



down to earth

Environmental Restoration Quarterly • Summer 2021

Heyn Appointed Director & O'Meara Promoted to Bureau Chief

1 Heyn Appointed Director & O'Meara Promoted to Bureau Chief

2 Project Spotlight: Willow Pond

3 Stream Buffer Planting at Commerce Center

4 Stormwater Update



Christopher Heyn, P.E., Bureau Chief of the Bureau of Resource Management, was promoted to Director of the Department of Land & Resource Management by the Board of County Commissioners on June 7, 2021.

Chris began his employment with Carroll County in 2010 in the Bureau of Development Review, serving as the Engineering Reviewer. In 2013, Chris became the County's Watershed Restoration Engineer overseeing the design and construction of stormwater management retrofits to meet County water quality permit requirements. In 2020, he was promoted to the Bureau Chief of Resource Management. Chris now has management responsibilities for the Bureau of Resource Management, the Bureau of Development Review, Agriculture Preservation, and Zoning Administration.



*Christopher Heyn, P.E.
Director*

Chris earned his BS in Civil Engineering from Lehigh University and his Masters Degree in Environmental Engineering from Johns Hopkins University.

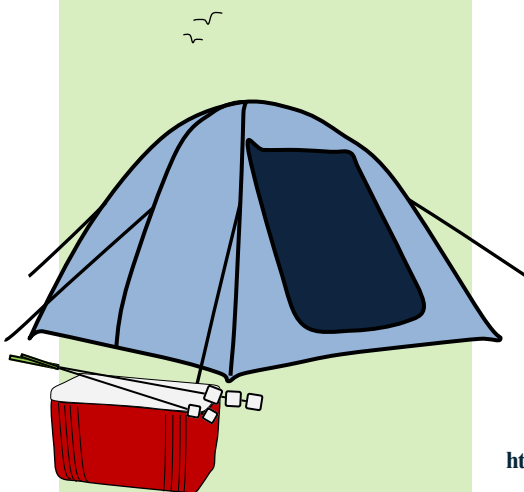
Janet O'Meara, Watershed Management Coordinator, Bureau of Resource Management, was promoted to Bureau Chief of Resource Management. Janet has been working in the Bureau since 2007 focusing on coordination of all aspects of restoration projects to achieve compliance with the County's National Pollutant Discharge Elimination System (NPDES) permit, including managing the maintenance of County-owned facilities.



*Janet O'Meara
Bureau Chief*

Janet earned her BS in Marine Science from Coastal Carolina University.

Congratulations to both Chris and Janet on their recent promotions!



Project Spotlight: Willow Pond

By Elizabeth Spencer, Watershed Restoration Engineer

The Willow Pond stormwater management facility in the Eden Farms Subdivision in Westminster was completed just in time for the Spring and early Summer rains. The Bureau of Resource Management contracted the design and construction for this combined stormwater retrofit and adjacent stream restoration for Willow Pond. This project has been a large success in accomplishing stormwater and habitat goals, and it may also provide insight for the design of future projects.

The innovative design by the engineering firm RK&K, balances stormwater treatment in the wet pond while also creating diverse habitat in the pond, floodplain, and stream. This design utilizes a structure engineered to intercept the floodway, diverting flood flows into the stormwater pond, while still maintaining the base stream flow within the channel. Kibler Construction finished construction at the beginning of the year, but the facility has already experienced several large rain events that utilized its various diversion and outflow features.

The retrofitted wet pond facility provides treatment for over two and a half inches of rainfall from seventy-three acres of impervious surface that drains to it. This treatment slows the release of flood flows to lessen the damaging shear stresses and velocities associated with storm events. Stormwater treatment by this retrofit, for

example, has reduced the peak discharge of the 10-year storm event at the downstream culvert by 48%.

Much of the interest in this project has come from increasing concerns of temperature impacts to receiving streams, particularly in cold-water trout habitat. Wet pond facilities are unfavorable due to the solar impacts on the temperature. This retrofit design included deepening and shrinking the surface area of the existing pond to lessen the solar impacts on the surface water temperature. For added temperature mitigation, the wet pond was retrofitted with an underdrain that moves the outflow through a gravel lens at the bottom of the facility before it is discharged into the stream. Water quality and temperature studies are already underway to help quantify the temperature impacts of this innovative design.

Another unique feature of this design is the stream and wetland complex in the adjacent floodplain. The intent of the floodplain design is to reconnect the floodplain, stream channel, and groundwater table, thereby helping to reduce stresses and velocities of flood flows that do overtop the weir wall by spreading them across the wide floodplain. The floodplain access through the wetland complex now facilitates the connection of nearly four-acres of wetland floodplain to the historic groundwater aquifer.



