CNY Stormwater Coalition

Gardens and Gutters

A Central New Yorker's Guide to Managing Stormwater Runoff

Volume 7 Number 1 **Spring 2019**

Spring into Action for Water Quality

Inside this issue:

The spring season is the favorite season for many people. It's the time when the earth comes back to life. Flowers and trees begin to bloom and the green world returns following a long, grey Central New York winter.

The power of spring and its regenerative effects are evidenced by the fact that most every culture marks spring with a celebration of renewal and life.

The spring is an important season for many hobbies, including of course, gardening. For the gardener, the spring is one of the most pleasant seasons in the garden. It's the time to carefully nestle tender new seedlings in the warming soil and when the bulbs that were carefully planted last fall finally begin to grow and blossom. Spring is undeniably one of the most beautiful and appreciated seasons for the gardener.

The spring is also a favorite time for home improvement projects. Whether it is a small project like installing new downspouts and rain barrels, or larger projects like building a new shed or deck, the spring is one of the best times to work at improving the value and livability of the home.

For the outdoor sports enthusiast, there's nothing like the coming of the spring season. Whether you like to fish, boat, hike, or look ahead to the first swim of the season, springtime brings open waters and new opportunities to get outside and explore!

Spring also means rain, and while we appreciate the benefits of spring showers in the garden, it's important to remember that stormwater runoff from our homes and gardens can quickly become concentrated and contaminated resulting in negative impacts on some of our other favorite springtime activities.

Bare soil and uncovered stockpiles of mulch and sand can wash into nearby streams and lakes causing significant adverse impacts on water quality and aquatic habitat. Herbicides, pesticides and fertilizers can do the same. Increasing impervious areas by adding new buildings and paved surfaces reduces the amount of land area for water to soak into the ground.

Fortunately, with a little bit of thoughtful consideration during the planning stages, our natural and built environments can be protected and improved simultaneously. This edition of Gardens & Gutters outlines some simple actions that you can use today and in the future. So put down that rake, pull up a lawn chair, and take a few minutes to relax and consider how you can protect our precious water resources this spring and all year long!

Dicentra spectabilis
Bleeding Heart

Photo curtesy of
The Plantsman Nursery
Ithaca, New York

A Guide to Making Residential Property More Stormwater Friendly

Why your neighbor's grass IS greener

Maybe your neighbor already knows that mowing high means a healthier, greener lawn. The ideal height for grass is three inches. That's because taller grass has deeper, healthier roots. Once you've got tall grass, don't make the common mistake of mowing it too short. Cut off just 1/3 of the blade each time you mow, and leave those grass clippings on the lawn. They're ideal fertilizer. Grass clippings are packed with essential nutrients, plus they provide organic matter, which reduces soil compaction.

It's true! You can have a healthier lawn with less work!

One of the greatest threats to water quality comes from increased land development. Increased development leads to less rainwater soaking into the ground where it is naturally filtered before returning to our streams and rivers. Instead, more water runs off our properties and travels along our impervious corridors of driveways and streets, picking up pollutants along the way that eventually get deposited into our streams and lakes.

So, what can you do? Every parcel of land impacts water quality. You can decrease the impact that your property has on water quality by reducing the amount of pollutants and stormwater generated from your lot.

This guide presents a step-by-step approach for analyzing your property to find out whether it makes sense to install a rain garden or other residential stewardship practice. The goal is to reduce the volume of stormwater that runs off of your property along with the most common residential stormwater pollutants it carries: phosphorus, sediment, and pathogens.

A good first step is to walk around your lot and assess the site conditions. A simple and fast assessment will help you determine which stewardship practices are best for your property.

STEP 1. MAP YOUR LOT

Begin by obtaining a recent aerial photo of your property. You can do this by using Google Earth, or check to see if your county has mapping and GIS available on the web.

