



**FRESH
COAST**
GUARDIANS
RESOURCE CENTER



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Seven Steps to **Managing Water** *on Your Property*



melindamyers.com

IT MATTERS

What goes down the storm sewer ends up in lakes, water ways and eventually water needed for drinking and use in our homes.

FRESH COAST GUARDIANS' GOAL

We have an aggressive goal and we need your help! It's to create, by the year 2035, enough green infrastructure (techniques for capturing, absorbing and storing rain and melting snow) in our region to capture 740 million gallons of water every time it rains. Why? To reduce water pollution and improve our rivers and Lake Michigan. Yes, 740 million gallons is huge, but consider this:

*One Inch of Rain on MMSD's Service Area =
7.1 Billion Gallons of Water*

PROTECT YOUR HOME DURING HEAVY RAINS

- Repair foundation cracks and window leaks
- A functional sump pump
- Proper grading away from your house
- Clean gutters
- Lateral inspection
- And ways to manage your landscape

HEALTHY LANDSCAPES HELP MANAGE WATER WHERE IT FALLS

- Boost your landscape's health and ability to use water where it falls
- It's really just a change of habits
- Start with one or two, as you master these continue adding more water management strategies into your landscape maintenance regime

#1 START FROM THE GROUND UP

Convert Your Soil into a Water Retaining Sponge

- Soil is the foundation for a healthy garden and landscape
- Healthy soil can also help absorb water so it stays on your yard supporting the plants instead of running into and overwhelming the storm sewer
- Most of us start with disturbed soils
 - Native topsoil is often removed during construction
 - Subsoil of clay, sand or gravel is spread over the yard and topped with an inch or two of purchased topsoil. This does not promote health and longevity of landscape plants
- A soil test is always a good place to start
 - Test soils in new gardens, struggling gardens and every 4-5 years to help evaluate effectiveness of your maintenance practices
 - Take samples anytime the soil is not frozen and hasn't been recently fertilized
 - Push away mulch and take thin slices 4-6" from the corners and several in the center of the garden or lawn area you are sampling
 - Combine in clean bucket and send 1 Cup to your University Extension or a state certified soil testing lab

MMSD

The Milwaukee Metropolitan Sewerage District's (MMSD) mission is to protect public health and the environment.

MMSD is a regional government agency that provides water reclamation and flood management services for over one million people in 29 communities in the Greater Milwaukee Area. Visit mmsd.com to learn more about who we are and what we do.



Fresh Coast Guardians is a brand of MMSD centered around our Green Infrastructure initiatives and resources. You can help us prevent polluted storm runoff from reaching our waterways by managing water better when it rains or snows. If you want to learn how you or a business can help us protect Lake Michigan, please visit freshcoastguardians.com

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- Amend soil with compost
 - Add 2 to 4" of compost into the upper 8 to 12" of soil
 - Benefits of compost:
 - Improves drainage in heavy soils so more water can move through the soil
 - Increases water absorbing ability in fast draining soils
 - Provides essential nutrients over time
 - Suppresses diseases and insect pests common in poor soil
 - Keeps plant based kitchen scraps and garden waste out of landfills
 - Reduces rainwater and fertilizer runoff into our waterways
 - Helps keep rainwater where it falls
 - You'll water less and conserve more
- Topdress existing gardens with 1-2" of compost every other year
- Vertical mulch struggling gardens
 - Aerates the soil and pushes some of the compost into the soil where roots grow
- No till alternatives to improving the soil
 - **No-Dig Gardening**
 - **Lasagna gardening**
 - Outline area to amend
 - Cut existing weeds and / or grass short
 - Cover garden area with newspaper or cardboard to suppress weeds
 - Add 8-10" of landscape trimmings that you would normally compost
 - Spread an inch of compost or planting mix over this layer
 - Sprinkle with **Milorganite**
 - Add another 8-10" of compostable materials
 - Cover with compost, fertilizer

- Continue layering (like lasagna) until 18-24" high
- You can plant immediately or prep garden in fall when raw materials may be more available and plant the following spring
- **Hugelkultur gardening**
 - Bottom layer made of logs (no cedar, black locust or black walnut)
 - Fill spaces with smaller branches, leaves and straw (carbon-rich)
 - Cover with layer of kitchen scraps, green plant debris (nitrogen-rich)
 - Top with compost or composted manure and 6" of soil
 - You can also top this off with a lasagna garden

