



CITY OF STOUGHTON  
DEPARTMENT OF  
PLANNING & DEVELOPMENT  
381 East Main Street, Stoughton, WI. 53589  
(608) 873-6619 [www.ci.stoughton.wi.us](http://www.ci.stoughton.wi.us)

RODNEY J. SCHEEL  
DIRECTOR

March 11, 2016

DNR South Central Region  
Attention: Storm Water Program  
3911 Fish Hatchery Road  
Madison, WI 53711

Re: Annual Report under MS4 General Permit

Dear Mr. Rortvedt:

I am submitting the City of Stoughton's Annual Report that is due March 31, 2016. Please let me know if there is any additional information necessary to be submitted.

I can be reached at (608) 873-6619.

Sincerely,  
City of Stoughton

A handwritten signature in black ink that reads "Rodney J. Scheel". The signature is written in a cursive style.

Rodney J. Scheel  
Director of Planning & Development

Enclosure

cc. Mayor Donna Olson (via email)

Due by March 31, 2016

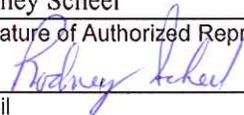
**Notice:** Pursuant to s. NR 216.07(8), Wis. Adm. Code, an owner or operator of a Municipal Separate Storm Sewer System (MS4) is required to submit an annual report to the Department of Natural Resources (DNR) by March 31 of each year to report on activities for the previous calendar year. This form is being provided by the DNR for the user's convenience. Personal information collected will be used for administrative purposes and may be provided to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

This form is for reporting on activities undertaken in calendar year 2015.

**Instructions:** Complete each section of the form that follows. If additional space is needed to respond to a question, attach additional pages. Provide descriptions that explain the program actions taken to comply with the general permit. Complete and submit the annual report by March 31, 2016, to the appropriate address indicated on the last page of this form.

SECTION I. Municipal Information			
Name of Municipality		Facility ID No. (FIN)	
City of Stoughton		39025	
Mailing Address	City	State	ZIP Code
381 E. Main Street	Stoughton	WI	53589
County(s) in which Municipality is located	Municipality Type: (select one)		
Dane	<input type="radio"/> County <input checked="" type="radio"/> City <input type="radio"/> Village <input type="radio"/> Town <input type="radio"/> Other (specify)		

SECTION II. Municipal Contact Information			
Name of Municipal Contact Person		Title	
Rodney Scheel		Director of Planning & Development	
Mailing Address (if different from above)	City	State	ZIP Code
Same		WI	
Email	Phone Number (include area code)	Fax Number (include area code)	
rjscheel@ci.stoughton.wi.us	(608) 873-6619	(608) 873-5519	

SECTION III. Certification			
<p><i>I hereby certify that I am an authorized representative of the municipality covered under MS4 General Permit No. WI-S050075-2 for which this annual report is being submitted and that the information contained in this document and all attachments were gathered and prepared under my direction or supervision. Based on my inquiry of the person or persons under my direction or supervision involved in the preparation of this document, to the best of my knowledge, the information is true, accurate, and complete. I further certify that the municipality's governing body or delegated representatives have reviewed or been apprised of the contents of this annual report. I understand that Wisconsin law provides severe penalties for submitting false information.</i></p>			
Authorized Representative Printed Name	Authorized Representative Title		
Rodney Scheel	Director of Planning & Development		
Signature of Authorized Representative	Date		
	03/11/2016		
Email	Phone Number (include area code)	Fax Number (include area code)	
rjscheel@ci.stoughton.wi.us	(608) 873-6619	(608) 873-5519	

SECTION IV. General Information	
a. Describe what efforts the municipality has undertaken to invite the municipal governing body, interest groups, and the general public to review and comment on the annual report.	<p>The 2015 Annual Report is posted on the City's website for review and comment throughout the year. This report along with other Stormwater Management information can be found on the City's website under the "Residents" tab, or by selecting "Departments", "Planning &amp; Development", "Stormwater Management". The Annual Report will be presented to the City's Public Works Committee. The Public is offered a "Public Comment" period at every Common Council meeting where the public can be heard on any City topic, including stormwater management issues. The Common Council is presented with stormwater management projects for budget approval.</p>
b. Describe how elected and municipal officials and appropriate staff have been kept apprised of the municipal storm water discharge permit and its requirements.	<p>Internally, staff monitors changing requirements and practices to meet permit goals. Public works staff carry out stormwater management practices by street sweeping, inlet cleaning, leaf pick up, etc and track efforts for annual reporting. Leadership reinforces these practices through reports to City committees and the Common Council. Committees and Common Council members are included in discussions during project design review/approvals and how the projects can impact stormwater capacity, quality as well as impact our Permit. Annually, the budget for</p>

**SECTION IV. General Information (continued)**

stormwater management and construction projects is reviewed and approved by the Common Council. The budget process provides an opportunity to educate the elected body about the annual permit requirements and expectations for implementation.

- c. Has the municipality prepared its own municipal-wide storm water management plan?  Yes  No

If yes, title and date of storm water management plan:

"Stormwater Master Plan" - May 2000; "Stormwater Management Plan and Total Suspended Solids Reduction Plan" - May 2006; "Stormwater Management Plan Amendment" - July 2007; "Virgin Lake Area Rehabilitation Report" - October 2007 (Draft); Stormwater Management Plan Appendix A - Updated December 2010

- d. Has the municipality entered into a written agreement with another municipality or a contract with another entity to perform one or more of the conditions as provided under section 2.10 of the general permit?  Yes  No

If yes, describe these cooperative efforts:

(1) The City of Stoughton has a written agreement with Dane County Land Conservation for review and inspection services related to activities in the City that require construction site erosion control and/or post-construction stormwater management according to Chapter 10, Article IV of the City of Stoughton Code of Ordinances.

(2) The City joined the Madison Area Municipal Stormwater Partnership (MAMSWaP) in 2008. Our participation focuses on the information and education component of our permit, however, exposure to the group allows the City to remain current with other aspects of stormwater management efforts being undertaken by other members. We continue to actively participate in the I & E subcommittee of MAMSWaP. City staff attended 3 such meetings in 2015.

- e. Does the municipality have an internet website?  Yes  No

If yes, provide web address:

<http://www.ci.stoughton.wi.us>

If the municipality has an internet website, is there current information about or links provided to the MS4 general permit and/or the municipality's storm water management program?  Yes  No

If yes, provide web address:

<http://www.ci.stoughton.wi.us> Go to the "Residents" tab at the top of the page, then "Stormwater Management", or by going to the Department of Planning & Development area of the website at <http://www.ci.stoughton.wi.us/planning>.

