RainScapes Watershed Friendly Landscapes 2012

June 16th 9 am -noon

A self-guided tour of types of landscapes that soak up the rain

Link to Google Map of Tour: http://goo.gl/maps/Gd0z

This self-guided tour features RainScapes in Montgomery County. The tour is centered in two of our watersheds: the Anacostia and Rock Creek, but there are also projects to see in the Cabin John and Muddy Branch watersheds. The tour is intended to show the range of project types that the Watershed Restoration Section has been working on to improve our local environments – from rooftops to the streams, in natural areas and in highly developed areas, both on public and private properties.

ANACOSTIA WATERSHED

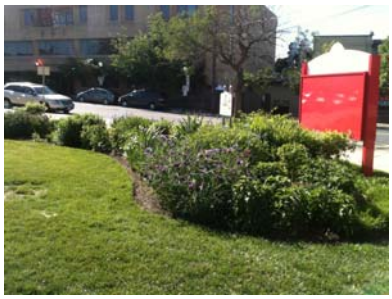
1. Sherwood High School

300 Olney-Sandy Spring Road, Sandy Spring, MD 20860 (project is around the back of the school next to the greenhouse)

This project is entering its 2nd full year of growing. Water from this property drains into the Northwest Branch of the Anacostia. The slope was converted to a conservation landscape and uses several types of grasses: Pink muhly grass, little bluestem, and purple love grass as well as drought tolerant low maintenance perennials such as moss phlox and bluestar flower to slow the flow of water down the slope. Water that runs off of the pavement is directed into the new rain garden designed and installed by the Sherwood high school students under the direction of Horticulture teacher Jill Coutts. Stop by for more information on what students are learning and doing with high school horticulture in Montgomery County and see how a low maintenance landscape can be a beautiful RainScape that helps to clean, cool and soak in rainwater before it can enter the stormdrain system.

2. Wheaton Triangle – Conservation Garden at Reedie Drive

2424 Reedie Drive, Wheaton, MD 20902



This demonstration garden, located on Reedie Drive between Veirs Mill Road and Georgia Avenue, is a 500 sf conservation landscape, planted in the spring of 2010. The garden was installed with volunteers from GreenWheaton, Friends of Sligo Creek and DEP RainScapes staff. Five hundred square feet of turf was removed, 2

inches of compost was spread on top and worked in, plants were installed and a 3 inch mulch layer was added to conserve moisture. The garden is maintained by the County with support from GreenWheaton. The intent was to reduce the amount of runoff from the hard packed grassy area above the garden while introducing a beautiful landscape into downtown Wheaton. You will see spiderwort (purple) and Purple Coneflower (pink) as well as a variety of grassy plants and a pink flowering plant – swamp milkweed – which is a host plant for the Monarch butterfly. Volunteers from GreenWheaton and Friends of Sligo Creek will be available to answer questions about the project.

3. Arcola Avenue LID Retrofits (between Kemp Mill Road and University Boulevard)

Looking for new ways to rapidly retrofit developed watersheds with stormwater facilities, the Department of Environmental Protection (MC-DEP), partnered with the Department of Transportation (MC-DOT) to build thirteen roadside bioretention swales, small stormwater facilities, to treat nearly three acres of runoff from Arcola Avenue. The approach maximized the production of rain gardens and bioretention swales by streamlining permitting and using a design-build approach to build a Green Street from University Boulevard to Kemp Mill Shopping Center. Most facilities featured 1-2 feet of gravel recharge zone underlying 2-3 feet of bioretention media (a mixture of sand, compost and mulch used to filter/trap urban road pollutants). This media was planted with an attractive array of salt and drought-tolerant native plants, proving that you can meet environmental engineering goals as well as beautifying the right-of-way using these systems! Plants to see include Virginia Sweetspire, Black-eyed Susans and Inkberry.

The final product provided the County with another tool in our efforts to improve water quality and reduce stormwater runoff in highly developed watersheds by treating runoff before it reaches the stormdrain system. A volunteer will be available to answer questions.

4. Forest Estates LID Retrofits

Off of Dennis Avenue; Neighborhood walk from 10am to noon, meet at the intersection of Inwood and Woodman Ave, near bridge.

