

As part of the Delaware River Watershed Initiative, the Pennypack Ecological Restoration Trust would like to start a conversation with your constituents regarding Green Stormwater Infrastructure. The goal of these projects is to improve water quality in the Pennypack Creek and to execute a portion of Upper Moreland's Pollution Reduction Plan. The following are concepts that may change based on conversations with your constituents.

Five Steps (Our Process in Upper Moreland)

- ✓ Identify regulatory incentive/compliance
- Catalyze community conversation (Next Step)
- Identify and Secure Funding
- Build project with community and township support (If funding secured)
- Monitor and Maintain Project

- **Surrey Lane/ Warminster Road - Fall 2020 - Cost Estimate- \$500,000.00**
 - Upper Moreland Township acquired multiple properties near Surrey and Lori Lanes along Warminster Road as FEMA buyouts. Convert parcels into a rain garden/basin to slow and process stormwater before entering the Pennypack Creek.
- **Dawson Manor Park- Fall 2019- Cost Estimate- \$50,000.00**
 - The proposal for Dawson Manor Park includes installing a new inlet on Lukens Lane to intercept flow from the roadway/residential lawns and direct it towards a 120-foot bioswale, and to a rain garden adjacent to the basketball court.
- **Wesley Enhanced Living-Fall 2019-Cost Estimate- \$50,000.00**
 - A proposed retrofit for the basin includes removing the concrete low flow channel, leveling the basin bottom and modifying the outlet structure to provide extended detention, and installing an energy dissipation feature below the outfall to reduce velocity of discharge to the creek.
- **Boileau Park - Fall 2020 - Cost Estimate- \$300,000.00**

The proposed projects at this park would include:

 - streambank stabilization downstream of the existing stormwater outlet
 - creation of constructed wetlands to increase storage capacity during storm events
 - streambank restoration extending from the constructed wetlands to an existing culvert inlet near Round Meadow Lane.
 - educational features such as a wetland boardwalk with interpretive signage and a terraced outdoor learning space.
- **Fulmor Heights - Riparian buffer – Fall 2019 - Basin – Fall 2020 -Cost Estimate- \$340,000.00**
 - Opportunities include intercepting outfalls which are directly discharging to the creek, stabilizing the streambank with vegetation, and creating new stormwater control features such as weirs and check dams.

Delaware River Watershed Initiative

Suburban Philadelphia is focus of efforts to reduce stormwater problems

A coalition of Philadelphia groups is restoring stream corridors and managing stormwater to slow and and eventually reverse water quality degradation. Significant improvements in watershed health will take decades, but some benefits will be immediate.

The place

Upstream suburban Philadelphia is densely populated and encompasses portions of 36 municipalities governed by nearly 300 local elected officials. Most of the land is developed—nearly 70% is classified as urbanized—and the land cover ranges from 25% to 50% impervious. Almost all reaches of this area's five stream systems are impaired, primarily by stormwater runoff but also by sediment and nutrient pollution.

Threats

Urbanization fundamentally alters the characteristics of watersheds—their hydrologic cycle, riparian corridors, stream geomorphology, and assimilative capacity—thereby affecting water quality, water quantity, habitat, and ecosystems. “Flashy” stormwater erodes stream channels and leaves them choked with sediment and pollution. Efforts to improve water quality must be coordinated across multiple jurisdictions.

Approach

The region has many streamside parks, greenways, and private lands where stream banks and riparian buffers can be restored. Because infiltration management helps control the rate and volume of runoff, the groups will work with residents to build rain gardens, bioswales, and other capture-and-retention systems that intercept stormwater and pollutants, reduce erosion, and prevent further stream degradation. They will also conduct community programs on water quality, citizen monitoring, and green infrastructure maintenance. Another focus is promoting consistency among municipalities in policies that affect water resources, including ordinances on riparian buffers and steep slopes. And the groups will develop green infrastructure guidance for managers of corporate parks, shopping centers, schools, and other large properties.

Accomplishments to date

Partners have restored riparian buffers, stabilized or restored stream banks, and monitored 108 sites for improvements in water quality. More than 300 volunteers have been trained as stream monitors, and thousands of citizens have donated nearly 9,000 hours at clean-ups, plantings, and educational events.

Projected outcomes

Stream restoration efforts (nine projects restoring three stream miles) and stormwater control measures (40 projects treating 739 acres) will reduce nutrient, sediment, and bacterial pollution; reduce the volume and velocity of runoff; and reduce flooding after heavy rains. Success will build urban communities' support for future initiatives.

Funding

The partners seek \$3.8 million in funds from public and private sources, including from towns, the Commonwealth of Pennsylvania, federal agencies, and the contributions of homeowners and sweat equity of volunteers.

Partners

Darby Creek Valley Association, Eastern Delaware County Stormwater Collaborative, Friends of the Poquessing Watershed, Lower Merion Conservancy, Pennsylvania Environmental Council, Pennsylvania Resource Council, Pennypack Ecological Restoration Trust, Temple University, Tookany/Tacony Frankford Watershed Partnership, Villanova Urban Stormwater Partnership, Wissahickon Valley Watershed Association.

Delaware River Watershed Initiative

Upstream Suburban Philadelphia Cluster

The Delaware River Watershed Initiative (DRWI) strategically aligns efforts of 65 conservation organizations to protect important landscapes, restore degraded areas, and measure the impact of the work in eight targeted "clusters" of sub-watersheds within the Delaware River basin. This map represents the Upstream Suburban Philadelphia Cluster.

