approach in which investment is tied to the achievement of defined performance outcomes rather than to project delivery alone. Pilot funding that ties investment to measurable performance outcomes. Craft agreements that evaluate performance across networks and over time, not solely at individual sites.

CHALLENGE

Build UpstreamPgh’s Capacity to Scale

Primary actor: UpstreamPgh
Partner with: Municipalities, agencies, funders

As projects move from individual sites to interconnected systems, UpstreamPgh’s role must adapt to support implementation at multiple scales. Scaling green stormwater infrastructure across the watershed requires flexibility. UpstreamPgh may serve as a project lead in some contexts, while acting as a technical resource, convener, or advocate in others. Clarifying these roles helps partners understand where UpstreamPgh adds the most value and ensures that efforts are coordinated rather than duplicative.

Building this capacity also requires investment in internal systems, staffing, and funding strategies that support long-term coordination and stewardship. Moving from site-based projects to networked systems demands new skills in partnership management, lifecycle planning, and cross-jurisdictional coordination. Early, well-supported projects can serve as demonstration models, showing how scalable approaches can be replicated and adapted across different parts of the watershed.

- To build capacity to scale, UpstreamPgh should consider the following actions:
- **Define clear roles across project types.** Establish when UpstreamPgh will act as a project lead, technical supporter, convener, or advocate, depending on project scale, partner capacity, and funding structure. Identify staffing skills and roles, as well as organizational costs associated with each type of effort.
 - **Invest in internal capacity for network-scale implementation.** Strengthen staffing, tools, and processes that enable projects to move from individual sites to coordinated systems across multiple properties and municipalities. Technical staffing may be needed, as well as a project manager/portfolio manager role tagged to subsheds. Differing skills are needed to implement a capital project than those needed to manage long-term stewardship tasks.
 - **Align staffing and funding strategies.** Coordinate internal staffing plans with funding sources and timelines to support sustained engagement, implementation, and long-term stewardship. As the number and complexity of projects increases there is need for increased fund solicitation and grant writing skills on staff.
 - **Use early projects as scalable demonstrations and evolve staffing structures to align with project growth.** Leverage early projects as scalable demonstrations while evolving staffing structures to support project growth. Use early efforts to test, refine, and replicate approaches across the watershed.

ROLES

UpstreamPgh has worked at many scales over the past 25 years, starting with rain barrels and street trees and scaling up to develop residential and commercial landscape projects through Stormworks. Over the past 10 years UpstreamPgh has developed 10 large scale green infrastructure projects that range in size from stormwater tree pits to municipal parking lots. UpstreamPgh’s role to date has been to develop, install and maintain these stormwater management practices. The role that UpstreamPgh will play in the projects proposed in this plan will differ depending on the scale of the project and partners involved. Some projects will require more advocacy and strategic partnerships than others. Moving beyond being the sole developed will be a major shift moving forward that will enable UpstreamPgh to have a larger impact throughout the watershed.

In some cases, UpstreamPgh may act as a **lead**, particularly where projects occur on vacant land or where a new program must be established to support private property owners. In this role, UpstreamPgh may perform work directly, manage design and construction contracts, coordinate grants, or establish programs that enable residents or businesses to participate in green infrastructure installation. Historically UpstreamPgh has played this role and their existing projects, such as the Swissvale Hill rain garden are an example of this. With 10 large scale green infrastructure projects in the ground UpstreamPgh has demonstrated their ability to play this role for over 10 years. UpstreamPgh will need to play other roles in order to implement many of the projects identified in this plan.

In other cases, UpstreamPgh may serve as a **partner**, helping convene stakeholders, coordinate agencies and property owners, contribute technical expertise, or lead portions of a project that require watershed-scale coordination, such as the Nine Mile Run Outflow improvements.

UpstreamPgh may also act in **support** roles, providing engagement, technical assistance, documentation, or systems design for projects led by municipalities or other organizations, such as assisting the City of Pittsburgh with community engagement or technical coordination at sites like East Hills Park. As an **advocate**, UpstreamPgh can help advance regulatory changes, promote funding opportunities, and elevate watershed priorities across municipalities and state agencies. Finally, as a **watchdog**, UpstreamPgh can help ensure that projects and policies move from planning to completion by tracking progress, maintaining coordination among partners, and supporting long-term stewardship of the watershed system.

BEST PRACTICES

The priority projects outlined in the previous chapter focused on specific GSI interventions to reduce flooding impacts in vulnerable neighborhoods; these projects alone will not directly solve larger issues of poor water quality and contamination.