As part of the new Green Streets initiative for Montgomery County, MCDEP installed 24 Low Impact Development (LID) facilities in the Forest Estates neighborhood right of way areas. Green Streets use roadway LID designs that reduce and filter rainfall and pollutants that wash off surface areas (stormwater runoff) using plants that can filter and reduce the volume of stormwater, much like RainScapes, but are more intensively engineered. Examples of the Green Streets features that were installed in Forest Estates include rain gardens, bioretention gardens, and bioswales. The facilities were completed in April and planted in May 2012. Generally, each facility was excavated down 4 or 5 feet, with 1 to 2 feet of gravel on the bottom, 2 feet of bioretention mix (mixture of planting soil, sand, and mulch), and a 3 inch mulch layer on top. Bioretention gardens were installed

with a perforated underdrain in the gravel layer that connects to the storm drain system. The final shape of the gardens that is easily seen is bowl-like. They can hold around 6 inches of water for a short time before infiltrating within 24-48 hours (ideally within 12 hours). Landscaping features include ornamental grasses, perennials, and shrubs that are relatively low-growing, low maintenance, and aesthetically attractive for all seasons. MCDEP will maintain these right of way features at least once a year. Deer resistant, salt tolerant plants such as Switchgrass, Black-eyed susan and asters are being planted between the sidewalks and the curbs to manage the stormwater and to reduce neighborhood drainage problems. Over the next year, the plantings will grow in and provide beauty and visual interest to this neighborhood. For more information, see project webpage:
http://www.montgomerycountymd.gov/dectmpl.asp?url=/content/dep/water/forestestates.asp
For a map and table of the 24 LID facilities, see page 3-4 of this PDF:
http://www.montgomerycountymd.gov/content/dep/downloads/ForestEstatesExhibitUpdate_111711.pdf

5. Pine Crest Elementary School

201 Woodmoor Drive, Silver Spring, MD 20901

The rain garden at Pine Crest Elementary School is located by the flagpole circle in front of the school. It was built in 2010 by the school green club and the local Junior Girl Scout troops 1549 and 2265 with their parents and volunteers from the Woodmoor Green Team under the direction of DEP RainScapes staff. It is 100 square feet and catches water from 500 square feet of sidewalk and is a RainScapes for Schools project. The simple planting plan (7 kinds of plants) shows that you can effectively manage water, provide beauty and habitat in a relatively small space. The garden is maintained in partnership with the school by the local Garden Club and the Brownie Troop that meets at the school. You will also be able to receive information at this site for some residential RainScapes that have been installed as part of a partnership approach between DEP RainScapes and the Neighbors of Northwest Branch in a nearby neighborhood from volunteers who will be at this garden.

6. Montgomery Blair High School

51 University Boulevard East, Silver Spring, MD 20901

This new conservation landscape was just installed during April and May of 2012. The picture shows it partially installed. Come and see the finished garden! The project converted 1600 square feet of turf into a garden that will slow and filter water before it enters the stormdrain, located at the center of the garden. The garden was designed by the Blair HS Horticultural Club with assistance from a local landscape architect and was installed by the students during April of 2012 as a RainScapes for Schools Project. Approximately 35 percent of the herbaceous plants in the garden were grown by high school students in the RainScapes for Schools Growing program. The garden is located to the right of the front entrance facing University Drive. You will see Chelone (host plant for our state butterfly), Serviceberry and Coreopsis along with many other interesting native plants.

7. Eastern Middle School

300 University Blvd, Silver Spring, MD 20901

Eastern Middle School has several RainScape gardens in front of the school. Friends of Sligo Creek and Neighbors of Northwest Branch initiated these gardens at the school in 2004 to address the extreme flooding happening in front of the school. In addition to over 3000 sf of rain gardens at the school, there is a conservation landscape memorial garden. The gardens have been under renovation for the past two years, under the direction of DEP RainScapes staff and with assistance from the master gardeners, Snitzer Landscaping and Backyard Bounty to augment the continuing volunteer efforts by watershed group members. The results show this year in a garden composition that supports teaching and learning activities. You will see many examples of shrubs for rain gardens, as well as evergreen ground covers such as *Scenecio* and our state flower, the Black eyed Susan in these gardens.

Also of interest in this watershed:
Brookside Gardens

1800 Glenallan Avenue, Wheaton, MD 20902

The Rain Garden at Brookside Gardens was built at the gardens under the terms of a grant from the National Fish and Wildlife Federation to the Low Impact Development Center, with support from the RainScapes program. Construction was donated by J&G Landscapes in 2007. The garden catches and process runoff from the slopes above the garden and solved a serious runoff problem at the garden. Adjacent to the gardens is permeable interlocking concrete pavement which also helps to slow and filter water rather than allow it to runoff into the adjacent creek.

