

MONTGOMERY AWARDS

Environmental Stewardship
2021 Award Winner



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Wissahickon Headwaters Stream & Riparian Restoration Upper Gwynedd Township

The Wissahickon Headwaters Stream & Riparian Restoration project received the 2021 Environmental Stewardship Award for restoring and stabilizing the stream channel at the headwaters of the Wissahickon Creek, controlling streambank erosion and sedimentation, and conducting a collaborative process with many partners. This project reconnected the

stream channel with its floodplain along 1,775 linear feet of the Wissahickon Creek in the PECO right-of-way power line corridor, which helps mitigate flooding while creating terrestrial and aquatic habitats for birds, mammals, and fish. This project is also the recipient of one of the 2021 Governor's Awards for Environmental Excellence.



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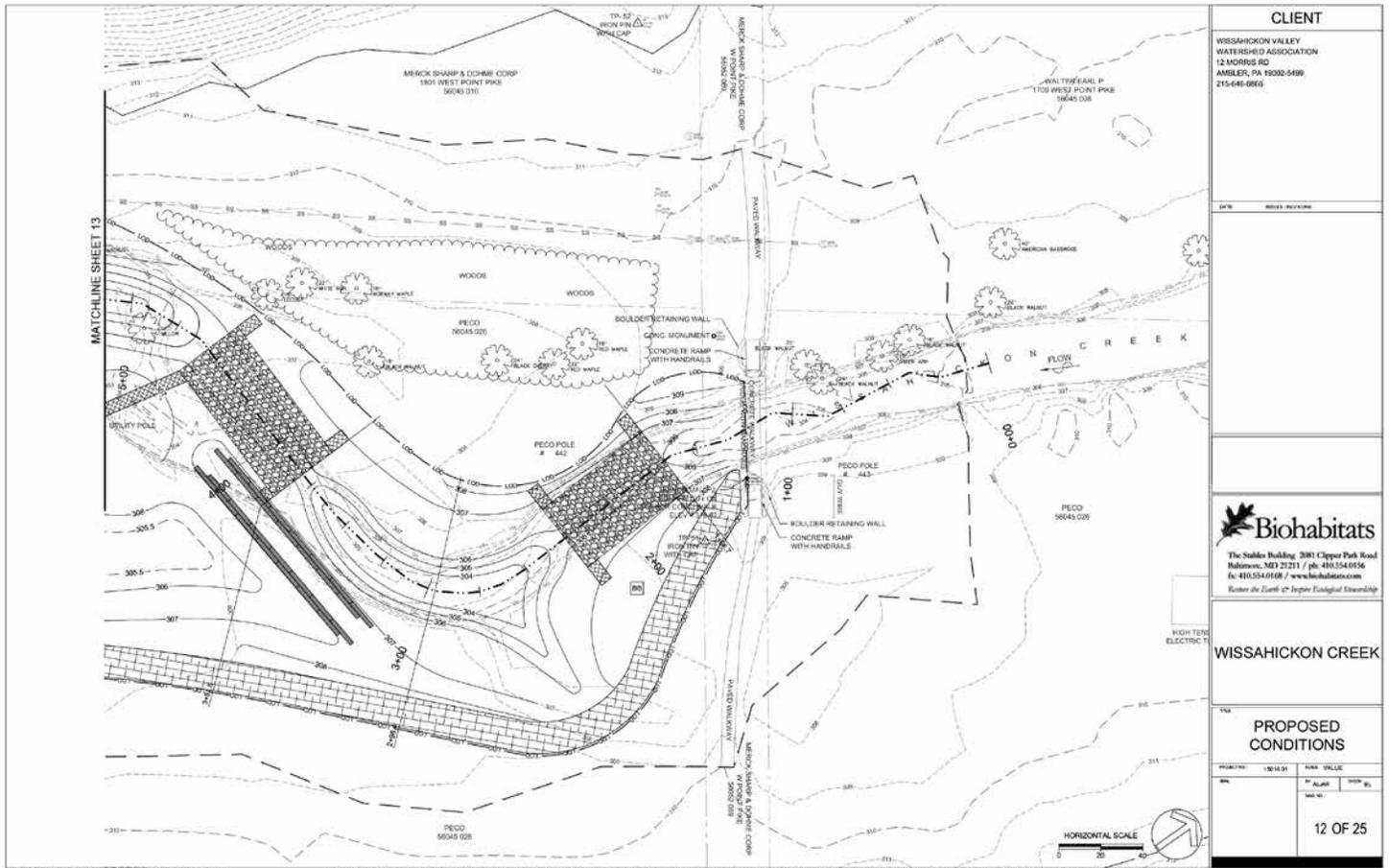
Background