This will require continued innovation and on-the-ground strategies, from **Resilience Policy** at the municipal and state levels, to continued **Community Education** to further workforce development and partnerships with schools, building the next generation of watershed stewards, to targeted **Design Integrations** that focus on private development improvements and vacant lot reuse, UpstreamPgh has played this role in Wilkinsburg Stormwater Resiliency Project.

Resilience Policy

Community plan amendments to include GSI.

To effectively guide future development and zoning, communities should update existing comprehensive plans by incorporating green infrastructure strategies (GSI). This strategic move is crucial as it initiates the necessary buy-in for subsequent zoning and land development ordinance (SALDO) updates, while also educating the public on the advantages and opportunities presented by GSI through the required public hearing process for amendments.

Action steps include:

- UpstreamPgh will advocate for the incorporating of GSI recommendations into ongoing community plans in partnership with Municipalities.
- UpstreamPgh will review all plans within the study area to identify sections that include or could include GSI.
- UpstreamPgh will contract will a consultant to draft template GSI amendments and ordinances for Municipalities to consider.
- UpstreamPgh will meet with the Planning Commissions to gain support.

Incorporate GSI into capital projects.

Incorporating green infrastructure projects into long-term municipal budgets and funding priorities is a key strategic move for sustainable urban development. This strategy ensures the necessary financial capacity to not only initiate but also sustain these vital environmental initiatives over time, leading to better integration of policies, stronger funding partnerships, and improved grant application success.

Action steps include:

- UpstreamPgh will advocate for a 5-10 year funding plan for construction and maintenance
- UpstreamPgh will partner with Municipalities to coordinate GSI funding sources and partnerships
- UpstreamPgh will advocate for development assessments (eg. tree fund per linear feet)

Revise zoning to allow or incentivize GSI.

This strategy involves revising zoning regulations to actively permit green infrastructure (GSI) and providing incentives to encourage its adoption, which is vital for reducing obstacles to redevelopment and encouraging more developers to incorporate GSI into their plans. This approach sets a clear path toward potentially requiring GSI in the future, ultimately improving community sustainability.

Action steps include:

- UpstreamPgh will meet with the Planning Commission to gain buy-in.
- UpstreamPgh will advocate for zoning district GSI use amendments.
- UpstreamPgh will advocate for Municipal GSI incentives such as streamlined approval processes.
- UpstreamPgh will support the development of a draft Policy statement and Ordinance.

Goal I1: We want to build on our existing green infrastructure.

On the ground today...

➤ **East Hills falls within both the Negley Run Watershed, a high priority, and Nine Mile Run Watershed.**

Negley Run is a large watershed that drains a diverse area of Pittsburgh's East End, including several neighborhoods that have suffered heavily from underinvestment in recent decades, such as Homewood, Larimer, Lincoln-Lemington-Belmar, and East Hills. Negley Run captures more water than any other watershed in Pittsburgh and is the single largest contributor of sewer overflow in the region. It also represents one of the most-urgent flood risk challenges in the City. Major rainfall events regularly lead to flash flooding along lower Washington Boulevard, a key roadway corridor that supports a high volume of commuter traffic from suburbs north of the Allegheny River.

The eastern portion of East Hills lies within the Nine Mile Run Watershed, a small urban watershed covering just 6.5 square miles. Upstream Pittsburgh, formerly Nine Mile Run Watershed Association, oversees many projects, including the largest urban stream restoration

There have been a number of studies completed over the years that offer recommendations specific to addressing stormwater issues and green infrastructure that impact East Hills:

- [The Green First Plan: A City-Wide Infrastructure Assessment prepared for the Pittsburgh Water and Sewer Authority \(2016\)](#)
- [Allegheny Land Trust Transfer of Development Rights Feasibility Study \(2019\)](#)
- [Managing Heavy Rainfall with Green Infrastructure: An Evaluation in Pittsburgh's Negley Run Watershed by the RAND Corporation \(2020\)](#)
- [Negley Run Environmental Equity Study by Upstream Pittsburgh \(2021\)](#)
- [A Vision Plan for the Negley Run Watershed \(2018\)](#)
- [Engaging Communities with Green Stormwater Infrastructure by Grounded Strategies \(2018\)](#)
- [Controlling the Source: A Roadmap for Working Together on Impactful Source Control by ALCOA \(2020\)](#)

ABOVE Excerpt from the Infrastructure chapter of the East Hills Community Vision Plan describing a desire for Green Stormwater Infrastructure projects (City of Pittsburgh)

Revise zoning to allow or encourage urban agriculture.

Urban agriculture is a Green Stormwater Infrastructure friendly land use that also supports a resilient urban environment. By partnering with existing organizations like Grow Pittsburgh, co-benefits such as food production, community public space, and vacant lot activation can be paired with integrated water reuse practices. There is also the possibility to incorporate workforce development, establishes a local food network, and engaging local stewardship from farm-to-table establishments.

