



# Green Infrastructure & Stormwater Management CASE STUDY

---

## Wissachickon Creek Park Infiltration Basins and Riparian Corridor

**Location:** Lansdale Borough, Montgomery County, PA

**Client:** Lansdale Borough

**Design Firm(s):** Wallace Roberts & Todd, LLC (prime consultant), Metz Engineers (subconsultant)

**Landscape architect/Project contact:** Yong-Woo Lee, ASLA

**Email:** [ylee@ph.wrtddesign.com](mailto:ylee@ph.wrtddesign.com)

**ASLA Chapter:** Pennsylvania



Image: Wallace Roberts & Todd, LLC

### Project Specifications

**Project Description:** The project site is an approximately 6.7-acre community park. The project consists of a small stream of about 1,000 linear feet with five stormwater outfalls, the floodplain adjacent to stream and parkland in the headwaters of the Wissachickon Creek. The creek received stormwater collected in storm inlets from adjacent neighborhoods. The project creates a sustainable stream corridor system addressing improving water quality, creating ecological habitat, protection of water resources and stormwater management issues. Three

stormwater infiltration basins are built to improve water quality, recharge groundwater supplies, increase temporary storage space for floodwater and maintain baseflow in the Wissahickon Creek watershed. A riparian buffer zone with native plants filters the sheet stormwater runoff from the nearby parking lot, prevent erosion along the stream channel and produce a healthy, biologically diverse stream corridor that will provide food and shelter for terrestrial and aquatic wildlife.

**Project Type:**

Open space - garden/arboretum  
A retrofit of an existing property

**Design features:** Bioretention facility, bioswale, settling and infiltration basins.

**This project was designed to meet the following specific requirements or mandates:**

State statute, county ordinance

**Impervious area managed:** greater than 5 acres

**Amount of existing green space/open space conserved or preserved for managing stormwater on site:** 1 acre to 5 acres

**The regulatory environment and regulator was** supportive of the project.

## Cost & Jobs Analysis

**Estimated Cost of Stormwater Project:** \$500,000-\$1,000,000 (Public funding: Federal, state, regional, local)

**Was a green vs. grey cost analysis performed?** No

**Cost impact of conserving green/open space to the overall costs of the site design/development project:** Not applicable

**Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)?** Did not influence costs.

**Number of jobs created:** 0

**Job hours devoted to project:**

Planning and Design: 1,234 hrs

Construction: 3,770 hrs

Annual Maintenance: 250 hrs

## Performance Measures

### Stormwater reduction performance analysis:

Three infiltration basins are designed to store and infiltrate at least 100% of 1-year storm event (2.576 in/hr) receiving from 28.4-acre of drainage area (neighborhood of single detached houses with 0.4 runoff coefficient rate).

### Community & economic benefits that have resulted from the project:

Human Health Benefits: The project site is located at the headwaters of Wissahickon watershed, which serve Philadelphia's drinking water and recreation use. Infiltration basins and vegetated swales filter sediment and other pollutants from both sheet flow and stormwater outfalls. They also serve to slow water velocity and permit water to recharge the groundwater supply. These measures will help to prevent dangerous flooding and ensure that the creek can provide people with high quality drinking water for years to come.

## Project Recognition

Green Futures Achievement Award by Montgomery County Lands Trust

## Additional Information

**Links to images:** Environmental Benefits from Establishing Riparian Corridor: The project also aims to establish a riparian buffer zone using native plants to improve water quality of sheet runoff from a nearby parking lot and stabilize the stream channel. By replacing the existing turf along the stream corridor with shrubs, grasses and other plants, and creating a series of infiltration basins with wetland plantings to capture flow from storm drain outfalls, stormwater runoff will be filtered and slowed before it reaches the Wissahickon Creek, thus reducing erosion and subsequent sedimentation. Not only do the infiltration basins filter stormwater, they also allow warm runoff from the developed areas to cool before entering the waterway, which, in conjunction with shade provided by canopy trees, will limit fluctuations in water temperature detrimental to aquatic life. Additionally, the increased variety of native vegetation and improved conditions within the creek will provide habitat for both terrestrial and aquatic wildlife, increasing its overall ecological health.