**SECTION V. Permit Conditions**

- a. Minimum Control Measures: For each of the permit conditions listed below, provide a description of the implementation of each program element, the status of meeting measurable goals, and compliance with permit schedule in section 2.11 of the MS4 general permit. Provide an evaluation of program compliance with the general permit, the appropriateness of identified best management practices, and progress towards achieving identified measurable goals. Be specific in describing the actions that have been taken during the reporting year to implement each permit condition and whether measurable goals have been met, including any data collected to document a measurable goal. Also, explain the reasons for any variations from the compliance schedule in the MS4 general permit.

- Public Education and Outreach

A copy of the City Stormwater Information & Education Program can be viewed at: <http://www.ci.stoughton.wi.us> under the "Residents" tab and scroll down to "Stormwater Management".

(1) The City publishes notices in the local paper informing the public on proper management of leaves and grass clippings. "Love Your Lakes, Don't Leaf Them" inserts were included in newspapers throughout Dane County in the fall of 2015.

(2) The City sent out a newsletter to all addresses in the City of Stoughton 3 times in 2015. A sampling of titles in the newsletters include: "Lawn Care Tips"; "Pet Waste in Winter"; "Put Your Sidewalk on a Low-Salt Diet"; "Top Ten Reasons to Install a Rain Garden"; "Yard Waste Site"; "Curbside Brush Collection"; "Fall Leaf Collection"; "Grass Clippings".

(3) The City of Stoughton is a member of the Madison Area Municipal Stormwater Partnership's (MAMSWaP) I & E Subcommittee to fulfill our Education and Outreach requirements. City Staff participated in 3 meetings of the MAMSWaP group in 2015. A copy of the MAMSWaP's Information and Education Work Plan for 2015 is attached.

**SECTION V. Permit Conditions (continued)**

(4) The "Dane Waters" DVD can be seen 24 hours a day on the City's Stormwater Management web page. This can be found by going to [www.ci.stoughton.wi.us](http://www.ci.stoughton.wi.us) then to the "Residents" tab at the top of the page, then "Stormwater Management".

(5) The City website contains links to [myfairlakes.com](http://myfairlakes.com) and [danewaters.com](http://danewaters.com). In 2015, we had several information articles such as: "Give Your Lawn a Check Up"; "How To Build a Rain Garden"; "Springtime Brings More than Flowers"; "Rain Barrels: An Old Idea Made New Again"; "Lawn Watering"; "Leaf Management 101"; "Save Money, Use Less Salt This Winter".

• **Public Involvement and Participation**

The City of Stoughton's I & E program is the main vehicle driving public involvement and participation. Public meetings are held as necessary to involve the public in projects that are the results of WPDES permit requirements. As a member of MAMSWaP, we are participating with the group under their I & E Work Plan. The City notifies the public of activities required by the WPDES permit and encourages input and participation from the public regarding these activities by publishing notices for meetings of all City committees. Examples of such committees include: Public Works; Common Council; Planning Commission; Parks & Recreation; and the River Task Force.

• **Illicit Discharge Detection and Elimination**

City of Stoughton Public Works and Inspection Staff watch for irregular discharges when cleaning storm inlets or conducting other field work. No specific inspections were documented in 2015. There were 0 illicit discharges reported for 2015.

• **Construction Site Pollutant Control**

The City of Stoughton Building Inspector monitors one and two family dwelling construction projects after rainfall events and while conducting other inspections on these sites. The City contracts with Dane County Land Conservation to conduct stormwater and erosion control reviews on all projects that are not one and two family dwellings. In 2015, they conducted 223 inspections and made 43 contacts by email, verbally or via telephone. There were 0 non-compliance notices issued, and 0 recommendations made for enforcement action.

• **Post-Construction Storm Water Management**

The City revised its Stormwater and Erosion Control Ordinances to comply with NR 151. The WDNR and Dane County reviewed and published in May, 2006, and updated in 2013. Ordinances adequately address post-construction stormwater management. The City performs routine maintenance on all City-owned or managed properties. Routine maintenance activity for stormwater facilities includes mowing, removing volunteer tree growth, repairing erosion, and removing obstructions to stormwater flow and is completed concurrent with other City maintenance activity. Required maintenance for private stormwater facilities is covered in Section 10-129 of the City of Stoughton Municipal Ordinances.

• **Pollution Prevention**

**Catch Basin Cleaning:** The City of Stoughton cleans inlet grates before and after each rainfall. Each catch basin in the City is inspected and cleaned at least once per year.

**Street Sweeping:** The City performs street sweeping activity from March through November each year, depending on the weather. The Downtown area is swept every Friday morning while the rest of the City streets are swept once per month. The City uses one mechanical broom sweeper and one vacuum type sweeper.

**De-icing, etc:** The City uses salt, salt brine, or a mixture of sand and salt as necessary. On average, the City uses approximately 250 pounds of salt per lane mile and 10 gallons of brine per ton. Salt in solid form is pre-wetted prior to application. Since 2011, the City introduced a beet juice solution to use prior to snow events to reduce the amount of salt used.

**Yard Waste:** The City collects yard waste curbside for 3 weeks in the Spring (normally during April) and 6 weeks in the Fall (scheduled between mid-October and December 1st). There is also a City site at which residents can drop off their own yard waste. The City uses 2 leaf vacuum trucks. Leaf and grass clippings that the City collects are used by local organic farmers.

**SECTION V. Permit Conditions (continued)**

**Turf Management:** The City started a turf management program in 2013 to assist with controlling weeds and promoting healthy turf grasses for athletic fields in city parks and other city owned properties. Fertilizing and weed control applications are contracted out and applied only to areas identified through turf assessments.

In 2015, the City collected the following in our pollution prevention efforts: Curbside leaf pickup: 5,200 cubic yards or 910 tons; Street Sweeping: 368 cubic yards using a Pelican Sweeper and 1,024 cubic yards using a Whirlwind Sweeper; Yard Waste - Grass clippings & leaves at Drop-off Site: 1,755 cubic yards or 307 tons.

**b. Winter Road Management Activities:**

Provide the name, title, and phone number for the individual(s) with overall responsibility for winter roadway maintenance.

Karl Manthe, Street Superintendent, (608) 873-6303

Describe the types of products used for winter road management (e.g., deicing, pre-wetting, salting, etc.).

The Street Department uses a variety of products, including a salt brine mix for anti-icing and pre-wetting salt. Rock salt is used as the primary product for melting ice and snow from streets. When temperatures are below 15 degrees, some sand is added to salt to assist with traction.

Describe the type of equipment used to apply the products.

There are 9 patrol trucks equipped with tailgate spreaders and pre-wet tanks to apply pre-wet salt to the pavement. There is also one 1,000 gallon tank on a patrol truck for anti-icing streets before snow events.

Report the amount of product used per month.