You can obtain roof dimensions and property boundaries directly from your property deed. Next, draw the boundary dimensions of your property on a piece of graph paper. Next, sketch in the roof, any decks, sheds or pools, the driveway and sidewalks, major trees, and any landscaping beds. The rest is usually turf.

You don't need to be perfect, but try to draw it to scale, using five or ten feet per square on the graph paper depending on the size of your lot. Next, pace off or measure the approximate dimensions of all your hard surfaces and landscaping areas. Determine the total hard surface area on your property by entering the dimensions into a table following the example below.

Basic Data on Lot Cover for My Home			
LOT COVERAGE	AREA: SQ. FEET	% OF LOT	SKETCH OF PROPERTY
HARD SURFACES		28%	
Roof-tops	3,360		
Driveway/Sidewalk	2,790		
PERVIOUS COVER		72%	
Trees/Landscaping	5,500		
Lawn	10,130		
TOTAL	21,780		
NOTE: 43,560 square feet = one acre.			

This guide is adopted from the *Homeowner Guide For a More Bay-Friendly Property* which was written and developed in 2013 by the Chesapeake Stormwater Network in association with the Chesapeake River Wise Communities Program and numerous other collaborators. The full guide contains extensive information on designing stormwater management practices and can be downloaded as a PDF by clicking HERE.

A Guide to Making Residential Property More Stormwater Friendly (continued)

STEP 2. FIGURE OUT YOUR NATURAL PLUMBING

It's pretty simple, water flows downhill. Most lots are graded to move rainwater away from the home and down to the street, or in some cases, the back yard. Your job is to define the flow path of runoff in your lot.

Most lots have multiple flow paths. Start by finding each of your downspouts and then looking down slope to see where the water goes. Pay special attention to see if the flow path extends to your driveway and then to your street. These areas are usually great candidates for stewardship practices that divert and soak up runoff and remove pollutants.

Some downspouts already flow over lawn, landscaping or trees and infiltrate into the ground. These downspouts are good because the runoff is disconnected and never reaches the street or stream. In other cases, the flow path from the downspout runs over a few feet of grass before reaching the street or driveway. These are often excellent locations for stewardship practices such as rain gardens.

You may find that there are downspouts that are connected directly to the street via an underground pipe. With a bit of ingenuity, the underground pipe can be partially dug out and replaced with a rain garden.

STEP 3. FIGURE OUT YOUR OTHER PLUMBING

Underground utilities are definitely one of the great inventions of the 20th century, but they can complicate the design of your residential stewardship practices. If you are a homeowner doing an outdoor project, having underground utilities marked before you start digging is essential for protecting yourself and others from injury, and for preventing damage to underground utilities. Contact ***Dig Safely. New York*** at least 2 working days before you plan to start your project to request that your underground utilities be marked. Failure to mark your underground utilities in advance of digging can be costly and dangerous!

STEP 4. ASSESS SOIL QUALITY

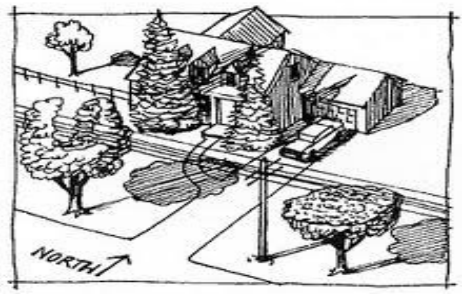
Healthy soils are the foundation for any vigorous lawn, conservation landscape, or rain garden. It is a good idea to have your soil tested before starting any soil dependent project.

For information on soil tests and interpreting soil test results, visit the Cornell Nutrient Analysis Laboratory website. CNAL provides a wide-range of analysis for researchers, educators, farmers and home gardeners. You can also download a copy of ***Cornell Soil Health Assessment Training Manual, 2nd Edition (2009)***

STEP 5. CHECK YOUR SOLAR EXPOSURE

Go back to the aerial photo of your yard and check to see how much tree canopy exists over your yard. If you have less than 25% tree canopy, you may want to consider planting more trees as they also add to the market value of your home and can help reduce your heating and cooling costs. The U.S.D.A Forest Service has a handy, downloadable guide to help you identify what types of tree species you may want to plant and where they should be located, called Part 3 Urban Tree Planting Guide.