Action steps include:

- UpstreamPgh will meet with the Planning Commission to secure support for the zoning revision.
- UpstreamPgh will advocate for suitable zoning districts and land uses for Urban Agriculture (UA) that allow for stormwater capture/reuse.



ABOVE Garden Dreams Urban Farm and Nursery in Wilkinsburg (GrowPittsburgh.org)

Create a GI grant program (residents/businesses).

“Establishing a local fund is a vital strategy to financially support residents and businesses undertaking green infrastructure projects, which is critical for community sustainability and resilience. To ensure the success of this initiative, focused engagement with foundations is necessary to secure initial funding, particularly given the current financial landscape. Furthermore, developing internal workforce capabilities in managing grants and loans is essential to administer the fund effectively and ensure long-term viability.

Action steps include:

- UpstreamPgh will identify resource opportunities for match funds and grants.
- Upstream will define and outline how a low-interest loan model could operate.
- Upstream will identify a suitable grant/loan manager for the organization to oversee the fund.



ABOVE Seasonal plant sale (GrowPittsburgh.org)

Community Education

Develop a GSI training program.

This strategy focuses on building community capacity for green infrastructure by offering hands-on training to residents on how to build and maintain these systems, such as rain gardens. This is important because it will not only increase community knowledge of green infrastructure design and planting, but also empower residents to actively support and participate in future installations.

Action steps include:

- UpstreamPgh will assist with the identification of GSI-related partner organizations and education providers
- UpstreamPgh will connect neighborhood champion, impacted residents and interested parties to potential raingarden sites
- Upstream will develop educational materials and host GSI educational workshops

Partner with school districts for learning and creating GSI.

This strategy involves partnering with local schools to integrate lessons on green infrastructure into the curriculum and to establish dedicated learning spaces, which is crucial for fostering a community-wide understanding of watershed health and water equity. By engaging students early, UpstreamPgh can heighten awareness and cultivate the next generation of environmental stewards and professionals. UpstreamPgh’s existing relationships with local schools in the watershed provide an amazing opportunity to engage students in the design of future GSI projects. Many schools in the watershed have existing rain gardens and rain barrels that can be used in lesson plans and curriculum.

Action steps include:

- UpstreamPgh will lead GSI presentations in school facilities.
- UpstreamPgh will advocate for teachers to add green infrastructure to the curriculum, including topics like plants/edibles, art/placemaking, and career skills.

Incorporate GSI training into green infrastructure projects.

This strategy proposes connecting green infrastructure projects with local job training and employment opportunities. This is a vital approach as it simultaneously builds local workforce capacity in future resilient jobs while providing a direct stepping stone into Green Stormwater Infrastructure (GSI) careers. By integrating these efforts, you can ensure that the local community benefits directly from sustainable development and is prepared for the future of resilient infrastructure.

Action steps include:

- Upstream will advocate for local hiring mandates in GSI-supportive industries
- Upstream will coordinate local training programs (Bidwell, CCAC, Chatham, etc.) for GSI supportive industries
- Upstream will support GSI-supportive training programs through grants, scholarships to local residents

Build local leadership and stewardship.

To foster a stronger community commitment to green stormwater solutions, the strategy involves cultivating leadership within neighborhood groups. UpstreamPgh’s Urban Eco steward (UES) Program is a great example of a stewardship model that can be replicated in other watersheds and areas. Increasing the capacity of the UES program to engage more volunteers will be necessary to maintain projects identified in this plan. This approach is important because it converts local interest into a sustained network of advocates, leading to long-term stewardship and potential workforce development, while also preparing future civic leaders to champion these regional efforts.

Action steps include:

- UpstreamPgh leads educational activities and incentives that engage the community.
- Upstream leads tree planting or swale planting activities, potentially giving out seeds or plants.
- Upstream leads neighborhood clean-ups and establish recycling locations with incentives.
- Upstream leads community socials or block parties.
- Upstream leads fundraisers to finance plantings.
- Upstream supports student programs and street art initiatives.

Design Integration

Develop Streetscape GSI design and detail standards.

To address concerns such as localized flooding and the health of street trees, it is highly recommended that you establish clear standards for street design that integrate natural elements like trees, green spaces, and vital stormwater management features. This strategy is important because it is projected to reduce flooding, particularly during winter, improve the vitality of your street trees, and enhance community understanding of rain garden implementation and maintenance.

Action steps include:

UpstreamPgh will advocate for the following:

- Capture stormwater within the Right-of-Way (ROW) development standards, ensuring onsite capture for 24 hours.
- Direct curb drainage to tree planters.
- Increase the size of tree planters.
- Implement continuous rain gardens in planting strips.