January - 112 tons salt, 2,500 gallons brine, 114 tons sand/salt mixture  
February - 142 tons salt, 2,900 gallons brine, 6 tons sand/salt mixture  
March - none  
November - 60 tons salt, 1,135 gallons brine, 3 tons sand/salt mixture  
December - 84 tons salt, 835 gallons brine, 12 tons sand/salt mixture

Report the snow disposal locations, if snow is hauled away.

Snow is hauled to an empty city-owned lot on South Fourth Street.

Describe any anti-icing, equipment calibration, and salt reduction strategies considered.

The Street Department is constantly reviewing their snow and ice removal operations for efficiencies and to conserve product. The Department has also attends training workshops to learn valuable information on salt use. The Fleet Manager works with the equipment vendor to calibrate equipment, and anti-icing is only done on arterial streets and hills.

Describe any other additional measurable data or information that the permittee used to evaluate its winter road management activities.

The Street Department checks pavement temperatures to make sure the correct product is applied.

**c. Municipal facility(s):**

Provide an inventory of municipally owned or operated structural storm water management facility(s), include: Location of each facility and contact information for the individual(s) with overall responsibility for each facility.

Public Works Garage, 515 S. Fourth Street - Street Superintendent Karl Manthe (608) 873-6303

Describe the housekeeping activities and best management practices installed to reduce or eliminate storm water contamination.

Salt and brine storage locations are inspected routinely by the employees and annually with a State contracted inspector. Salt residue is sweep from the asphalt to minimize migration. Spills and leaks are treated with absorbent material and leaking equipment is promptly repaired. Flammable materials are stored in rated cabinets. Used products are properly disposed in rated containers. Snowplowing equipment is rinsed indoors after use to contain salt products indoors. Sweeping equipment is rinsed indoors and spoils are disposed in the Dane County Landfill.

**SECTION V. Permit Conditions (continued)**

Discuss recommendations for improvements to current storm water management practices at the facility(s) and a timeline for installation and/or implementation of these recommendations.

A new Public Works facility is planned to be built on a new site in approximately 2018. The City has already purchased land for this project. The facility will be designed to incorporate best management practices.

Describe the municipal facility(s) employee training on storm water pollution prevention provided.

Employees are trained in good housekeeping procedures. They are trained to notice leaks and spills and how to treat such spills and leaks. Rinsing equipment and residual containment is routine practice at the facility.

Describe the spill prevention and response procedures in place at the municipal facility(s).

Facility employees are trained to notice leaks and spills and how to treat such spills and leaks. Leaks and spills also are stressed to maintained promptly to minimize slips and falls as part of our safety training.

d. Storm Water Quality Management: Has the municipality completed a pollutant-loading analysis to assess compliance with the 20% TSS reduction developed urban area performance standard?  Yes  No

If yes, provide the following: Model used WinSLAM Version 9.40 Reduction (%) 41.8

If no, include a description of any actions the municipality has undertaken during 2014 to help achieve the 20% standard.

Has the municipality completed an evaluation of all municipal owned or operated structural flood control facilities to determine the feasibility of retrofitting to increase TSS removal?  Yes  No

If yes, describe:

e. Best Management Practices Maintenance: Does the municipality have a maintenance program for installed storm water best management practices?  Yes  No

If yes, describe the maintenance program and any maintenance activities that have occurred for best management practices in 2014. If available, attach any additional information on the maintenance program. See attached materials.

f. Storm Sewer System Map: Describe any changes or updates to the storm sewer system map made in the reporting year. Provide an updated map if any changes occurred during the reporting year.

No updates in 2015. The system map is available on our website at <http://www.ci.stoughton.wi.us> Go to the "Residents" tab at the top of the page, then "Stormwater Management", or by going to the Department of Planning & Development area of the website at <http://www.ci.stoughton.wi.us/planning>.

**SECTION VI. Fiscal Analysis**

a. Provide a fiscal analysis that includes the annual expenditures for 2015, and the budget for 2015 and 2016. A table to document fiscal information is provided on page 8.

See completed table.

b. What financing/fiscal strategy has the municipality implemented to finance the requirements of the general permit?

Storm water utility  General fund  Other \_\_\_\_\_

c. Are adequate revenues being generated to implement your storm water management program to meet the permit requirements?  Yes  No

Please provide a brief summary of your financing/fiscal strategy and any additional information that will assist the Department in understanding how storm water management funds are being generated to implement and administer your storm water management program.

The City has a Stormwater Utility which is funding stormwater management activities in Stoughton. The fee is based on impervious area. Each single-family residential property is assigned 1 ERU (equivalent runoff unit) that equals 3,105 square feet of impervious surface. Other properties are assigned an ERU value based on their impervious surface.

**SECTION VII. Inspections and Enforcement Actions**

Note: If an ordinance listed below has previously been submitted and has not been amended since that time, a copy does not need to be submitted again. If the ordinance was previously submitted, indicate such in the space provided.

- a. As of the date of this annual report, has the municipality updated or revised its construction site pollutant control ordinance in accordance with subsection 2.4.1 of the general permit?  Yes  No

If yes, attach copy or provide web link to ordinance:

Previously provided. Available at municode.com under Stoughton, Chapter 10.

- b. As of the date of this annual report, has the municipality updated or revised its post-construction storm water management ordinance in accordance with subsection 2.5.1 of the general permit?  Yes  No

If yes, attach copy or provide web link to ordinance: Previously provided. Available at municode.com under Stoughton, Cha

- c. As of the date of this annual report, has the municipality updated or revised its illicit discharge detection and elimination ordinance in accordance with subsection 2.3.1 of the general permit?  Yes  No

If yes, attach copy or provide web link to ordinance:

Previously provided. Available at municode.com under Stoughton, Chapter 10.

- d. As of the date of this annual report, has the municipality adopted any other ordinances it has deemed necessary to implement a program under the general permit (e.g., pet waste ordinance, leaf management/yard waste ordinance, parking restrictions for street cleaning, etc.)?  Yes  No

If yes, attach copy or provide web link to ordinance:

Previously provided. Available at municode.com under Stoughton, Chapter 58.

- e. Provide a summary of available information on the number and nature of inspections and enforcement actions conducted during the reporting period to ensure compliance with the ordinances described in a. to d. above.

The City of Stoughton Building Inspector monitors one and two family dwelling construction projects after rainfall events and while conducting other inspections on these sites. The City contracts with Dane County Land Conservation to conduct stormwater and erosion control reviews on all projects that are not one and two family dwellings. In 2015, they conducted 223 inspections and made 43 contacts by email, verbally or via telephone. There were 0 non-compliance notices issued, and 0 recommendations made for enforcement action.

