



down to earth

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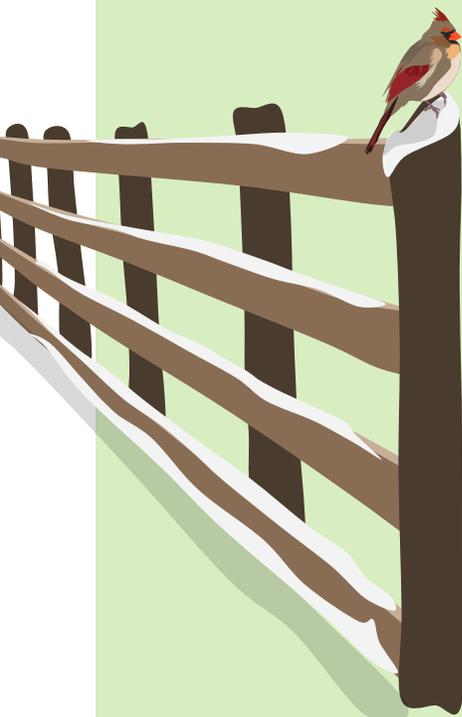
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Example of a Water Resource Easement violation (clearing around the stream)

Water Resource Easements

By Tracy Eberhard, BRM Staff

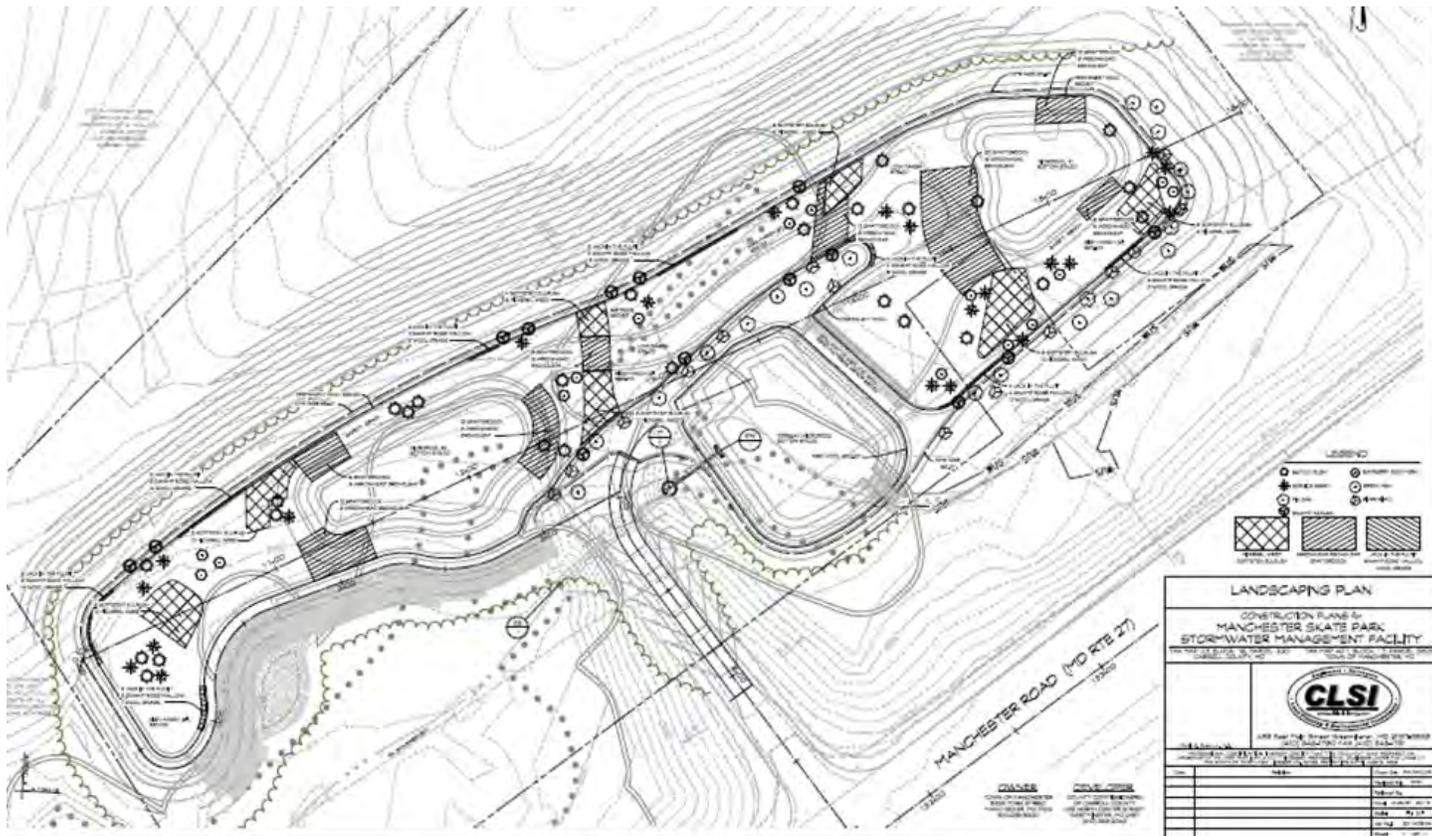
The purpose of Chapter 154 of the Carroll County Code of Public Local Laws and Ordinances, Water Resource Management, is to protect the quality and quantity of ground and surface water resources in Carroll County. The Code, adopted in 2004, established management standards and design criteria for land use subsequent to review, standards for review of development activities, enforcement procedures for pollution violations, and requirements for the protection of existing and future water resources.

