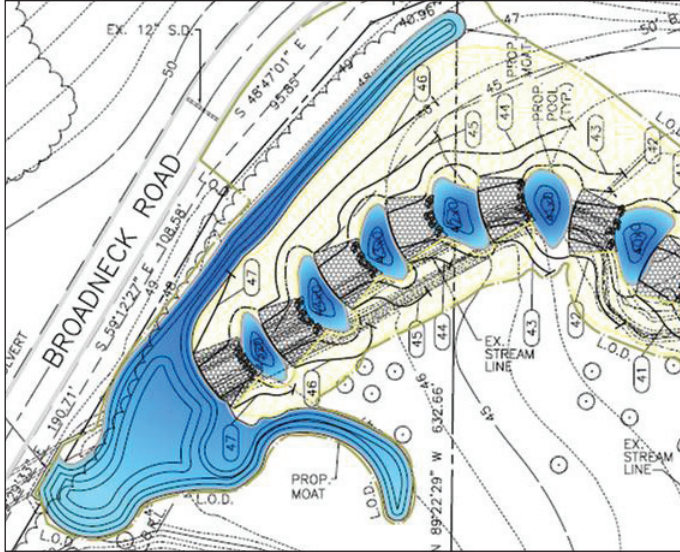


# Windsor Ridge Stream Restoration

Anne Arundel County, Maryland



Initial conditions

**B**iohabitats, Inc., has designed an innovative regenerative stormwater conveyance (RSC) system on approximately 1,000 linear feet of an actively degrading tributary to the Chesapeake Bay located in the coastal plains of Anne Arundel County. The stream was intermittent and downcut approximately 12 feet deep, originating at a roadway culvert.

*Using the Regenerative stormwater conveyance approach improved stormwater treatment through sand seepage, and also rehydrated riparian wetlands, re-established ecological processes, and improved the stream's natural resource functions and aesthetics.*

Using RSC, the incised channel was filled with porous, granular material held in place with grade control weirs and cobble riffles. An energy dissipation pool at the upstream end of the project provided some energy reduction and infiltration of the stormwater before flowing into the channel.

As the flow ramped up and filled the initial pool, seepage through the granular channel fill began its sub-surface movement down the channel bed. With increasing flow, each pool filled with water before overflowing over the cobble riffle/boulder grade control downstream to the next pool. Each pool also lost water through its bottom into the granular channel fill used to fill the incised channel, which

reduced in-channel flow and recharged the local shallow ground water table.

Once the channel storage volume was saturated, the water flowed through the channel downstream, with much less velocity, volume, and erosion potential. At higher discharges, the weirs forced a broad, shallow, non-erosive flow that reduced the sediment load and incision associated with the storm-dominated channel, while transitioning the intermittent nature of the channel back towards its perennial origin.

### SERVICES

- Inventory and Assessment
- Design
- Permitting Construction
- Procurement Construction
- Oversight
- Post-Construction Monitoring

conservation planning  
 ecological restoration  
 regenerative design



800.220.0919  
 www.biohabitats.com