**SECTION VIII. Water Quality Concerns**

- a. Does any part of the MS4 discharge to an outstanding resource water (ORW) or exceptional resource water (ERW) listed under s. NR 102.10 or 102.11, Wis. Adm. Code? (A list of ORWs and ERWs may be found on the Department's Internet site at: <http://dnr.wi.gov/topic/surfacewater/orwerw.html>)  Yes  No

If yes, list:

- b. Does any part of the MS4 discharge to an impaired waterbody listed in accordance with section 303(d)(1) of the federal Clean Water Act, 33 USC § 1313(d)(1)(C)? (A list of the most current Wisconsin impaired waterbodies may be found on the Department's Internet site at: <http://dnr.wi.gov/water/impairedsearch.aspx?status=303d>)  Yes  No

If yes, complete the following:

- Impaired waterbody to which the MS4 discharges:

The Yahara River

- Description of actions municipality has taken to comply with section 1.5.2 of the MS4 general permit for discharges of pollutant (s) of concern to an impaired waterbody:

The City of Stoughton utilizes the following practices to reduce sediment and phosphorus contributions to the Yahara River (Dane County requirements limit the availability and use of phosphorus fertilizer products which assists in the reduction of phosphorus in the Yahara River):

Catch Basin Cleaning: The City of Stoughton cleans inlet grates before and after each rainfall. Each catch basin in the City is inspected and cleaned at least once per year.

Street Sweeping: The City performs street sweeping activity from March through November each year, depending on the weather. The Downtown area is swept every Friday morning while the rest of the City streets are swept once per month. The City uses one mechanical broom sweeper and one vacuum type sweeper.

**SECTION VIII. Water Quality Concerns (continued)**

De-icing, etc: The City uses salt, salt brine, or a mixture of sand and salt as necessary. On average, the City uses approximately 250 pounds of salt per lane mile and 10 gallons of brine per ton. Salt in solid form is pre-wetted prior to application. Since 2011, the City introduced a beet juice solution to use prior to snow events to reduce the amount of salt used.

Yard Waste: The City collects yard waste curbside for 3 weeks in the Spring (normally during April) and 6 weeks in the Fall (scheduled between mid-October and December 1st). There is also a City site at which residents can drop off their own yard waste. The City uses 2 leaf vacuum trucks. Leaf and grass clippings that the City collects are used by local organic farmers.

Turf Management: The City started a turf management program in 2013 to assist with controlling weeds and promoting healthy turf grasses for athletic fields in city parks and other city owned properties. Fertilizing and weed control applications are contracted out and applied only to areas identified through turf assessments.

c. Identify any known water quality improvements in the receiving water to which the MS4 discharges during the reporting period. Other than re-development projects within the City that must meet State and Local stormwater requirements, none.

d. Identify any known water quality degradation in the receiving water to which the MS4 discharges during the reporting period and what actions are being taken to improve the water quality in the receiving water.

No known water quality degradation into Yahara River. Stormwater management practices identified in this report are used to improve water quality.

**SECTION IX. Proposed Program Changes**

Describe any proposed changes to the storm water management program being contemplated by the municipality for 2016 and the schedule for implementing those changes. Proposed program changes must be consistent with the requirements of the general permit.

We will be considered impacts to join MAMSWaP for permit requirements in addition to just I & E aspects. We will be discussing this and Paradise Pond pumping conditions with the DNR in 2016.

**SECTION X. Other**

Any other additional information the permittee would like to provide in the Annual Report regarding their storm water program?

The City will be working on a TMDL Stormwater Plan. Complementary to the TMDL Stormwater Plan will be updates to certain portions of the City MS4 programs. The MS4 program modifications include:

1. Public Education and Outreach and Public Involvement and Participation programs review and modification complementary to the MAMSWAP (Madison Area Municipal Stormwater Partnership) efforts.
2. Construction site erosion control and stormwater management ordinance modifications to be consistent with February 2012 NR 151 revisions.
3. Illicit Discharge Detection and Elimination program modifications to be consistent with WDNR's March 2012 Guidance document and illicit discharge screening in 2016.
4. Stormwater Pollution Prevention program modifications based on current operations.
5. Deicing Activities Documentation.

Fiscal Analysis Table. Complete the fiscal analysis table provided below.

Program Element	Annual Expenditure 2015	Budget		Source of Funds
		2015	2016	
Public Education and Outreach	16,877	18,069	16,963	
Public Involvement and Participation	30,202	32,097	31,143	
Illicit Discharge Detection and Elimination	17,015	18,445	17,542	
Construction Site Pollutant Control	34,358	31,471	32,412	
Post-Construction Storm Water Management	34,419	48,861	48,412	
Pollution Prevention	164,792	180,305	177,311	
Storm Water Quality Management (including pollutant-loading analysis)	27,901	30,277	28,843	
Storm Sewer System Map	6,130	6,613	6,241	
Other:				

NORTHERN REGION COUNTIES			WEST CENTRAL REGION COUNTIES		
Ashland	Langlade	DNR Service Center	Adams	Marathon	DNR Service Center
Barron	Lincoln	Attn: Storm Water Program	Buffalo	Monroe	Attn: Storm Water Program
Bayfield	Oneida	5301 Rib Mountain Rd.	Chippewa	Pepin	5301 Rib Mountain Rd.
Burnett	Polk	Wausau, WI 54401	Clark	Pierce	Wausau, WI 54401
Douglas	Price	Phone: (715) 359-4522	Crawford	Portage	Phone: (715) 359-4522
Florence	Rusk		Dunn	St. Croix	
Forest	Sawyer		Eau Claire	Trempealeau	
Iron	Taylor		Jackson	Vernon	
	Vilas		Juneau	Wood	
	Washburn		La Crosse		

NORTHEAST REGION COUNTIES			SOUTH CENTRAL REGION COUNTIES		
Brown	Marquette	DNR Northeast Region	Columbia	Jefferson	DNR South Central Region
Calumet	Menominee	Attn: Storm Water Program	Dane	LaFayette	Attn: Storm Water Program
Door	Oconto	2984 Shawano Ave.	Dodge	Richland	3911 Fish Hatchery Rd.
Fond du Lac	Outagamie	Green Bay, WI 54313	Grant	Rock	Fitchburg, WI 53711
Green Lake	Shawano	Phone: (920) 662-5100	Green	Sauk	Phone: (608) 275-3266
Kewaunee	Waupaca		Iowa		
Manitowoc	Waushara				
Marinette	Winnebago				

SOUTHEAST REGION COUNTIES		
Kenosha	Sheboygan	DNR Service Center
Milwaukee	Walworth	Attn: Storm Water Program
Ozaukee	Washington	141 NW Barstow Street,
Racine	Waukesha	Room 180
		Waukesha, WI 53188
		(262) 574-2100

Municipal Stormwater Permit – Annual Report

Collection Totals for 2015

Wood Chips – 525 tons

Leaves (vacuumed) – 5,200 yards = 910 tons

Yardwaste (grass clippings, leaves) – 1,755 yards = 307 ton

Street Sweepings – 368 yards (Pelican Sweeper), 1,024 yards (Whirlwind Sweeper) –  
Total Sweeping – 1,392 yards

Salt Usage - 398 tons

Salt & Sand – 135 tons

Brine Blended – 7,370 gallons

## Save Money—Use Less Salt This Winter

Salt and sand contribute greatly to lake and stream pollution. Once it's spread on parking lots, streets, sidewalks and driveways, it's on its way to the nearest lake or stream and cannot be recovered. Fifty pounds of salt (one large bag) can pollute 10,000 gallons of water—which is equivalent to one teaspoon in a five-gallon bucket of water. Municipalities are working to cut salt use while still keeping streets safe. So, let's all save money this winter with these helpful tips and help the lakes and streams at the same time.