The next task is to determine the solar exposure of your property to see if the plants will receive full sun or be partially shaded. Your solar exposure is determined by three factors: the orientation of your property in relation to the east-west path of the sun;



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What Plants Should I Choose?

Native plants are beautiful and functional. Plants that are native to the region evolved here. They are well suited for local vagaries of Mother Nature.

Native plants often have very specific cultural requirements and success in growing them often depends on reproducing the native habitat. Many references can provide more information on the type of soil, etc. that would be best for a given species.

The Finger Lakes Native Plant Society developed the Native Plants Suitable for Wildflower Gardens & Meadows or Traditional Gardens in the NY Finger Lakes. This Guide provides information to help ensure that you select the correct plant for your site.

Cardinal Flower

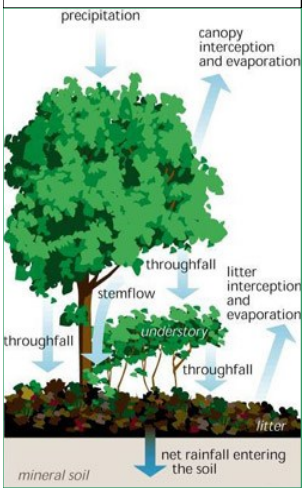
A Guide to Making Residential Property More Stormwater Friendly (continued)

The Role of Trees in Stormwater Management

Trees help reduce stormwater runoff and improve water quality by capturing large amounts of rain through their root systems and canopies. A mature street tree can absorb over 1,000 gallons of water a year.

Trees help reduce soil erosion. Soil can be lost to strong winds and runoff, but tree roots bind to the soil and prevent soil loss. Tree canopies intercept and reduce the velocity of raindrops that do hit the soil.

Trees help mitigate flooding. Trees evapotranspirate large amounts of water from the soil. Mineral soils below trees absorb and retain water which is released over time.



shading by the existing tree canopy in your yard (and often your neighbors); and the shading effect of your home.

North or west-facing areas of your yard often will be shadier. To more accurately depict the amount of shade your yard receives, you should map your shade. To learn how to map your shade, visit the Garden Continuum's website for easy-to-follow instructions.

STEP 6. PULL IT ALL TOGETHER IN A PLAN

Now you have all the basic data you need to make your property more stormwater friendly and to choose the stewardship practices that best meet your environmental objectives, and your lawn and landscaping preferences.

Image of a typical suburban lot with planned GI practices mapped

The types of practices that you select will be based entirely on site characteristics and personal preference. To ensure that your green infrastructure functions as anticipated, you will probably need to do some additional research to refine plant choices, building and paving materials, soil amendments, and sizing criteria for the practices you select. It's important to remember that all stormwater green infrastructure requires some degree of maintenance and care but, the amount is often less than what is needed for traditional landscaping and construction.

The six most frequently employed residential stormwater practices are rain gardens, riparian buffers, tree plantings, native meadows, pervious pavers, and rain barrels. The following food for thought will help get you started in the selection process.

Rain Garden: A depressed garden that uses mulch, soil, and deep-rooted native plants to capture, absorb, and infiltrate stormwater.

Considerations: Construct down slope of runoff to be captured; plant in spring or fall; locate at least 10 feet from building foundations.

Benefits: Manages stormwater and filters pollutants; wildlife habitat; little maintenance; adds beauty.	**Negatives:** Plants can take 2 – 3 years to establish; more maintenance required in first few years.
Maintenance: Low once established; weeding and watering in first two years; some thinning and replanting in later years.	**Aesthetic appeal:** Ranges from medium to high; can be customized based on plant selections.

