

# Nixon Farm Mitigation Site

Howard County, Maryland



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

By assessing the stream and wetlands and monitoring groundwater, Biohabitats determined anthropogenic ditching and pond development had contributed to compromised water

resources and channel incision in the Middle Branch Patuxent River and its tributary.

Rather than “chasing” the groundwater with large excavation efforts, Biohabitats developed a design based on minimal grading and creative modifications to surface water drainage patterns. This approach raises the groundwater table, extends near-surface saturation, and preserves existing on-site floodplain forest and wetlands. Biohabitats also integrated

*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.*

“regenerative stormwater conveyance” principles with more traditional stream restoration techniques to improve channel-floodplain connections.

The design involved redirecting tributary flow into the site with a new channel design; plugging a historic agricultural drainage ditch at critical locations; 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 to ensure compliance with the design intent and to address any unexpected field conditions.

Early monitoring efforts suggest that the project is having significant positive effects on the groundwater and wetland hydrology of the floodplain, and will expand wetland distribution and extend wetland hydroperiod. The project is generating 7.5 acres of wetland, 1,300 lf of stream, and 8.4 acres of forest creation, enhancement, and 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.

## SERVICES

- Concept
- Construction plans
- Permitting
- Construction oversight

*conservation planning*  
**ecological restoration**  
*regenerative design*



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