- Always use a shovel first, especially if the pavement temperature is 32°F or more—don't waste money on deicers.
- Reserve deicers for ice, not snow. Shovel as soon as possible so that wet, heavy snow doesn't have the opportunity to turn to ice.
- All salt is not created equal. Various types of deicers perform differently at different temperature ranges. The most common and cheapest is sodium chloride ("rock salt"), but doesn't work when the pavement is colder than 15°F. Magnesium chloride and calcium chloride cost more, but you'll use less and it works in colder temps.
- Consider getting a pavement thermometer (~\$30) to help determine pavement temperatures, which can vary widely depending on how much sun shines on your driveway. (Plus, they're kind of fun to play with.)
- Measure your sidewalk and driveway so you know how much you need. A general guideline is to use 1-3 cups of salt per 1,000 square feet. Save money by using only what is needed.
- Apply liquid salt to the pavement before the storm and shovel a little while it's snowing. After the storm, shovel before using any salt. Most times, you won't need any. Use deicers on ice, don't waste it on snow.
- You can use 30% less deicer if you wet your salt with some water before applying it.
- While salt is sometimes mixed with sand to keep the sand from freezing into a solid block, it's not a good idea to use both at the same time on your sidewalk. The salt will melt the ice, but when it refreezes, the sand will be frozen below the surface where it can't do any good. Choose one or the other. Try removing the ice by hand first before using either sand or salt.
- If you have an area that tends to ice up, consider making it a priority to remedy next summer so you won't need to deice in the future.

## Be a "Label Reader"!

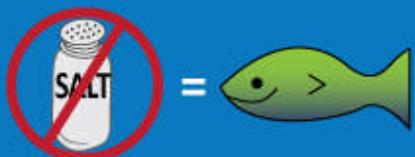
Read the label on the ice melt product so that you know exactly what you are spending your hard-earned cash on. If the bag doesn't say otherwise, it's probably sodium chloride, but you're better off using something that says exactly what's in the bag. Some products claiming to be "green" or "pet safe" are

**Love Your Lakes,  
Don't Them**

Using less **salt** on your sidewalk and driveway this winter shows your love for the lakes.

If you must use a deicer, use it sparingly and make sure you read the label for application rates & environmental effects.

**Don't use salt when you can use a shovel.**



Learn more at  
[myfairlakes.com](http://myfairlakes.com)

simply chloride compounds. You can always ask for the Material Safety Data Sheet (MSDS) for the product—it will show percentages so that you can see if you are paying for pretty packaging of rock salt. And while you’re reading, be sure to follow the application rates. You need much less of some products than others, so be sure not to waste money by over applying.

Labeled as:	Works Down to:	Approximate Cost	Pros/Concerns
Calcium Chloride	-25°F	\$35 for 50 pounds	Use much less than rock salt, chloride impacts; may damage concrete
Magnesium Chloride	5°F	\$30-\$35 for 50 pounds; \$15-\$20 for 20 pounds	less toxic than calcium chloride and less damaging to concrete and pavement, but may corrode metals over time
Sodium Chloride (“rock salt”)	15°F	\$6 for 25 pound bag	Chloride impacts
Calcium Magnesium Acetate (CMA)	25 °F	\$20 for 50 pounds	No chlorides; less toxic
Potassium Chloride	25°F		need to use more than rock salt; works slower than calcium chloride, safer on concrete
Sand	No melting effect	\$5 for a 20 lb bag	Not a deicer; for traction only; do not use with salt; accumulates in streets, lakes and streams; needs to be swept up, easily tracked into buildings

*Urea and Amide/Glycol are other deicing products that are chloride free and touted as pet/kid/environmentally friendly, but generally are not as effective as chlorides. However, when combined with shoveling first, can be a useful alternative.*

*The Madison Area Municipal Storm Water Partnership is working with the Rock River Stormwater Group to reduce the amount of pollution making its way to our lakes and streams. The Yahara chain of lakes and the Yahara River both ultimately drain to the Rock River. Both groups thank you for helping to Renew the Rock by reducing stormwater pollution throughout the Rock River area. Learn more at [www.myfairlakes.com](http://www.myfairlakes.com) and [www.renewtherock.com](http://www.renewtherock.com).*



## *Clean Water Starts at Home*

### Tip # 7: Winter Walkways Worth their Salt?

As snow season draws near, consider this: sodium chloride (NaCl) is the most common form of salt used for de-icing roads and walkways. It is used so much that it has become a water pollutant. It is very difficult and costly to remove it once it is in the water, so prevention is very important.

Here are ways to reduce winter salt use and still have safe walking areas:

Remove snow **during** a snowstorm instead of waiting until the end.

Think “anti-icing.”

Treat **before** a storm to help prevent ice buildup so less de-icer is needed.

Alternatives:

- Sand - for traction is safe and effective, but sweep up excess
- Liquid magnesium chloride, calcium chloride, potassium chloride (all 3 work better than regular salt in colder temps), calcium magnesium acetate and potassium acetate.
  - Do Not apply if ice has already formed, or in rainy, sleety, blowing conditions, nor if snowfall is more than 1-inch per hour.
  - Concrete may require specialized use or product

Brand name alternatives are:  
Zero Ice Melt, Quik Joe's Ice Melt, Ice Away, Hydro-melt, Ace Hardware's salt mix.

Too costly?  
Try using sand for traction as an alternative

After storms; use as little de-icer as possible:

The closest salt substitute is potassium acetate

Sand - safe for pets and children (but sweep up excess whenever possible).

Remember, regular salt is not effective at temperatures below 15 degrees (F). Sand, liquid magnesium chloride, calcium chloride, potassium chloride work at colder temperatures.

