



Enhancing Your Community's Green Infrastructure

Holistic approaches can lead to sustainable community development

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People want to live in walkable, bicycle friendly towns filled with tree-lined streets, public plazas and parks, and eclectic store fronts. They also want access to park systems designed for people of all abilities and ages which provide a variety of activities, artwork, and green roof gardens that supply food to neighboring restaurants. As I travel and work with communities throughout PA, these characteristics represent thriving and sustainable places to live and work.

A former mayor I met at a conference for parks and recreation professionals in 1999 once said that people visiting a place will mostly remember “the first and last thing they see.” He stressed that visitors are drawn to and remember their public parks and gathering spaces. It’s like the saying, “their first impression is your last impression.” What is the first impression that people see when they enter your community? Would they want to come back?

Throughout my 20-year career working in PA boroughs and in partnership with a variety of municipal entities and non-profit organizations, I have seen boroughs successfully revitalize their communities by investing

in their public infrastructure systems. In fact, many have benefitted from the Department of Conservation and Natural Resources’ (DCNR) Community Conservation Partnership Grant Program. While my career has focused on publicly accessible amenities such as parks, trails, and open space, successful community revitalization also entails streets, alleys, sewer and water systems, and sidewalks.

In recent years, especially in the Chesapeake Bay Watershed, I’ve seen municipalities struggle to pay for new state and federally mandated regulations for stormwater, while funding aging infrastructure projects with a limited tax base.

Achieving Green Infrastructure

The common connection of these communities – the park systems, sidewalks, walking and bike paths, plazas, roads, alleyways, and water and sewer systems that are multi-functional and sustainable – are designed in a sustainable manner that is achieved through green infrastructure (GI).

The first impression of community characteristics defined in the opening of this article are

quite visible and easy to identify. Most everyone appreciates and utilizes them. However, a town’s “infrastructure” is not readily visible, and therefore, is often not recognized as being a beneficial part of a thriving community. Unfortunately, some see these amenities as “nice to have,” but not essential from a “dollars and cents” standpoint. This is changing as communities grapple with state and federally mandated requirements to clean up the Chesapeake Bay.

Some municipalities are using public infrastructure to serve multiple purposes, stretching budgets and maximizing the opportunity to attract outside funding to build desired amenities. If communities plan strategically, they have an opportunity to take advantage of the numerous funding options currently available for GI-based approaches to improve infrastructure, meet these requirements, and sustain their communities. Communities must strategically plan for and take advantage of the funding opportunities available now for GI-based approaches to meet these requirements.

It may be hard to put a tax dollar “value” on public infrastructure



Green infrastructure integrates community green spaces with essential infrastructure elements.

such as public parks, plazas, and sidewalks; however, the impact a heavy rain can have on the residents' homes, businesses, and lives can be high. Too often community leaders think of parks, sidewalks, roads, sewer and water systems as serving a single purpose or function and not how these systems can be integrated.

Municipal officials can be left figuring out how to pay for the costly repairs associated with aging infrastructure, property damage resulting from undersized and poorly maintained stormwater facilities, and the increased amounts of erosion, sedimentation, and pollution entering waterways.

Some may also refer to green spaces, public areas, and waterways in terms as "high maintenance" or "nice thing to have but not funded with tax dollars," or "too costly and not beneficial to their economy," etc. This is not surprising given the fiscal challenges boroughs are facing.

However, there can be financial ramifications for non-compliance with state and federal regulations. These agencies have become more aggressive at enforcing mandates, especially in the Chesapeake Bay

region. The mandates are meant to improve the water quality by filtering pollutants and reducing erosion associated with stormwater run-off.

Addressing Stormwater Management

By now, many of your borough communities are grappling with how to meet requirements for regulations pertaining to Municipal Separate Storm Sewer Systems (MS4) and Total Maximum Daily Load (TMDL). The program's core components include community outreach and education; illicit discharge elimination; public participation; pollution prevention; and best management practices (BMPs). You can learn more at www.dep.pa.gov and enter "MS4" into the search bar.