ROCK CREEK WATERSHED

8. Aspen Hill Library

4407 Aspen Hill Road, Rockville, MD 20853

The bioretention area in the front of Aspen Hill Library and the curb extension along Aspen Hill Road were completed in May of 2012. This looks like a depression that is fully planted. These two facilities are part of MCDEP's on-going effort to retrofit older public buildings with new stormwater management controls. The bioretention facility provides water quality treatment for 0.50 acres of impervious surface including the parking lot, sidewalks and a portion of the rooftop. Stormwater is conveyed to the bioretention, primarily, via a trench drain that extends across the parking lot. The curb extension along Aspen Hill Road treats 0.11 acres of impervious surface that includes the lower portion of the library

parking lot and a short section of Aspen Hill Road. Stormwater runoff from the parking lot and roadway flows along the curb and gutter into the curb extension. The two stone check dams across the curb extension act to slow the water allowing time for water to soak into the planting media. Both the bioretention and curb extension have underdrains that convey filtered water to the stormdrain pipe that runs under Aspen Hill Road. These two stormwater facilities significantly reduce both the volume and rate of stormwater runoff entering the stormdrain system from the library property. A large area of black-eyed susan is planted near the front walk and a variety of plants including switch grass, Summersweet, Virginia sweetspire and Serviceberry will provide year round visual interest while treating the stormwater. This project will help to reduce runoff impact to the stream restoration project at Turkey Branch that can be seen from the Matt Henson Trail.

9. **Rockville High School**

2100 Baltimore Road, Rockville MD 20851

This project has been helping to solve a major icing problem caused by winter drainage from the baseball field and slope next to the parking lot. Working with DEP's RainScapes for Schools program, the RHS horticulture students designed and installed a 1000 sf conservation landscape at the school in the spring of 2010. The garden has reduced runoff from the ballfield and significantly reduced both winter icing and summer drainage. The sign adjacent to the garden includes the full planting plan; plants to see include butterfly weed, bayberry and three forms of switchgrass. A volunteer will be present to answer questions about this project, which was done in partnership with the City of Rockville Environmental Services.

10. **Strathmore Place HOA**

Jolly Way off of Strathmore near the intersection of Strathmore Ave and 355

This project features both a rain garden that soaks in the stormwater from 5 rooftops (pictured) and also has two linear bioswales which filter stormwater before it enters the stormdrain system. Black-eyed Susan, iris and other wildflowers compliment the shrubs which anchor the gardens providing the community with four seasons of interest and a reduction in the amount of water that goes onto pavement and into the storm drain system.

11. **Garrett Park (9-11am timeframe) Neighborhood walking tour – start at the Garrett Park Cooperative Nursery School:** 4812 Oxford St, Garrett Park, MD

Start at the Nursery School in Garrett Park. There, you will be able to see a newly installed rain garden built as part of the

RainScapes Training Series for Landscape Professionals during the week of June 11, 2012. At this stop, you can pick up a walking tour map of the neighborhood featuring several residential examples of RainScapes that have been installed through the RainScapes Neighborhoods program and through the RainScapes Rewards Rebate program. Rain Gardens, Conservation Landscapes, and Permeable Driveways are all able to be seen on this walk. Staff from RainScapes will be present at the Reinhardt rain garden from 10:30-11am to answer questions. After you walk the neighborhood, you may find the Kensington Library project and the Ken-Gar Community Center project worth a visit.

12. Kensington Park Library Bioretention

4201 Knowles Avenue, Kensington, MD 20895

Five stormwater management facilities were recently completed (May of 2012) at Kensington Park Library including: 1) raingarden located in the open area just north of the upper parking lot - furthest from the library, 2) raingarden in the small parking lot island located to the left of driveway entrance from Knowles Ave. 3) gravel infiltration trench along northern edge of parking lot located to the left of driveway entrance from Knowles Ave. 4) bioswale along the sidewalk that extends from the library to the parking lot and 5)bioretention located just off the left side of driveway entrance from Knowles Ave. Except for the gravel trench drain all of these facilities contain multiple layers including, from the bottom up; 1) 15" of gravel, 2) 6" of sand, 3) 24" of planting soil and 4) 3" of mulch. The gravel trench contains 1ft of gravel and is intended to temporarily store stormwater runoff from the parking lot allowing time for it to soak into underlying soils. The bioswale and raingardens are designed to infiltrate most of the stormwater that flows into them while some water is retained in the planting soil and taken up by the plants. The bioretention, because of its location close to a neighboring resident and poor infiltration rate in this area, is designed with an underdrain that conveys filtered water to the existing stormdrain system along Knowles Ave. Like the raingardens, some water is retained in the planting soil within the bioretention and is taken up by the plants. Collectively, these stormwater management facilities treat 0.86 acres of impervious surface including the driveway entrance, parking lots and sidewalks. The planting plans are simple in composition but will provide much summer color and fall beauty as they mature.