Agencies are actively using new methods on roads like anti-icing using liquid chemicals that lower the freeze-point and so delay the formation of ice. This requires knowing how cold the pavement will get and if it will freeze in order to determine the best time for chemical application. The chemicals then remain effective until washed away by rain, fog, or humidity. Chemicals used for anti-icing include magnesium chloride and potassium acetate. Each has different environmental impacts. Research continues for new cost-effective ways to have safe roads in winter.

For a video of winter salting tips at home, go to: <http://moourl.com/wintersaltvideo>

### ***Give Your Lawn a Checkup Before You Fertilize***

After a long winter under a deep blanket of snow, your lawn is finally visible again, matted and brown. You may be thinking about spring cleaning and maintenance, including an application of fertilizer to ensure lush, green grass this summer. Before you fertilize, test your soil to see what your lawn needs. You may be wasting your time and money, and sending excess nutrients to local waterways where they feed algae and damage fish habitat, if you don't test first.

If your soil already has the right balance of nitrogen, phosphorous and potassium, you don't need to fertilize. To figure out your lawn's needs, send in a soil sample to be tested. The University of Wisconsin has a soil testing lab right in Madison. Any Wisconsin soil can be submitted for analysis at a cost of \$15/sample. A sample is two cups of soil collected in multiple places from the top 4 inches of your lawn. The laboratory will return a report for each sample indicating soil pH, percent organic matter, phosphorus and potassium analysis. It will also provide recommendations on the addition of lime (for pH) and fertilizer.

Right now is a great time to test—you should have your results in time for a spring application, *if* one is recommended. You'll find everything you need on the UW soil lab website <http://uwlab.soils.wisc.edu/lawn-garden/> (or google "UW soil testing"), including the submission form and sampling instructions.

Keep your lawn healthy and our area waters clean year round by:

- leaving grass clippings on the lawn
- selecting fertilizers with no phosphorus (unless your soil test results show it's needed; it's the law here in Dane County)
- avoiding weed and feed products
- calibrating fertilizer spreaders correctly
- keeping fertilizer off of paved surfaces
- choosing fertilizers with at least 25%- 50% of the nitrogen in slow release form



Sample soil test report, [http://uwlab.soils.wisc.edu/files/forms/lag\\_sample.pdf](http://uwlab.soils.wisc.edu/files/forms/lag_sample.pdf)

**Samples Analyzed By:**  
 UW Soil & Plant Analysis Lab  
 8452 Mineral Point Road  
 Verona, WI 53593  
 (608) 262-4364

## SOIL TEST REPORT LAWN & GARDEN

COOPERATIVE EXTENSION  
 University of Wisconsin-Extension  
 University of Wisconsin-Madison  
 Department of Soil Science

Lab Number: 54321

Date received: 8/1/2007

Account: 555800

Client: Bucky Badger

County: Dane

Date processed: 8/10/2007

Send to:

Bucky Badger

Area Type  
Lawn/Established

Area Designation  
Lawn

### RECOMMENDATIONS

**Lime to Apply**

No soil pH adjustment is recommended.

**Fertilizer to Apply**

Based on the results of your soil analysis, we recommend the following fertilizer program.

Using the following grid, apply the recommended fertilizers using the spreader setting shown on the fertilizer bag.

Type of turf fertilizer	May 1-15	July 1-15	September 1-15	October 15-30
General high N	A	B	C*	D
Starter high P				
Winterizer high K				D

Follow rates/spreader settings on the fertilizer bag.

A-D: Apply 1 lb actual N/1,000 ft<sup>2</sup>

D: Apply winterizer grade to build K levels for one year then revert to general fertilizer

\* Skip the September application if you mulch mow.

**Cultural and Management Tips**

Use only fertilizers manufactured specifically for application on turfgrass.

Sweep up any fertilizer accidentally applied to paved surfaces.

*The Madison Area Municipal Storm Water Partnership is working with the Rock River Stormwater Group to reduce the amount of pollution making its way to our lakes and rivers. The Yahara chain of lakes and the Yahara River both ultimately drain to the Rock River. Both groups thank you for helping to Renew the Rock by reducing stormwater pollution throughout the Rock River area. Learn more at [www.myfairlakes.com](http://www.myfairlakes.com) and [www.renewtherock.com](http://www.renewtherock.com).*





CITY OF STOUGHTON  
DEPARTMENT OF  
PLANNING & DEVELOPMENT  
381 East Main Street, Stoughton, WI. 53589  
(608) 873-6619 [www.ci.stoughton.wi.us](http://www.ci.stoughton.wi.us)

RODNEY J. SCHEEL  
DIRECTOR

March 11, 2016

DNR South Central Region  
Attention: Storm Water Program  
3911 Fish Hatchery Road  
Madison, WI 53711

Re: Annual Report under MS4 General Permit

Dear Mr. Rortvedt:

I am submitting the City of Stoughton's Annual Report that is due March 31, 2016. Please let me know if there is any additional information necessary to be submitted.

I can be reached at (608) 873-6619.

Sincerely,  
City of Stoughton

A handwritten signature in black ink that reads "Rodney J. Scheel". The signature is written in a cursive style with a large initial 'R'.

Rodney J. Scheel  
Director of Planning & Development

Enclosure

cc. Mayor Donna Olson (via email)

# Building a Rain Garden

## What is a Rain Garden?

Rain gardens are specially designed gardens that collect and infiltrate stormwater from driveways, and heavily compacted lawns.

They can be as manicured or natural as the gardener chooses, and though typically planted with native vegetation, ornamentals certainly may be used for variety.

Building a rain garden is a great way for individuals to get involved in improving our lakes and rivers.



*Newly Planted*



Red Admiral butterfly on a Purple Coneflower



Honey bee on Culver's Root



*During a Rain Event*

## Why Plant a Rain Garden?

Rain & melted snow run off our roofs, driveways & yards, into our streets, through the storm system, and eventually to our lakes & rivers. This water is untreated and carries all sorts of pollutants such as leaves, grass, oil, salt, fertilizer, pet waste, and pesticides. Rain gardens retain the water before it leaves your yard and keep the pollutants in the garden, where they can be absorbed into the soil.

Rain gardens have the potential to soak up significantly more water than a regular lawn, improving water quality, replenishing groundwater, and reducing the chances for localized flooding.

They also happen to be beautiful and provide habitat for beneficial critters: birds, bees, butterflies, & dragonflies.



*One Year Later*



Coreopsis



Left: Prairie Dropseed

Center: Spiderwort

Right: Prairie Blazingstar

All photos graciously submitted by J. Bertolacini

Learn more @  
[myfairlakes.com](http://myfairlakes.com)

# Rain Gardens: step by step

## Designing the Garden

Choosing the location of your garden can seem a little daunting to some. You will want to stay 10 feet from your house's foundation to avoid seepage. The best location would likely be fairly close to your downspouts if you intend to direct roof water to your garden. Make your garden as big as you are willing and able to maintain. There are some rules of thumb, but you can always change it if you feel it's too small or too big.

