The Pennsylvania Turnpike Commission’s total roadway reconstruction and widening project involved 3 miles of the Pennsylvania Turnpike between the Harrisburg West Interchange and Susquehanna River Bridge. The project is located within the Marsh Run and Yellow Breeches Creek watersheds. A total of 13 wetlands and 16 watercourses were permanently impacted by the project and required mitigation to obtain the permits for construction.

Challenges included:

- Identification of appropriate mitigation sites within an urban/suburban area to provide 1,45 acres of wetland mitigation and 3,695 linear feet of stream mitigation, including on-site stream enhancement/restoration and off-site stream restoration (2,956 linear feet).
- Agency coordination and review.
- Landowner coordination and acceptance of the mitigation sites.
- Integrating private property/former pasture into public recreational space.
- Enhancement of stream channels to meet NPDES permit water quality goals.
- Providing environmental uplift in water quality functions.
- Schedule impacts due to agency comments changing scope and approach for off-site stream mitigation design.
- Post-design flood events changing existing stream alignment and elevations and causing additional eroded streambanks prior to construction.
- Design innovations including modified J-hooks for the stream.
- Custom seed mixes for wildlife habitat, enhancement of the wetland plant community, and the creation of stream riparian buffers.

The mitigation sites have created a diversified habitat and restored stream habitat, provided a reduction in pollutant loads, and developed public use space within the Yellow Breeches Creek Watershed. Post construction field views of the stream and wetland mitigation sites by the regulatory agencies have been positive.

Completed wetland grading showing one of the potholes and initial wetland vegetation. The viewing platform is in the background.

Tributary to Yellow Breeches Creek after installation of stream structures and riparian buffer landscaping.

The field that became the mitigation site is located behind the wetlands shown in the foreground.

Tributary to Yellow Breeches Creek showing signs of bank instability and disconnection to the floodplain.

Wetland mitigation site in the spring of 2018, three years after construction, showing one of the constructed potholes filled with water plantain.