The Department of Environmental Protection (DEP) is working with municipalities to develop plans that outline specific projects and activities to address stormwater runoff and reduce pollutants entering waterways. Municipalities can also work together to help share the cost burden of compliance by working on a regional approach. Larger scale projects

implemented in strategic locations typically provide a far greater cost/benefit than many small, highly structured, individual BMPs. These regional scale projects, often located in parks and on municipal-owned lands, have the potential to also provide flood mitigation, improve bio-diversity, increase groundwater recharge, and provide a destination for environmental education. These larger facilities are also easier to maintain as a successional, long-term, natural system, that reduce maintenance costs over time.

A Watershed Action Plan is a community-based planning exercise to encourage municipal partnerships and provide a guide for identifying and prioritizing potential BMP projects that provide multiple benefits. By sharing the costs for planning and implementation, these regionally-based projects can reduce the individual cost burden of MS4 compliance.

Parks designed with BMPs then serve not just as a recreational amenity, but as an environmental education area. Parks provide an opportunity for public recreation and open space and integrate BMPs to improve water quality

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and meet MS4 requirements. These communities then have the opportunity to receive official credit on their plan implementation, improve the aesthetic value of their communities, and create opportunities for private investments.

Major public funding sources for rehabilitating and or developing these “green” components of a community’s infrastructure are found in different local, state, and federal agencies. Each agency has its own set of priorities, funding eligibility requirements, and grant cycles.

While some recommendations for community revitalization are compartmentalized based on the traditional single purpose function, we need to think more comprehensively. For example, multi-modal transportation amenities have the potential to incorporate best management practices for stormwater runoff into their rehabilitation plans.

Tree lined, pervious sidewalks, alleyways, and public plazas function on the surface as public transportation and park systems, yet can be designed to mirror the natural environment to collect stormwater runoff and enable it to be filtered and drain slowly to prevent flooding. Pedestrian-oriented improvements also provide opportunities for a healthy community by making it easier for people to walk to their destination instead of drive, which also reduces carbon emissions and traffic.

Businesses on streets show 20 percent higher income streams, which is often the essential competitive edge needed for main street store success. Furthermore, realtor based estimates of street tree versus non-street tree comparable streets relate a \$15,000-25,000 increase in home or business value. This often adds to the base tax base and operations budgets of a borough allowing for added street maintenance.ⁱ

Facilities such as basketball courts, playgrounds, and trails, are eligible for funding through DCNR’s Community Conservation Partnership Program and typically require 50 percent matching funds. These funds have the potential to come from other agencies for other components of the revitalization efforts. PENNVEST can fund projects through its Nonpoint Source Loans and Grant program for roadways and parking lots for recreation amenities that incorporate BMPs into their design to mitigate stormwater runoff.

When designing and developing streetscape projects, communities should incorporate GI elements which include tree plantings, porous pavement, bio swales, and rain gardens. In so doing, communities can improve the “first impression” of their downtowns.

If boroughs are going to survive in the future, they must rethink their approaches to community revitalization. Thriving boroughs that make the most favorable “first impression” have a plan in place to strategically move forward towards a holistic, strategic, cost effective, and sustainable approach to community revitalization. This approach incorporates BMPs into the design and maintenance of their communities’ infrastructure such as parks, sidewalks, biking paths, plazas, roads, etc.