## Site Preparation

The amount of preparation required depends on your soil. If your soil is easy to dig into and water drains fairly quickly, you likely only need to remove any grass and create a 6-8 inch depression to allow water to pond temporarily. If your soil is hard, you will want to remove a few extra inches of soil and add compost to help loosen it up and improve infiltration before planting. Amazingly, some plants can push their roots through the toughest soils, and open up small channels to allow water to soak in. Look into "clay busters" if you have exceptionally bad soils.

## Planting

Plant selection can also be confusing, but have fun with it. If design properly, a rain garden will not hold water for very long, and so "wetland plants" may not be the best option. Instead select native plants that can handle a fluctuation in water levels. Talk to your local greenhouse about what plants they recommend or see below for some suggestions.

*Pick & Choose or Select Your Own*

○ Full Sun (6+ hrs)   ● Part Sun (3-6 hrs)   ● Full Shade (0-3 hrs)

		Prairie Blazingstar ○	
		Lanceleaf Coreopsis ○	
		Purple Coneflower ○ ●	
		Spiderwort ○ ●	
		Canada Anemone ○ ●	
		Nodding Onion ○	
		Virginia Mountain Mint ○ ●	
		Butterflyweed ○ ●	
		Anise Hyssop ○ ●	
		Marsh Phlox ○ ●	
		Black-Eyed Susan ○ ●	
		Columbine ○ ● ●	
		Orange Coneflower ○ ●	
		Wild Geranium ○ ● ●	
		Sky Blue Aster ○ ●	
		Woodland Phlox ● ●	
		Calico Aster ○ ● ●	
		Monkey Flower ●	
		False Rue Anemone ●	
		Zig Zag Goldenrod ● ●	
GRASSES/SEDGES			
Common Oak Sedge, Sideoats Gramma Grass, Little Bluestem, Prairie Dropseed, Silky Wild Rye			
May	June	July	Aug. Sept. Oct.

Bloom times may vary.

# SOME NATIVE PLANTS

Remember to consider your soil and light conditions when choosing plants. Some plants prefer dry conditions, others prefer wet or shady spots, and they bloom at various times, so check these things as you select. Native plant nursery professionals or native plant enthusiasts can help you with this.

- |                      |                      |                        |                       |
|----------------------|----------------------|------------------------|-----------------------|
| Arrowhead            | Golden Alexander     | Purple Coneflower      | Sweet Flag            |
| Bee Balm             | Great Blue Lobelia   | Purple Giant Hyssop    | Switch Grass          |
| Bellwort             | Green Bulrush        | Queen of the Prairie   | Tall Brown-Eyed Susan |
| Bicknell Sedge       | Hairy Wood Mint      | Riddell's Goldenrod    | Tall Meadow Rue       |
| Big Bluestem         | Interrupted Fern     | River Bulrush          | Torrey's Rush         |
| Blue Cohosh          | Jack in the Pulpit   | Rough Cinquefoil       | Turtlehead            |
| Blue Joint Grass     | Jacob's Ladder       | (volunteer)            | Tussock Sedge         |
| Blue Vervain         | Joe-Pye Weed         | Royal Fern             | Virginia Bluebells    |
| Boneset              | Lady Fern            | Sedges                 | Water Plantain        |
| Bottlebrush Sedge    | Lavender Hyssop      | Sensitive Fern         | Wild Bergamot         |
| Branching Coneflower | Maidenhair Fern      | Side-Flowering Aster   | Wild Blue Flag Iris   |
| Brome Hummock Sedge  | Marsh Marigold       | Silky Wild Rye         | Wild Blue Indigo      |
| Cattail              | Marsh (Red) Milkweed | Smooth Blue Aster      | Wild Blue Phlox       |
| Celandine Poppy      | Marsh Phlox          | Smooth Penstemon       | Wild Geranium         |
| Cardinal Flower      | Mountain Mint        | (Foxglove Beardtongue) | Wild Ginger           |
| Cinnamon Fern        | New England Aster    | Sneezeweed             | Wild Iris (Blue Flag) |
| Columbine            | Obedient Plant       | Soft-stemmed Bulrush   | Wild Violet           |
| Culver's Root        | Ohio Goldenrod       | Spotted Joe-Pye Weed   | Witch Hazel           |
| Cup Plant            | Palm Sedge           | Stiff Goldenrod        | Yellow Coneflower     |
| False Dragon's Head  | Pennsylvania Sedge   | Swamp Aster            | Yellow Trout Lily     |
| Fireweed             | Prairie Blazing Star | Swamp Milkweed         | Zig Zag Goldenrod     |
| Fox Sedge            | Prairie Dock         | Sweet Black-eyed Susan |                       |

# HOW TO BUILD A RAIN GARDEN

A BEAUTIFUL ADDITION TO YOUR YARD  
THAT HELPS PROTECT OUR WATER RESOURCES!



## VISIT OTHER GARDENS

Visiting well-designed gardens can give you ideas and talking to folks who have them can provide tips on how to do it right.

**Willy Street Co-op**, 1221 Williamson Street, Madison

**Edgewood Campus Rain Gardens**, 1000 Edgewood College Drive, Madison

**Residential Site**, 614 Piper Drive, Madison

**Residential Site**, 2245 Linden Ave., Madison

Search the Internet for more information. Go to [www.co.dane.wi.us/commissions/lakes/raingarden.shtml](http://www.co.dane.wi.us/commissions/lakes/raingarden.shtml) for links to informational sites. Contact UWEX if you would like someone to speak to your community group or garden club on building rain gardens. Call 608-224-3718 to schedule a time.



This brochure was prepared as a public service by the Dane County Lakes and Watershed Commission, a coordinating and advisory agency that works to protect and improve water quality as well as the scenic, economic, recreational and environmental value of Dane County's water resources.

Sue Jones, Watershed Management Coordinator, 608/267-0118, e-mail: [lakes@co.dane.wi.us](mailto:lakes@co.dane.wi.us)  
Website: [www.co.dane.wi.us/commissions/lakes/](http://www.co.dane.wi.us/commissions/lakes/)



# WHAT IS A RAIN GARDEN?

A rain garden is a shallow depression in your yard that's planted with native flowering plants and grasses. The garden not only looks great, but also soaks up rainwater and melted snow from your home's downspouts, driveway or lawn. Water soaks into the soil and replenishes groundwater rather than becoming runoff.