Water Resource Management largely focuses on the protection of groundwater, streams, ponds, and wetlands through the implementation of performance standards, design requirements, and the designation of buffers and easements. Water Resource Protection Easements protect the stream system from adjacent land use and provide many benefits to the stream, watershed, or drainage area in which it resides. Benefits include filtering runoff, stabilization, nutrient uptake, moderating stream temperatures, and providing wildlife corridors.

Each Deed of Easement defines permitted and restricted activities within the established easement. Restricted activities prohibited by the easements are soil disturbance, storing or dumping of materials, composting or broadcast spreading of yard waste, storing, maintaining, or operating motorized vehicles, housing or otherwise maintaining domestic animals, and burning of vegetation. Water Resource Easements are inspected once every few years to ensure compliance.

There are over 400 recorded Water Resource Protection Easements in Carroll County, ranging in size from less than 0.25 acres to over 40 acres and encompassing over 1,800 acres of forested and non-forested buffer areas.

By providing pollution prevention and nutrient uptake, Water Resource Easements allow the County to meet Total Maximum Daily Load (TMDL) requirements and address requirements of the National Pollutant Discharge Elimination System (NPDES) permit. •



Converting a Skate Park to Wetlands in Manchester

By Chris Heyn, BRM Staff

The Carroll County Bureau of Resource Management is working with local municipalities to identify projects that will treat existing impervious area as part of our National Pollutant Discharge Elimination System (NPDES) permit. The Manchester Skate Park, located along MD Route 27, is an ideal location for a treatment facility due to its proximity to a storm drain system that captures a large portion of the town. It also happens that the skate park is underutilized as a community amenity due to its seclusion from the main part of town. The Town and County agreed that this site would be ideal for a water quality facility while the Town looks for a more suitable location for the skate park.

After evaluating a number of design options, the County and Town determined that a pocket wetland would work well with the naturally occurring springs and areas of existing wetlands. The proposed design will have permanent wet pools of varying depths to encourage native plants to thrive and consume nutrients.

As part of the construction, plantings of native species such as Swamp Azalea, Pin Oak, Pickerel Weed, Arrowhead Broadleaf, and Jack in the Pulpit will be placed throughout the facility.

In an effort to minimize impacts to existing forested wetlands downstream of the skate park, the County focused on a design that maximizes the area where the existing skate park is located. This does, however, require a significant amount of excavation.

Fortunately, the Maryland State Highway Administration (SHA) is currently working on a project to widen MD Route 27. Their need for fill material and the County's need to get rid of material presents an opportunity to work together for mutual cost savings. As a further sign of cooperation, the County designed the pocket wetland to provide water quality treatment for the additional impervious area from the MD Route 27 widening.

At this point, the County's plans are 99 percent complete. The SHA is scheduled to complete their plans in 2016, with a planned construction schedule in the spring of 2017.

Over the next year, the County and the SHA will coordinate on how to synchronize construction so that both entities can save money related to excavation and fill.

Due to the significant amount of roadway impervious area that the facility will treat, this project has been selected by the federally-funded Transportation Alternatives Program to receive a grant for construction funding. This grant will fund 80 percent of the construction cost with a maximum of \$756,043. The remaining 20 percent of construction costs will be funded by the County and municipalities through the Memorandum of Agreement signed October 23, 2014 that established their partnership in the National Pollutant Discharge Elimination System (NPDES) permit.

This project highlights the cooperative efforts of the County with local municipalities and the SHA to meet our common goals of reducing nutrients in our state's waterways. Our goal is to continue these relationships in other environmentally conscious and cost-effective projects. •



Three-year Tree Planting Grant Achieves Impressive Results

By Jon Bowman, BRM Staff

In 2012, the Carroll County Bureau of Resource Management applied for and was awarded the Governor O'Malley's Stream Restoration Challenge Grant. The purpose of the grant was to provide local governments with funds for tree planting projects. The resulting planted acreage was then credited toward the County's National Pollutant Discharge Elimination System (NPDES) permit, Total Maximum Daily Load (TMDL), and Watershed Implementation Plan (WIP) goals. Ultimately, Carroll County was awarded \$703,190.00 which was used to implement 14 different projects between the spring of 2013 to the fall of 2015.

As I reflect on the last three years of this grant, it occurs to me that there are several ways to appreciate what was accomplished.