Danville Memorial Park

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POTENTIAL FUNDING SOURCES TO SUPPORT GREEN INFRASTRUCTURE



FUNDING SOURCE

PROJECT TYPE

Community Parks & Open Space Infrastructure	Habitat Restoration & Protection	Stormwater Management & Sewer Infrastructure	Trails & Public Paths	Watershed & Sustainable Community Education, Public Outreach, Capacity Building, & Planning	Brownfield Restoration	Streetscapes
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Brandywine Conservancy Community Planning				X		
CFA: Flood Mitigation Program		X				
CFA: Greenways, Trails, and Recreation Program	X		X			X
CFA: Multimodal Transportation Fund						X
CFA: Watershed Restoration Program		X				
Chesapeake Bay Trust: Green Streets-Green Jobs-Green Towns				X		
Coldwater Heritage Partnership Grant Program		X		X		
DCED: Recreation Industrial Sites Reuse Program					X	
DCNR: Community Conservation Partnership Program	X	X	X			
DCNR: Riparian Forest Buffer Program (PILOT)		X				
DCNR: Tree Vitalize Program		X				
DEP: ACT 101 County Planning Grants (Growing Greener)			X			
DEP: Brownfield Action Team Grants					X	
DEP: Nonpoint Source Pollution Educational Mini-Grants, Watershed Education Grants, and Environmental Education Grants				X		
DEP: Nonpoint Sources Implementation Protection Grants (Growing Greener)		X	X			
EPA: Brownfields Assessment, Cleanup, Revolving Loans, and Environmental Job Training					X	
EPA: Clean Water Act Nonpoint Source Grant (Section 319 Grants)		X				
EPA: Clean Water State Revolving Fund (CWSRF)		X				
HUD: Community Development Block Grant Program	X					
HUD: Section 108 Loan Guarantee Program	X					
HUD: Sustainable Communities Regional Planning Grants				X		
NFWF: Chesapeake Bay Stewardship Fund		X				
NFWF: Chesapeake Bay Stewardship Fund - Technical Capacity Grants Program				X		
PA Conservation District: Dirt, Gravel, and Low Volume Road Maintenance Program			X			
PA County Act 13 funding	X					
PennDOT: Transportation Alternatives Program			X			X
PENNVEST: Brownfield Remediation					X	
PENNVEST: Drinking Water, Wastewater, Stormwater, and Nonpoint Source Loans & Grants		X	X			
Susquehanna Greenway: Mini Grant program				X		
USDA: Rural Development Water			X			

Tips for creating successful GI-based projects

- Designate a grant writer and meet with potential funding agencies to discuss your project.
- Hire a professional consultant to develop a plan that incorporates GI BMPs into revitalization projects, and include an extensive visioning process to identify potential funding strategies.
- Establish a study committee that will manage the planning project, work with funding organizations, and designate a spokesperson. Committee members should represent a variety of interests and demographics, such as an athletic club board member, planning commission member, chamber of commerce representative, and school district representative.
- Create a white paper for each project that outlines the timeline, benefits, costs, funding sources, location map, conceptual plans, etc.
- Invest time and resources into developing a maintenance and operations plan and train staff on proper maintenance of GI facilities to ensure long-term function. Assistance can be found from your local watershed organizations, the Alliance for Chesapeake Bay, conservation districts, etc.
- Educate the public about the benefits of BMPs for stormwater management and water quality practices. Place signage at your projects to inform the public about these benefits and the importance of GI features. Engage schools to consider integrating an environmental curriculum that utilizes the BMPs as demonstration projects. For example, fifth grade students in the Warwick School District in Lancaster County participate in an annual stormwater curriculum that includes streamwater testing, riparian buffer ecology, and sediment and erosion control methods.
- Celebrate success with community events to engage children and adults to help them learn more about the benefits of GI. Document successful completion of projects on your website, newsletter, or through local media.

Taking a holistic approach to community revitalization also lends itself to leveraging various funding sources and leads to health and wellness benefits as well making communities more walkable and pedestrian friendly and also reducing their carbon footprint.

Editor's Note: Part 2 will be published in the December Borough News and will highlight how Carlisle, Etna, and Wrightsville boroughs are revitalizing their communities through strategic investments that incorporate green infrastructure elements into their street, park, and brownfield areas. B



22 Benefits of Urban Street Trees, Dan Burden, Senior Urban Designer, Glattig Jackson and Walkable Communities, Inc. 2006