

Ponds at Potomac Yard Park Ecological Stormwater Retrofits

Alexandria, Virginia



Ecological retrofits—including active wetland edges and floating wetlands islands—installed within existing stormwater ponds improve water quality, aesthetics and habitat value while protecting the Potomac River.

The Ponds at Potomac Yard are two existing stormwater management ponds that receive runoff from nearby development. These ponds ultimately discharge to the Potomac River, a tributary of the Chesapeake Bay. Biohabitats' ecologically engineered approach, designed in conjunction with Ambler Design, LLC, retrofitted the

ponds to improve water quality and increase circulation and dissolved oxygen with an aesthetically pleasing solution.

Both ponds are highly visible from adjacent shopping areas. The North Pond, the larger of the two ponds at approximately 3.5 million gallons, is located behind a Target™ shopping building. The South

Pond, with a volume of one million gallons, is beneath a highway overpass. The ponds were originally designed as 'wet' ponds for the management of stormwater prior to discharge to the Potomac River but the inherent water quality and aesthetics were poor. Through the use of regenerative and natural systems design principles, the quality of both the internal water and that being discharged to the river has been improved.

The North Pond is outfitted with an 'active edge wetland filter bed' that purifies water, while the South Pond is outfitted with a 'floating aquatic wetland' system. In addition, energy-efficient supplemental aeration increases circulation and dissolved oxygen in both ponds. This improvement of the ponds' ecological function helps reduce pollutants and creates

more attractive pond edges and clearer water columns.

The retrofits address the stratification, low oxygen levels, and lack of circulation in the stormwater ponds. The active edge wetland filter and floating aquatic wetland systems provide habitat and surface area for a wide range of naturally occurring, attached growth microorganisms and invertebrates. Passing water through or across these surfaces can reduce nitrogen, phosphorus, biological oxygen demand (BOD), suspended solids (TSS) and fecal coliforms. Bottom aeration "turns the pond over" allowing additional oxygen to be absorbed at the surface.

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