Riparian Buffer: Planting of native trees and shrubs along streams and wetlands to restore the streamside area to more forest-like conditions. Riparian buffers filter runoff and have numerous water quality benefits.

Considerations: Plant in spring or fall; locate at least 10 feet from building foundations.

Benefits: Increases infiltration and groundwater recharge; improves water quality; controls erosion and sedimentation; provides wildlife habitat.	**Negatives:** Not as effective on steep slopes; more difficult to implement than some other practices.
Maintenance: Low once native plants are established; weeding and watering in first two years; some plant thinning in later years; regularly remove debris and excessive sediment accumulations.	**Aesthetic Appeal:** Ranges from medium to high.

A Guide to Making Residential Property More Stormwater Friendly (continued)

Tree Planting: Planting native trees and shrubs to restore a portion of your property to forested/woody vegetated conditions.

Considerations: Plant in spring; monitor and control invasive species; select trees based on assessment of growing patterns relative to space considerations and limitations.

Benefits: Increases stormwater infiltration and evapotranspiration; filters pollutants; requires little maintenance; provides wildlife habitat; large canopy of trees maximizes benefits.	**Negatives:** Takes years to provide maximum benefit; regular maintenance is required where invasive species exist; must guard against deer browsing and vole damage.
Maintenance: Maintain tree tubes, stakes or cages; mow between trees at least twice during first 4 - 5 years; prune to ensure and maintain good branching habits.	**Aesthetic appeal:** High aesthetic appeal as trees add interest, structure, color and wildlife to property.

Native Meadow: An area planted with native grasses and wildflowers and maintained as a natural area. “NO-MOW” areas can also develop into meadow areas.

Considerations: Plant in spring; monitor and control invasive species.

Benefits: Increases stormwater infiltration and evapotranspiration; filters pollutants; requires little maintenance; provides wildlife habitat.	**Negatives:** Site preparation (including turf grass removal) is required before planting; meadows may conflict with local weed ordinances.
Maintenance: Mow two times a year for the first two years, mow annually after that; control invasive plant species.	**Aesthetic appeal:** High aesthetic appeal as tall grasses and wildflowers add interest, structure, color and wildlife to property.

Pervious Pavers: Porous or impervious building materials such as stone, concrete or brick, laid with spaces in between to allow for pervious areas (gravel, sand, vegetation) in driveways, parking areas or walkways.

Considerations: Need to install permeable sub-base; locate a minimum 10” from building foundations.

Benefits: Increases infiltration and groundwater recharge; reduces volume and rate of runoff.	**Negatives:** More labor intensive to install than other practices; nonconventional option to pavement.
Maintenance: Moderate to high maintenance; grass between pavers may have to be mowed; inspect for signs of clogging; pressure wash and replace pea stone as needed.	**Aesthetic appeal:** Ranges from low to medium; artistic designs with layout can increase aesthetic appeal.

Rain Barrel: A barrel that captures rainwater from roof and stores it for later use, such as watering flowers and shrubs.

Considerations: Place on level, raised surface; a full rain barrel weighs 400 pounds.

Benefits: Conserves water; captures and reuses stormwater.	**Negatives:** Minimal volume captures; poor construction or maintenance can increase habitat for mosquito breeding.
Maintenance: Clean screen/filter regularly; clean gutters twice annually; monitor during severe storms to avoid overflow; empty and clean before winter storage.	**Aesthetic appeal:** Ranges from low to medium depending on type of barrel used.

Invasive Species Alert!

Invasive species are non-native species that can cause harm to the environment, economy or human health. They contribute to habitat degradation, loss of native fish, wildlife and tree species, loss of recreational opportunities and income, and can damage crops and cause disease in humans and livestock. When native grasses, shrubs and trees that stabilize stream banks are out-competed by, or die as a function of invasive species infestation, shoreline stabilization, flood protection and water filtering benefits can be lost. All of these examples have negative implications for stormwater control measures that reduce the volume and pollutant concentration of stormwater.