This exceptional project at the headwaters of the Wissahickon Creek is located in Upper Gwynedd Township, an 8.05-square-mile municipality in central Montgomery County. Spanning 64 square miles, the Wissahickon Creek watershed contains nearly 30 percent impervious cover due to urban and suburban development. Despite being a vital natural resource and a Pennsylvania Department of Environmental Protection priority watershed in the region, the Wissahickon Creek has been classified as an impaired stream since 1996 due to excessive nutrients and sediment. Wissahickon Trails, in a commitment to addressing impairments in the Wissahickon Creek, has been working in collaboration with local municipalities, businesses, organizations, and residents as part of the William Penn Foundation's Delaware River Watershed Initiative (DRWI). During this process, the headwater region of the Wissahickon Creek was identified as a "priority area" by the DRWI, since it is greatly impacted by an increase in suburban stormwater runoff, streambank erosion, reduced dissolved oxygen levels in the water, loss of riparian vegetation and in-stream habitat and macroinvertebrate communities, and a disconnection from the creek's floodplain due to entrenchment. All of these issues made the Wissahickon Creek headwaters a viable candidate for an in-stream floodplain restoration project.

Wissahickon Trails



Wissahickon Trails



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Project Description

After five years of planning, the \$1.4 million Wissahickon Headwaters Stream and Riparian Restoration project was completed in the fall of 2020. Designed and constructed by a design-build ecological restoration firm, this project involved the removal of 10 tons of soil, reconnecting the stream to its floodplain. This approach provides increased stormwater capacity during flood events; slows the water velocity, reducing the erosive force; and allows for increased stormwater infiltration and filtration in the created wetland pockets. Structures, such as rock riffle grade controls, boulder toes, and floodplain sills were installed, and pools were created, all of which work together to stabilize the stream channel, control erosion, and create a more stable and functional system as well as creating many different habitat opportunities for aquatic species. As part of the riparian restoration, over 65 species of native plants were planted, which contribute greatly to the ecosystem. These included mostly wetland herbaceous grasses, sedges, and rushes, as well as woody shrubs and trees, creating further wetland and floodplain habitat for other mammals and birds and providing an inviting environment for residents and visitors.

Public-private partnerships are critical when addressing complex environmental challenges, such as stormwater management. Collaboration with local partners, including Merck, Upper Gwynedd Township, and PECO, backed by additional state, federal, and private dollars through the Pennsylvania Department of Environmental Protection, the National Fish and Wildlife Foundation, and the William Penn Foundation, were important to the success of this project. Through this excellent partnership and grant funding, the project succeeded in converting a highly eroded stream into a functional natural floodplain.

Environmental Benefits

This project, located in a Municipal Separate Storm Sewer System (MS4) community with total maximum daily load (TMDL) requirements, successfully addresses several PA DEP priority activities, including reducing pollution loads into a TMDL watershed; restoring an impaired segment of stream, as listed on the Integrated List of all Waters; and restoring and improving a riparian buffer. Based on U.S. Environmental Protection Agency estimates, this stream restoration of 1,775 linear feet will result in load reductions of 275 tons of total suspended solids (TSS), 355 pounds of Total Nitrogen, and 121 pounds of total phosphorus from the creek on an annual basis. This will reduce algal blooms, increase dissolved oxygen concentrations, and improve the habitat for aquatic organisms, including macroinvertebrates. The project will also increase stormwater attenuation and infiltration to restore the natural hydrology, as well as provide habitat for aquatic and riparian species.

The Wissahickon Headwaters Stream & Riparian Restoration project is highly visible near the trailhead of the Green Ribbon Trail, a 12.5-mile trail that follows the Wissahickon Creek from Parkside Place in Upper Gwynedd Township to Stenton Avenue

in Fort Washington State Park in Whitmarsh Township. Through collaboration with public and private partners, this project has transformed a once eroded, channelized, and degraded headwater stream into a functional and attractive environmental amenity.

Location

Park Side Place
Upper Gwynedd Township
Montgomery County

Grant Applicant/Sponsor

Wissahickon Trails
12 Morris Road
Ambler, PA 19002

Site Owner

PECO
2301 Market Street
Philadelphia, PA 19103

Engineer & Contractor

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