PROTECT THE SOIL WITH MULCH

- Look for resources on your property
 - **Leaves** (even maple and oak)
 - **Evergreen needles** (don't make the soil too acidic)
 - Wood chips and shredded bark - great for paths, trees and shrubs

JUMPING WORMS

- Invasive worms that devour organic matter and ruin soil texture and chemistry
- Spread rapidly
- Avoid the problem
 - Don't share plants
 - Ask mulch and compost supplier how they manage for Jumping Worms



About Melinda

Nationally known gardening expert, TV/ radio host, author & columnist Melinda Myers has over 40 years of horticulture experience and has written over 20 gardening books, including Can't Miss Small Space Gardening, the recently revised Midwest Gardener's Handbook, and Jackson and Perkins' Beautiful Roses Made Easy. She hosts the nationally-syndicated "Melinda's Garden Moment" program airing on radio stations throughout the U.S. Melinda also hosts the internationally distributed Great Courses "How to Grow Anything" DVD/ Instant Video series, including the latest Food Gardening for Everyone DVD set. She is a columnist and contributing editor for Birds & Blooms magazine, and writes a nationally-distributed gardening column. She appears regularly as a guest expert on national and local television and radio shows.

Visit Melinda's website,
melindamyers.com

#2 RAIN BARRELS

- Capture water from the roof to use on ornamental containers and gardens
- 1" of rain on 1,000 ft² of roof = 623 gallons of water
 - About .62 gallons / foot of roof
- Selecting rain barrels
- Features to consider:
 - Spigot low on the barrel to avoid stagnating water
 - Overflow port to move water excess away from the house and for interlocking several barrels together
 - Top covered with screen or opening just large enough for the downspout to keep out insects and debris
- Elevate the rain barrel
 - Increase water pressure so water drains more quickly
 - Easier access to spigot
- Downspout diverter
 - When rain barrel is full, it diverts water back through downspout
- Interlock several to capture more rainwater
- Installing a Rain Barrel video from Fresh Coast Guardians
 - Alternative method when
 - Disconnecting downspout from sewer system
 - ❖ Check on regulations first
 - ❖ Make sure to cap standpipe
- Locate the rain barrel
 - Level surface
 - Gravel base and cement blocks or decorative stand on pavers
 - Line up with downspout
 - Cut gutter
 - Attach flexible elbow directing water into rain barrel
 - Save removed downspout to reattach in winter
- Adjust downspout to direct water into rain barrel
- Use rain chains to direct water into rain barrel or swale or garden away from the house
- Manage mosquitoes if needed
 - Mosquito Bits[®] quickly knock down the mosquito larval population
 - Mosquito Dunks[®] provide 30 days of control
 - Both are certified organic, safe for beneficial insects
- Mask rain barrel
 - Plantings
 - Paint and it becomes garden art
- Using the water from rain barrel
 - Research found contaminants were generally low
 - Have tested
 - Otherwise, use on ornamental containers, ornamental gardens, for washing cars and lawn furniture
- Downspout Disconnection
 - Make sure to cap the standpipe
 - Check with your local municipality
 - Direct water at least 5' away from your home's foundation and the property line

**MISS A
WEBINAR?**

Melinda's Webinars are
Available On Demand!

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#3 RAIN GARDENS

- Benefits
 - Beauty
 - Supports pollinators and songbirds
 - Intercepts and captures water running off roof and lawn before it reaches the storm sewer
 - Plants and soil in garden help clean pollutants from the water before it reaches the groundwater
- Resources to help you plan and plant a rain garden
 - **Rain Garden How-to Manual**
- Location and design are critical
 - At least 6', preferably 10', and no more than 30' from house
 - Avoid trees, lateral, septic systems and wells
 - Soil should gently slope to the garden
 - Widest part of garden perpendicular to water source
- Soil preparation
 - Adding compost or other organic matter
 - So garden absorbs water and drains within 24 hours, no more than 48 hours
- Direct water to the garden
 - Downspout extension
 - Rock or plant filled swale
 - Buried flexible drain pipe with cover to keep out critters
 - Rain chain from gutter extension
 - Stones at base where water enters garden to prevent erosion
- Selecting plants
 - Those that tolerate wet and dry conditions
 - Provide desired aesthetics
 - Fit the space

For more detailed information on planning a rain garden, selecting plants and installing a rain garden, [visit our website](#) for links to webinar recordings and future events.