The Numerical Result

\$659,794.27 spent
 117 acres planted
 27,821 trees planted
 45 private properties planted
 14 public properties planted
 1,049 volunteers involved
 2,877 volunteer hours logged
 833.98 lbs. total nitrogen reduced per year
 38.74 lbs. total phosphorous reduced per year
 4.67 tons total suspended solids reduced per year

The Physical Result

Planting trees on an open field or grass lawn results in a real transformation. The visual transformation is obvious, but this is only one of the physical changes that takes place. As they grow, the trees planted will improve the water quality in our local streams by filtering sediment and nutrients from stormwater runoff. In addition, their roots will help stabilize stream banks thus decreasing erosion. As they mature, streamside trees will provide shade throughout the growing season resulting in cooler stream temperatures. In the fall these same trees will drop their leaves in the stream providing organic matter that is the basis of the aquatic food web. Both of these physical changes greatly benefit stream dwelling organisms. Other types of wildlife will also benefit from the food and shelter these new trees will provide. Last but not least, it is appropriate to consider the air quality improvements that will result from these trees sequestering carbon dioxide and producing oxygen.

The Human Result

While the primary goal of the grant was to realize the environmental benefits described above, I can't help but mention the impact the project had and will continue to have on the people involved.



First, property owners invited us to plant on their properties. Their reasons for doing so were numerous. Some want to cut less grass, others want to stabilize the eroding banks along their streams, and still others were interested in creating wildlife habitat or improving the aesthetics of their property. As the trees grow and the goals are achieved, these owners will reap the very real benefits of more time, improved property value, and greater enjoyment of their property. Second, over 1,000 volunteers helped plant trees under this grant including school kids, Boy Scouts, and a church youth group. They all received hands-on experience planting trees and a brief lesson about the environmental benefits of trees. Most of these volunteers gained knowledge, experience, and a new appreciation for the trees they helped plant. Some volunteers were especially engaged. In the coming years they plan to visit the sites they helped plant so they can observe the growth and transformation for themselves.

The Bureau of Resource Management is thankful to the citizens and state of Maryland personnel who made the Stream Restoration Challenge Grant possible. Moving forward, we will work to ensure the success of the many acres planted, and we will pursue new opportunities such as this as they become available. •



Farm Museum Update

By Theresa Amoss, BRM Staff

The Carroll County Farm Museum will be under construction in the winter of 2016. To address flooding and drainage issues at the property, the Carroll County Bureau of Resource Management (BRM), in partnership with the Department of Economic Development and Tourism, Carroll County Outdoor School, Chesapeake Bay Trust, and University of Maryland Extension, will implement eight stormwater management practices and a storm drain system. The practices, which include a stream buffer, two bioretention facilities, rain garden, landscape infiltration, swale, rain barrel, and dry well, will capture and treat stormwater runoff before it enters the receiving stream.

The project design was completed by Carroll Land Services, Inc. in December 2015 and partially funded by a Chesapeake Bay Trust grant. Bids for construction will be advertised in January 2016.

This coming April, Carroll County Outdoor School students will help plant and mulch the bioretention facilities and rain garden during an Earth Day event.

After construction, the practices will be used to showcase different approaches to managing stormwater runoff that can be applied to school, residential, and business properties.

To help offset the cost of this project, the BRM has recently applied for grant funding from the Chesapeake Bay Trust's Outreach and Restoration grant program and the National Fish and Wildlife Foundation's Environmental Solutions for Communities grant program. Award notices are anticipated between February and June 2016. ●

Give the Gift of Green

Compiled from EarthShare.org

... and we're not talking cash! This holiday season, consider giving gifts to friends, family and co-workers that will last the whole year: plants!

Among your many options:

- House plants with particular air-purifying qualities, like pathos, philodendron and spider plants.
- Miniature azaleas, rose bushes, hibiscus, Christmas cactus or holly.
- A set of seed packets for the vegetable or flower garden.
- A gift certificate for plants or seeds from a gardening supply catalog or shop.
- Landscape plants native to your region of the country.
- A basketful of tulip, daffodil and crocus bulbs.

Go live!

Why not consider planting a living tree for the holidays?

- Choose a healthy tree whose roots are balled and wrapped in burlap.
- Keep the tree outside until you're ready to bring it in for decoration.
- Make sure the tree remains well-watered.
- Keep the tree inside for no more than a week.
- Transplant the tree into a hole prepared before the ground froze.
- Plant the tree with plenty of organic matter; mulch and water well.

Remember: If you opt for the traditional tree instead of a live one, make sure to recycle it when the holiday is over.

- Put the tree in a corner of your backyard, where it can become habitat for squirrels, birds, and other local wildlife.
- Trim off the branches and use them for mulch under acid-loving bushes and shrubs.
- Participate in local tree recycling programs.
- Chop the tree trunk into pieces that can be converted into firewood.
- Other festive tips to save some green:
- Recycle last year's cards into this year's gift tags.
- Use serrated scissors to cut the front of the card into appealing shapes and sizes.
- Make sure this year's cards are made from recycled paper.
- Put E-mail to work and send paper-free electronic greeting cards.
- Avoid wrapping paper. Use newspaper or brown craft paper that you can decorate yourself. Sunday comics also make a colorful, recyclable wrap kids will love! ●

For more than 25 years, EarthShare has helped individuals and workplaces care for our planet by connecting them with America's most respected environmental and conservation charities. One Environment. One Simple Way to Care For It.®