Before you conduct any tree planting, learn which invasive species are anticipated and which ones are already in your area. The Emerald Ash Borer, for instance, has been confirmed in over 30 NYS counties including Onondaga Cayuga, Madison and Oswego. The Hemlock Wooly Adelgid is in Cayuga, Onondaga and Cortland Counties and is on the move.

For more information visit the NYSIS clearinghouse website.

CNY Stormwater Coalition

The CNY Stormwater Coalition was formalized in 2011 in order to establish a regional approach for stormwater management and water resource protection. The Coalition is made up of 30 local governments and the NYS Fairgrounds. Each member operates a Municipal Separate Storm Sewer Systems (MS4). Through the Coalition, members are working together to meet regulatory requirements while improving water quality.

CNY STORMWATER COALITION MEMBERS

Camillus Town	Baldwinsville Village
Cicero Town	Camillus Village
Clay Town	Central Square Village
DeWitt Town	East Syracuse Village
Geddes Town	Fayetteville Village
Hastings Town	Liverpool Village
LaFayette Town	Manlius Village
Lysander Town	Marcellus Village
Manlius Town	Minoa Village
Marcellus Town	North Syracuse Village
Onondaga Town	Phoenix Village
Pompey Town	Solvay Village
Salina Town	Syracuse City
Sullivan Town	
Van Buren Town	Onondaga County

2019 CNY Stormwater Coalition Meeting Schedule

The CNY Stormwater Coalition meets quarterly throughout the year. Meetings are normally held on Tuesday afternoons from 1:00 to 3:00 at various municipal buildings around the region. All meetings are open to the public. Please verify meeting dates and locations by checking the CNY Stormwater Coalition's Website.

The CNY Stormwater Coalition is staffed and coordinated by the Central New York Regional Planning & Development Board. For more information, visit the CNY Stormwater Website at www.cnyrpdb.org/stormwater.

Central New York Regional Planning & Development Board

Presentation: Starting Seeds Indoors Under Lights

Wednesday, April 24, 2019, 7:00 PM - 8:00 PM

The Master Gardeners of Onondaga County will present "*Starting Seeds Indoors Under Lights*" on Wednesday, April 24th from 7:00pm to 8:00pm at the Community Library of DeWitt and Jamesville.

This presentation is free and open to the public. Please contact the Community Library of DeWitt and Jamesville at 315-446-3578 to register.

FREE to Attend

Location: **Community Library of DeWitt and Jamesville**
5110 Jamesville Rd
Jamesville,, NY 13078

Madison County Earth Day event, activities April 27

Madison County will celebrate Earth Day with an event from 10 a.m. to 1 p.m. on Saturday, April 27 at the Buyea Road Residential Station at 6666 Buyea Road in Canastota.

At the "Rethink Waste in Madison County" event visitors can tour the recycling operation, pick-up new recycling bins, learn about program changes and new on-line resources, and bring home a new recycling guide, magnet and even a free tree seedling (limited to the first 100 visitors). There will also be a coloring contest for kids up to 12 years old.

The Dept. of Solid Waste and Sheriff's Department will host a safe pill collection during the event. Residents dropping off prescription drugs should keep the medications in their original containers. Liquid medications and sharps will not be accepted.

For information call 315-361-8408.

ONONDAGA COUNTY EARTH DAY LITTER CLEAN-UP 2019

Join OCRRA's volunteer litter cleanup crew and help beautify our community on **Friday, April 26 or Saturday, April 27, 2019**.

Last year, more than 7,300 Onondaga County residents collected over 100,000 pounds of litter during the annual Earth Day Litter Cleanup.

Register by **Friday, April 19** to get in on the action! Help do your part to make your community shine.

This event is OCRRA's largest environmental effort and it has been recognized nationally by Keep America Beautiful, a nonprofit organization devoted to engaging individuals to take greater responsibility for improving their community's environment.

Clean water starts with you!