- **When rain barrels and rain gardens are not an option**
 - **Berm**
 - Create to elevate plant roots above areas where water collects

- In general, no more than 18 to 24" high to avoid erosion
- **Soil Calculator** if additional topsoil is needed
- **Dry River Bed**
 - Usually wider than deep (ratio of 2 to 1)
 - Line the channel with landscape fabric, pin in place
 - Cover with stones
- **French Drain**
 - Trench with drainage pipe with sock cover or gravel wrapped in landscape fabric
 - Covered with gravel or soil and planted with grass
- More resources available:
 - **Milwaukee Public Library YouTube Channel**
 - **Fresh Coast Guardians website**
 - **melindamyers.com**

#4 GROW MORE NATIVE PLANTS

- **Strategies for Adding Native Plants to Your Landscape**
- Benefits of native plants:
 - Evolved with and best support birds and beneficial insects
 - Build and protect our soil
 - Clay busters - deep roots aerate and break up heavy soils
 - Some add nitrogen - Baptisia
 - Prevent erosion
 - ❖ Slow rainwater, trap water
 - Deep roots
 - ❖ Create channels for water to travel through the soil
 - ❖ When old roots die they add organic matter to the soil
 - Need minimal or no fertilization once established
 - Once established may only need supplemental water during extended droughts
 - Divide as needed

- Selecting native plants
 - Right plant
 - Right place
 - Right purpose
 - Matches the growing conditions
 - Suited to your design
 - Mature size fits the available space
 - Bloom time, texture and color fit design
 - Consider how and how fast they spread
 - Seeds, rhizomes or both
- Start small
 - Think substitution
 - As you create new gardens, add some native plants
 - When a plant dies, replace with a native plant
- Next step - create a garden with native plants
- Going all out
 - Do your research before converting all or a portion of your yard to native plants
 - Weed control is critical before planting to reduce ongoing maintenance
 - First 3 years are critical for establishing the natural planting
 - Monitoring and managing weeds is ongoing
 - Include signs of intent so people know it is intentional

#5 PLANT TREES

- Whenever space and growing conditions allow
- **Benefits of trees:**
 - Provide shade
 - Reduce energy use
 - Clean pollutants out of the air
 - Manage stormwater and more
- How trees help manage stormwater
 - Intercept some rainfall so it evaporates back into the atmosphere
 - Slow the speed of rainfall, reducing erosion and runoff and allowing for absorption
 - Transpire water from leaves absorbed by roots

- Tree roots, mulch and groundcovers allow rainwater to enter the soil

- **Proper planting**

- **Protect trees** from mowers, weed whips and competition from grass
 - 2-3" layer of mulch over the soil surface
 - Pull mulch away from the tree trunk
 - No mulch piled against tree trunk
 - Can lead to rot, girdling roots and rodent damage
- **Planting under trees**

#6 STORMWATER FRIENDLY LAWN

- **Mowing tips**

- Mow high - taller grass is:
 - More drought tolerant
 - More resistance to insects and disease
 - And better able to outcompete weeds
- Mow often - removing no more than 1/3 the total height
 - Less stressful on the lawn
 - Smaller clippings decompose quickly
 - Double or triple cut long clippings if needed
- **Sharp mower blades**
 - Allow you to mow more quickly
 - You'll use up to 22% less fuel
 - Lawn will need up to 30% less water
- Leave clippings on the lawn
 - One season of clippings = one fertilizer application
 - Short clippings break down quickly
 - Add water, nutrients and organic matter to soil

