

Nixon Farm Mitigation Site

Howard County, Maryland



Through creative site modifications involving minimal excavation, this project raised the groundwater table to provide over 36 acres of wetland creation, enhancement, and preservation, as well as extensive riparian improvements.

SERVICES

Ecological Restoration

To meet mitigation goals, the Maryland State Highway Administration sought to restore stream and wetland along 36 acres of reclaimed agricultural land and an incised tributary adjacent to the Middle Patuxent River.

By assessing the site and monitoring groundwater, Biohabitats determined ditching and pond development had contributed to compromised water resources and channel incision in the river and its tributary. Biohabitats developed a design based on minimal grading and creative modifications to surface water drainage patterns. This approach raised the groundwater table, extended near-surface saturation, and preserved existing on-site floodplain forest and wetlands. Biohabitats integrated regenerative stormwater conveyance principles with more traditional techniques to improve channel-floodplain connections. The design involved redirecting tributary flow into the site with a new channel; plugging a historic drainage ditch; modifying an existing pond; installing bentonite plugs along the abandoned tributary to form vernal pools; and creating shallow depressions and berms to restore wetlands, surface streams, groundwater resources, and floodplain connection. Biohabitats also provided construction management services.

The project had positive effects on the groundwater and wetland hydrology of the floodplain, generating 7.5 acres of wetland, 1,300 lf of stream, and 8.4 acres of forest creation, enhancement, preservation mitigation credits, as well as extensive bioretention. Due to the creative measures employed in the design, the project mitigation and bioretention value is estimated at twice the actual project cost.