Create projects which use watershed community culture and art for placemaking.

The recommended strategy is to design public spaces to reflect and support the local watershed, nature, and community culture. This approach is vital for enhancing community awareness of water resources and culture, creating opportunities for local art and expression, and effectively bridging the gap between public health impacts and the environment. By integrating these elements, public spaces can become more engaging and informative, leading to improved environmental stewardship and community well-being. UpstreamPgh’s Dornbush Street Rain garden features the Sankofa Garden: Roots to a Brighter Future sculpture by local artist Marlana Adele Vassar which is a great example of integrating public art into green infrastructure.

Action steps include:

- UpstreamPgh will advocate for integrated water narratives into infrastructure design.
- UpstreamPgh will advocate for elements like manholes or signs at parks to convey information.
- UpstreamPgh will advocate for interactive spaces for public engagement.

BELOW Art unveiling at the Green Infrastructure Project at the corner of Dornbush and Bricelyn Streets (UpstreamPgh)



Incorporate GSI into park and playground design standards and capital improvements.

UpstreamPgh recommends implementing a strategy focused on integrating green infrastructure into parks and playgrounds. This approach is crucial for effectively managing stormwater while simultaneously enhancing the quality of play areas, leading to healthier environments and improving the overall parks and recreation infrastructure. Furthermore, this initiative is expected to foster next-generational awareness of water resources and culture, offering opportunities for local art and establishing a valuable local model for future interventions.

Action steps include:

- UpstreamPgh will advocate for the integration of water narratives into parks.
- UpstreamPgh will advocate for Municipalities to install interpretive signs and "you have entered Nine Mile Run" maps.
- UpstreamPgh will advocate for the implementation of interactive spaces or play equipment.



ABOVE Conceptual Design of the Liberty Green and the River Roots Parks with integrated Green Stormwater Infrastructure (Urban Redevelopment Authority)

Repurpose vacant/abandon lots as temporary or permanent GSI locations.

This strategy involves converting unused or vacant land into functional green spaces. This is important because these new spaces can effectively manage stormwater runoff and simultaneously offer valuable benefits to the surrounding neighborhood. Implementing this approach requires a deliberate sequence of actions to ensure successful, community-focused development and installation. UpstreamPgh’s Swissvale Hill, Dornbush St, and Rosedale Hill Rain Gardens are examples of this strategy for GSI development.

Action steps include:

- UpstreamPgh will create and maintain a map inventory of vacant lots / abandon properties suitable for GSI, as identified in the report
- UpstreamPgh will advocate for permanent or temporary GSI intervention
- UpstreamPgh will support partner organization in acquisition, funding, and neighborhood engagement
- UpstreamPgh will support Municipal installation and/or community workday implementation

Create GSI financial incentives funding resource.

It is highly recommended to encourage green infrastructure installation by private parties, such as homeowners and developers, through a combination of financial and approval incentives. This strategy is important because it promotes green stormwater infrastructure (GSI) adoption during redevelopment, contributing to sustainable community development and improved environmental outcomes.

Action steps include:

- Upstream will advocate for Municipal policy, SALDO, development design standards, and development incentives to encourage private development to install GSI.

Recommendations

	Timeline (years)									
Policies	1	2	3	4	5	6	7	8	9	10
Community plan amendements to include GSI.	PP	BF	IM							
Incorporate GI into capital projects.		PP	BF	IM			ON			
Revise zoning to allow or incentivize GSI.			PP	PP	BF	IM				
Revise zoning to allow or encourage urban agriculture.			PP	PP	BF	IM				
Create a GI grant program (residents/businesses).				PP	BF	BF	IM		ON	
Education	1	2	3	4	5	6	7	8	9	10
Develop a GSI training program.			PP	PP	BF	IM				
Incorporate GSI training into green infrastructure projects.			PP	BF	IM					
Partner with school districts for learning and creating GSI.				PP	PP	BF	IM			
Build local leadership and stewardship.					PP	BF	IM		ON	
Design	1	2	3	4	5	6	7	8	9	10
Develop Streetscape GSI design and detail standards.		PP	BF	IM						
Create projects which use watershed community culture and art for placemaking.			PP	BF	BF	BF	IM		ON	
Incorporate GSI into park and playground design standards and capital improvements.			PP	BF	IM					
Identify GSI opportunities when making ped/bike infrastructure improvements.			PP	BF	IM			ON		
Repurpose vacant/abandon lots as temporary or permanent GSI locations.								PP	BF	IM
Create GSI financial incentives funding resource.								PP	BF	IM

PP

Planning & Policies

BF

Budgets & funding

IM

Implement

ON

ongoing