13. KenGar Community Center

4111 Plyers Mill Road Kensington MD 20895

The project at the Ken-Gar Community center has both a rain garden and conservation landscape aspect. The project was installed as part of the RainScapes Training Series for landscape professionals. The rain garden filters water from the parking lot and features a Sweetbay magnolia and a mix of grasses, shrubs and perennials. The conservation landscape replaced invasive plants and provides habitat for butterflies and birds as well as improving the appearance of the

building. Blazing star, Black-eyed Susan, Liatrus and blueberries are three of the types of plants planted in the conservation landscape.

Cabin John Watershed

14. Geneva Day School

11931 Seven Locks Road, Potomac, MD 20854
Lat: 39.04N, Long: 77.22W

This conservation landscape was installed at conservation landscape class co-hosted by the RainScapes and Outreach programs of DEP and the Interstate Commission on the Potomac River Basin (ICPRB). A group of 17 area residents spent two days learning about and constructing, this conservation landscape. This garden intercepts and soaks in rainwater from a large parking lot before it can enter a storm drain at the bottom of the property. To help slow down the water, before it enters the garden, there is a 30 foot long, 1 foot deep level spreader. A level spreader is a linear pit of stone which helps slow the water down and then spread it throughout the whole garden. This prevents the water from entering at one concentrated point which could cause erosion. This garden is good example of an alternative to a rain garden when a rain garden won't fit, or, is too large or expensive to build. In addition to stormwater control it will also be used as educational tool for Geneva Day School students teaching them the importance of stormwater control and habitat benefits from native plants.

15. St. James Episcopal Church

11815 Seven Locks Road, Potomac, Maryland 20854

This site is a great example of how to handle stormwater in a difficult, problem riddled location. The project was installed to help prevent winter icing of the churches parking lot and sidewalks and to soak in water close to the source of runoff. A rain garden, conservation landscape, and dry well were installed to help solve their stormwater problems. The conservation landscape is designed to intercept some of the run-off before it enters the rain garden as well as provide a seating area for church goers to enjoy nature. The rain garden helps slow down and soak in any water that makes it past the conservation landscape. The Rain Garden is a good example of the minimum distance that the overflow can be in relation to where the road/walkway is. The dry well is an example of a RainScape of last resort. The area of the drywell is too small for any of the other conventional RainScapes which is why the drywell was installed. All 3 of these RainScapes capture stormwater from 7,750 square feet of impervious surface and soak in all the water up to the first inch an a half of rain. You will see butterfly weed, blueberries, Marsh Mallows, and a variety of grasses and shrubs in this multiple benefit project.

Also of interest in Cabin John:
Greenwich Neighborhood Park

8400 Old Georgetown Rd., Bethesda, MD 20817
This is a partnership project with RainScapes, Montgomery County Parks and Friends of Cabin John. The rain garden retrofit is located at the back of the park and information about the project is mounted on a sign by the paved path.

Muddy Branch Watershed

16. Izaak Walton League of America

707 Conservation Ln # 210, Gaithersburg, MD 20878

This 200 square foot rain garden (left picture), constructed in April 2011, captures and treats rain from approximately 1,500 square feet of roof from the Izaak Walton League's national headquarters building in Gaithersburg. Located to the right of the building entrance, this rain garden serves as an excellent demonstration site. Founded in 1922, the Izaak Walton League of America (*www.iwla.org*) protects America's outdoors through education, community-based conservation, and promoting outdoor recreation. This garden was made possible with financial and volunteer support from the City of Gaithersburg, Maryland Division of the Izaak Walton League, Doug Beavers, local citizens, and Izaak Walton League national headquarters staff.

Also on the property is a rain barrel- conservation landscape demonstration partnership project with DEP and IWLA and the National Capitol Watershed Stewards Academy. You will see native grasses, serviceberry and other plants that are slowing the water and filtering the roof runoff from the picnic shelter before it flows into the pond. This project has two planting beds and one rain barrel.