- Watering the lawn
 - Consider letting the lawn go dormant during stressful times
 - Yes, you'll have more weeds, but use less water
 - Limit foot traffic and equipment on dormant lawns
 - Don't use chemicals and weedkillers on dormant lawn
 - Cool season lawns
 - ❖ Apply 1/4" of water every 3 weeks during extended drought to keep crowns alive and lawn dormant
 - Avoid brown and soak watering
 - Taking lawn in and out of dormancy is more harmful to the grass
 - If you water:
 - Water thoroughly when footprints remain in the lawn
 - Apply 1/2" on fast draining and 1" on heavy soils at a time
- Fertilize
 - Based on quality goals and use
 - Higher quality and more the lawn is used, the more fertilizer needed
 - One fall application, along with grass clippings is sufficient for most established lawns
 - Holiday schedule for higher quality and high use lawns
 - Cool season grasses
 - ❖ Memorial Day
 - ❖ Labor Day
 - ❖ Halloween - Thanksgiving before ground freezes
 - Warm season grasses
 - ❖ Around Easter after the grass starts growing
 - ❖ Memorial Day
 - ❖ Labor Day
 - ❖ Last fall application is at least one month prior to the average first killing frost
 - Milorganite Fertilizer benefits
 - Low nitrogen, slow-release
 - ❖ Won't burn the lawn
 - ❖ Promotes even top and root growth

- Doesn't promote lush succulent growth
 - So it's more drought tolerant and less susceptible to insects and disease
- Sweep clippings and fertilizer off walks, drives and hard surfaces back into the lawn where it is needed
- Weed control
 - A healthy lawn is your best defense
 - One fertilization can greatly reduce weeds
 - Hand dig small populations of weeds
 - **Consider using eco-friendly products for weed control**
- Reduce the size of your lawn
- **Replace parts or all with lawn alternatives**
 - No mow
 - Clover and...
 - **Groundcovers**
 - Garden beds in place of lawns

#7 PERMEABLE SURFACES

- Use permeable surface when creating sitting areas and walks in the landscape
- Gravel
- Wood chip mulch
- Pavers with space and plants between
- Steppable groundcovers
- Permeable pavers
- Permeable driveway solutions

PIPE CHECK PROGRAM FOR RESIDENCES IN THE MMSD SERVICE AREA

Rain or groundwater, known as clear water, can overwhelm your sanitary lateral pipe, causing sewage and water to backup into your basement.

- Clear water contributors to basement backups:
 - Connected downspouts
 - Foundation drains under the house without a sump pump
 - Defects in the sanitary lateral pipe
 - Cracks
 - Tree roots

Replacement of the sanitary lateral is the homeowner's responsibility. MMSD Pipe Check Program offers financial incentives to homeowners to reduce the cost for them to eliminate clear water sources.

- Qualification requirements:
 - Property is in MMSD service area
 - Property is a one- or two-family home
 - A site visit completed by approved contractor
 - ❖ Homeowner pays for this
 - Must submit a W-9 to MMSD as the financial incentive you would receive is taxable
 - Sign a participant waiver
 - Work completed by approved contractor

For more information, pipecheckinfo@mmsd.com or 414-225-2250

CALL 811 AT LEAST 3 BUSINESS DAYS BEFORE YOU PUT THE FIRST SHOVEL IN THE GROUND

In Wisconsin you can also file an online request at diggershotline.com. Contact this free service at least three business days in advance of digging. Diggers in Wisconsin or your underground utility locating service will contact all the appropriate companies. These companies will mark the location of their underground utilities in the designated work area. This reduces the danger and inconvenience of accidentally knocking out power, cable or other utilities while creating a beautiful landscape and productive garden.

UPCOMING APPEARANCES & WEBINARS

Check often as more appearances and webinars continue to be added.