Willow Pond SWM Facility Retrofit & Stream Restoration

Grant funding for partial construction monies provided by:



Stream Buffer Planting at Commerce Center

By Byron Madigan, Water Resource Supervisor

The Bureau of Resource Management is working in partnership with the Department of Public Works to plant native trees on an open space parcel located adjacent to the Carroll County Commerce Center off MD Route 97, just outside the corporate limits of Westminster. The project will involve planting over 1,500 trees on approximately 7.64 acres upstream of the Willow Pond stormwater retrofit and stream restoration, implementing both stream side and upland plantings on County-owned property in the Liberty Reservoir Watershed.

A portion of this planting will expand on an existing riparian area adjacent to an unnamed first order tributary to the West Branch Patapsco, a Use IV-P stream. Establishing a successful streamside buffer in this headwater location will help remove excess nutrients from stormwater runoff, as well as provide shade for cooler water temperatures as Use IV-P streams are classified as recreational trout waters and are capable of supporting adult trout for a put and take fishery.

Most of the Commerce Center Reforestation project was funded by the Department of Natural Resources Chesapeake & Coastal Service through a grant awarded to the County in the amount of \$42,000. This project is to be planted in the late fall of 2021. Maintenance and inspections of the planting area will occur for a minimum of 3 years to ensure establishment of a successful planting.

Commerce Center before planting:



Grant funding provided by:



HOUSEHOLD TIPS & TRICKS

Give Landscape Plants, Shrubs, and Trees a Fighting Chance (excerpted from "Backyard Actions for a Cleaner Chesapeake Bay" - Maryland Department of Agriculture)

- ◆ Watch for signs of stress caused by drought. Wilted, curled, dull, yellowed, or brown leaves and undersized fruits and vegetables are signs of thirst.
- ◆ Use mulch to help plants retain moisture and reduce evaporation. A two-inch layer of mulch or compost is recommended. Too much mulch will prevent water from reaching plant roots.
- ◆ Condition your soil. Water does not easily penetrate clay soils and passes too quickly beyond plant roots in sandy soils. Mix in organic matter to increase the penetrability of clay soils and the water-holding capacity of sandy soils.
- ◆ Water landscape plants early in the day to reduce evaporation. Avoid watering at night—it promotes disease.
- ◆ If you must water at night, keep water off plant leaves.
- ◆ Create a shallow depression around newly planted trees and shrubs to catch and hold water.

Stormwater Update

By: Janet O'Meara, Bureau Chief, Bureau of Resource Management

East West Stormwater Management Facility is located off of Prospect Road in Mount Airy. Construction of this project was awarded to Kibler Construction. Construction of the stormwater management facility is complete; the contractor is currently working on the construction of the diversion structure which will direct storm flows into the stormwater management facility. This project is being paid for by the Town of Mount Airy, with a portion being funded by the Maryland Department of the Environment (MDE) Maryland Water Quality Financing Administration (MWQFA) through the Bay Restoration Fund.

Greens of Westminster Stormwater Facility is located in Westminster. Construction is complete and the grading permit for this project has been closed. A portion of the construction costs for this project are being paid for by MDE MWQFA through the Bay Restoration Fund.

The **Mayberry Stream Restoration** is located off of Mayberry Road in Westminster. Construction of this project was awarded to Magstone, LLC and began in January. Due to a stream closure, the contractor was not able to work March 1- May 31. Construction began again June 1st and is progressing well. This project will include restoration of over 7,000 feet of stream on the Mayberry Game Protective Association, Inc. property. A portion of this project is funded through the Chesapeake & Coastal Service.

The **Trevanion Terrace Stormwater Management Facility** is located off of Trevanion Terrace in Taneytown. Construction of this project was awarded to CJ Miller, LLC. The new facility will provide water quality treatment for the 189 acre drainage area. A portion of the construction costs for this project are being paid for by MDE MWQFA through the Bay Restoration Fund.

Twin Ridge Stormwater Management Facility is located off of Deer Hollow Drive in Mount Airy. This retrofit took the two existing facilities and created a wetland facility. Construction has been completed and landscaping was installed. All costs associated with this project are being paid by the Town of Mount Airy.

Woodsyde Stormwater Management Facility and Stream Restoration is located off of Piney Ridge Parkway in Eldersburg. Construction of this project was awarded to Magstone, LLC and began in October. Construction is currently wrapping up, and we anticipate the landscape planting along the stream channel and Piney Ridge Parkway to be planted in the near future. A portion of the construction costs for this project are being paid for by MDE MWQFA through the Bay Restoration Fund.

Twin Ridge



Woodsyde SWM Facility



Woodsyde Stream Restoration



Partial grant funding for
Mayberry provided by:



Partial grant funding for
East West, Greens of Westminster,
Trevanion Terrace, and Woodsyde
provided by the Maryland Water
Quality Financing Administration
Bay Restoration Fund

