

## ARUNDEL-ON-THE-BAY

# Arundel-on-the-Bay LID and Living Shoreline

Annapolis, Maryland



*from top: Before and after roadside swale retrofit; Before and after living shoreline construction; Planting the living shoreline.*

Founded in 1890 on a peninsula bounded by the Chesapeake Bay and Fishing Creek, Arundel-on-the-Bay is a 300-acre community whose residents share a deep appreciation of the natural coastal environment, and a commitment to its protection. In 2010, the community partnered with the South River Federation to assess drainage and flooding issues, with the goal of implementing a variety

*A waterfront community protects its coastal ecology through regenerative design.*

of best management practices in the most critically needed areas. A 40-acre area with a series of roadside drainage ditches was identified as a top priority. During small storms, water would slip through the ditches and drain into Fishing Creek, untreated. During large storms, the ditches would become overwhelmed with stormwater volume and localized flooding would occur.

To help the community address this top priority site, Biohabitats applied a regenerative stormwater conveyance approach to design, permit, and supervise the construction of two roadside swale retrofits to improve water conveyance, reduce localized flooding, and enhance water quality.

In full collaboration with the community, Biohabitats crafted a design to convert the ditches into relatively flat swales with a repeated series of riffle grade controls and pools. A portion of road surface was removed to

create a wider flow path. The design also involved excavating the underlying soil and replacing it with a bioretention mix to facilitate water quality improvements during frequently occurring storms of low volume.

One of the swales was integrated into a shoreline erosion protection BMP termed a 'living shoreline,' which improved the biological function of the Low Impact Development (LID) facility. The other swale was integrated into an existing community park, taking advantage of the park property during the infrequent large storm events for temporary floodwater storage.

## SERVICES

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800.220.0919  
www.biohabitats.com