April 18th

Spring Rally - Oshkosh, WI

Ebert's Greenhouse Village April 19th

Deer Resistant Gardening

Iowa State University Lectures April 23rd

Gardening for Health & Well-Being

Spring Seminar at Pasquesi April 25th

Top 5 Favorite Annuals, Perennials, Vegetables & Shrubs for the Landscape

Ebert's Greenhouse Village April 26th

Common Tomato Problems & How to Solve Them

Ebert's Greenhouse Village May 2nd

Ask the Plant Doctor

Webinar May 6th

Adding Native Plants to Any Size Gardening Space

May 7th

Grow Your Best Tomato Harvest Yet - Wauwatosa, WI

Ebert's Greenhouse Village May 9th, 10th, 16th, 17th

Ask the Plant Doctor

Roots & Branches May 13th

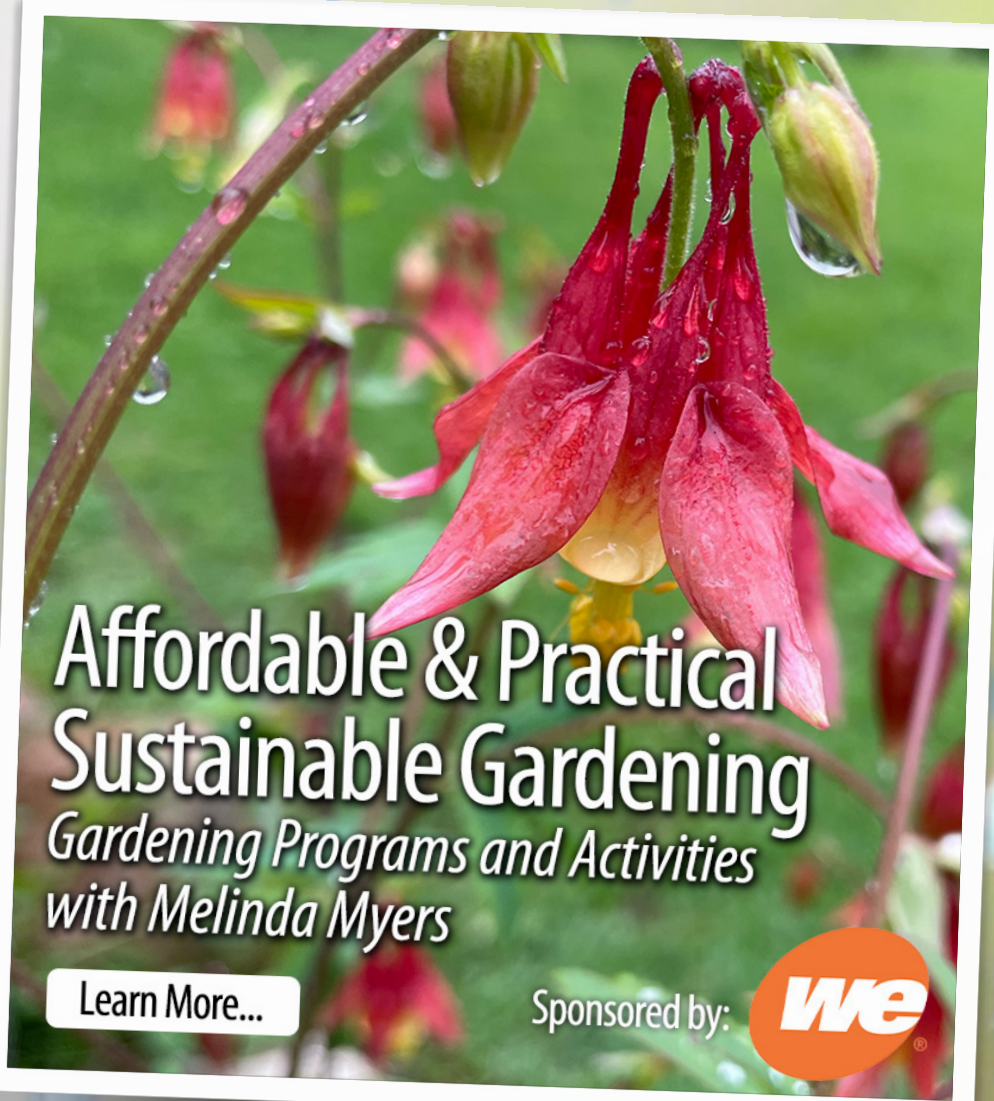
Creating a Pollinator Paradise - West Bend, WI

Webinar May 21st

Planting & Care of Your Rain Garden


Webinar June 3rd

Managing Your Landscape with Pollinators in Mind



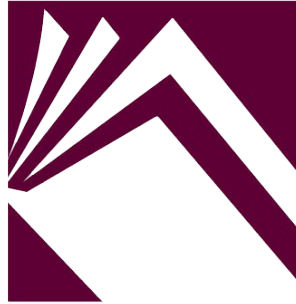
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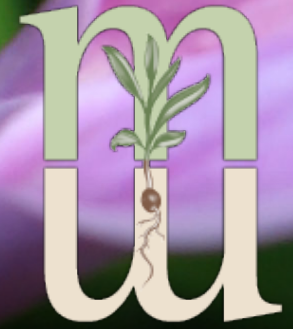


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Midwest Lawn Guides

Minnesota & Wisconsin Getting Started Garden Guide

Month-by-Month Gardening in Minnesota & Wisconsin

Michigan Getting Started Garden Guide

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