

Flints Grove Stormwater Management Pond Retrofit & Stream Restoration

North Potomac, Maryland



Flints Grove Pond post-construction.

Stream restoration and the retrofit of an outdated stormwater management facility improve water quality, habitat, and safety in Maryland's most populous county.

SERVICES

Ecological Restoration
Infrastructure
Water

As part of an effort to improve water quality within the Muddy Branch Watershed of Montgomery County, Maryland, the state's most populous county, Biohabitats designed and supervised construction of the retrofit of the Flints Grove stormwater management pond. Intended to receive runoff from nearby residential development, the facility was built decades before the establishment of modern stormwater management practices and MS4 permits. Over the years, uncontrolled runoff from surrounding development severely degraded the stream flowing into the facility, diminishing water quality and habitat and threatening adjacent utilities.

Biohabitats' design not only retrofitted the outdated facility in accordance with the latest criteria and with State and County safety standards, but it also restored 1200 LF of the degraded stream and its adjacent floodplain. The retrofit involved the creation of a wet pond designed to enhance quantity and quality control and achieve the Water Quality Volume and the Channel Protection Volume for the drainage area. The metal riser structure was replaced with a concrete structure to achieve restoration goals and extend the life of the facility. The existing principal spillway was sliplined with a HDPE liner maintaining the capacity and providing long term stability. A clay core, clay face, filter diaphragm, and embankment grading brought the pond into compliance with current MD378 regulations. An aquatic bench planted with wetland species serves as a safety feature while providing habitat for native flora and fauna. The stream restoration, which consisted of the creation of riffle-pool and cascade-pool sequences, created a stable stream corridor and minimized sediment contributions to the pond. The riparian corridor was planted with native grasses, shrubs, and trees to provide further habitat and ecological benefits.

In addition to bringing the facility up to modern standards, the retrofit reduced pollutant loading and enhanced habitat in a highly urban area.