**THERE IS NINE TIMES MORE RUNOFF FROM A TYPICAL CITY BLOCK THAN FROM A WOODED AREA OF THE SAME SIZE.**

## WHY PLANT A RAIN GARDEN?

Rain and melted snow runs off our roofs, driveways and yards, into our streets and eventually through the storm drain system to our rivers and lakes. This runoff *is untreated*, and carries with it all sorts of pollutants such as soil, leaves, grass, oil, salt, fertilizer, pet waste, pesticides and more, and delivers it to our rivers and lakes. Rain gardens retain runoff before it can leave your yard and keep the pollutants in the

garden, where they can be absorbed into the soil. Rain gardens have the potential to soak up significantly more water than a regular lawn, improving the water quality in our rivers and lakes, replenishing our groundwater and reducing the chances for local flooding. They also happen to be beautiful and provide habitat for beneficial critters (birds, bees, butterflies, dragonflies, etc.).

## HOW DO I PLANT A RAIN GARDEN?

### COST

This can vary from no cost to the thousands. It's all up to you. You can do the work yourself (the design, digging, planting) and collect seeds or plants from others with established gardens, or you can hire a contractor to do the whole thing. Many professional landscapers and horticulturists are now in the business of designing and building rain gardens. But the thrifty person can create a fantastic garden as well. Most likely, if you do the work

yourself or with friends, your biggest expense will be purchasing plants. Native plugs usually run \$2–5 each. Plan on one plant per square foot of garden.

### LAYOUT DESIGN

This is the fun part! When designing, you'll need to consider where you will create your garden, what soil types you are working with, how big your garden should be and what species you'll plant. You can pretty much make your rain garden any shape that pleases you as long as it lends itself to the natural flow of the runoff. Sometimes a horseshoe shape works; in other settings a long, narrow garden between properties is best. Decide whether you want taller plants in the "back" or center of your garden. Choose a variety of colors of blooms or stick with a single color scheme. Make sure that you pick varieties that bloom at different times so that you'll have beautiful flowers throughout the season and that provide substantive vegetative cover to prevent erosion. It's helpful to sketch your design on paper first.

### Location, Location, Location

Rain gardens should be positioned to receive water from downspouts or at a

low-point in the lawn where drainage naturally occurs. Position your rain garden at least 10 feet from any foundation. It's a good idea to talk to your neighbor if your garden will be close to the property line. Call Digger's Hotline to make sure your rain garden will not be located over gas or water services.

### Soil Type

You'll need to know what soil type you have so that you know what plants will thrive and so you can ensure your rain garden is as efficient as possible. Sandy soils, for example, will drain more quickly while heavy clay enriched soils will retain moisture longer. Runoff should infiltrate within 4–6 hours. If you have standing water for longer than this, you may want to consider adding more organic matter or increasing the size of your garden. Check with the University of Wisconsin Cooperative Extension (608/224-3700) if you're not sure what soil type you are working with.

### Size

The size of your garden should depend on your goals and the area available to you. Generally, you'll want your rain garden to

be a third as big as the roof area that drains to it. If your primary goal is to replenish the groundwater, then you will want to dig a deeper, smaller garden. If the soil is sandy, you can get away with a smaller area, but if you have a lot of clay enriched soils, you'll need a larger area.

### Choosing Plants

Nursery professionals or garden clubs can help you choose plants best suited for your garden based on soil, hours of light and your design. Take your sketch with you when you go to purchase plants. Garden clubs often sell native species that are best adapted to our climate, will attract birds, native butterflies and dragonflies, and have root systems that facilitate infiltration and allow plants to survive several seasons of drought. Native plants require little maintenance once established. When choosing the kinds of natives you'll plant, take into account height, colors and when they'll bloom. A partial list of native plants is on the back of this brochure. For more information on native Wisconsin flora, go to the UW's Botany Department website [www.botany.wisc.edu](http://www.botany.wisc.edu) or the UW's Arboretum website <http://wiscinfo.doit.wisc.edu/arboretum/>.

### SITE PREP AND PLANTING

Once you have sketched your garden, decided on a location, size and plants, it's time to build your garden. Cut a string as long as the circumference of your garden. Lay it out in the shape of your garden to act as a guide when you dig. Don't forget that your downspout or sump pump outlet needs to be directed to this location. Dig down 4–18 inches, depending on your site needs. Depths of 4–8 inches should suffice if you don't want standing water. You can use the turf and soil that you've dug out to build up the berm on the downhill side of your garden. If you have heavy clay enriched soils, you will need to add some organic matter before planting. Make your job easier by drilling the planting holes using a bulb auger (available in garden stores), rather than just a hand trowel. Mulching right after planting helps to discourage weed growth and keeps moisture in the soil. Free wood chips are available for use as mulch from the City of Madison Streets Division. Chips can be picked up from mid-April through September. For more information, go to [www.ci.madison.wi.us/streets/brush.html](http://www.ci.madison.wi.us/streets/brush.html) or check with your local municipality to see if they have a mulch or wood chip program.

### MAINTENANCE

After planting, remember to mulch and then water every other day for the first two weeks or so until your plants get established. Weed as necessary. Leave the vegetation for the winter as it provides cover and food for birds. Cut off all the dead vegetation in the spring.

**RAIN GARDENS CAN HELP REPLENISH OUR DIMINISHING GROUNDWATER, AND PREVENT THOUSANDS OF GALLONS OF RUNOFF FROM REACHING OUR STREAMS, RIVERS AND LAKES.**



1. Soil is prepared for planting, note the berm (raised area of soil)
2. Plant plugs laid out where they will be planted
3. Plants in rain garden before mulching
4. Later in the season — with larger plants and mulch

**RAIN GARDENS ARE AESTHETICALLY PLEASING TO LOOK AT; PROVIDE HABITAT FOR BIRDS, BUTTERFLIES AND BENEFICIAL INSECTS (INCLUDING DRAGONFLIES THAT EAT MOSQUITOES!); AND BENEFIT WATER QUALITY.**

## **LAWN CARE TIPS**

- If there are areas of your yard you don't physically go to, consider landscaping that area with native plants instead of turf.
- If you have natural or "wild" areas on your property, think twice before deciding to convert them to turf or traditional landscaped areas. Natural areas usually require less time and money to maintain than formal landscapes, and are usually the best at preventing water pollution from runoff. This is especially important for waterfront property.
- Adjust your mower to a height of at least three inches or more.
- Mow frequently enough that you can leave grass clippings on the lawn and don't have to rake.
- Mulch bare soil as soon as possible to minimize erosion. Disturb no more ground than necessary for a project, while preserving existing vegetation.
- Use lawn and garden chemicals carefully and sparingly. Pesticides, including weed killers, should be considered a last resort – other controls come first.
- Help keep our lakes and rivers clean by sweeping or blowing grass clippings back onto your yard. Grass clippings can and should be left on the lawn, so that the nutrients can go back into the soil.



# Lawn Watering

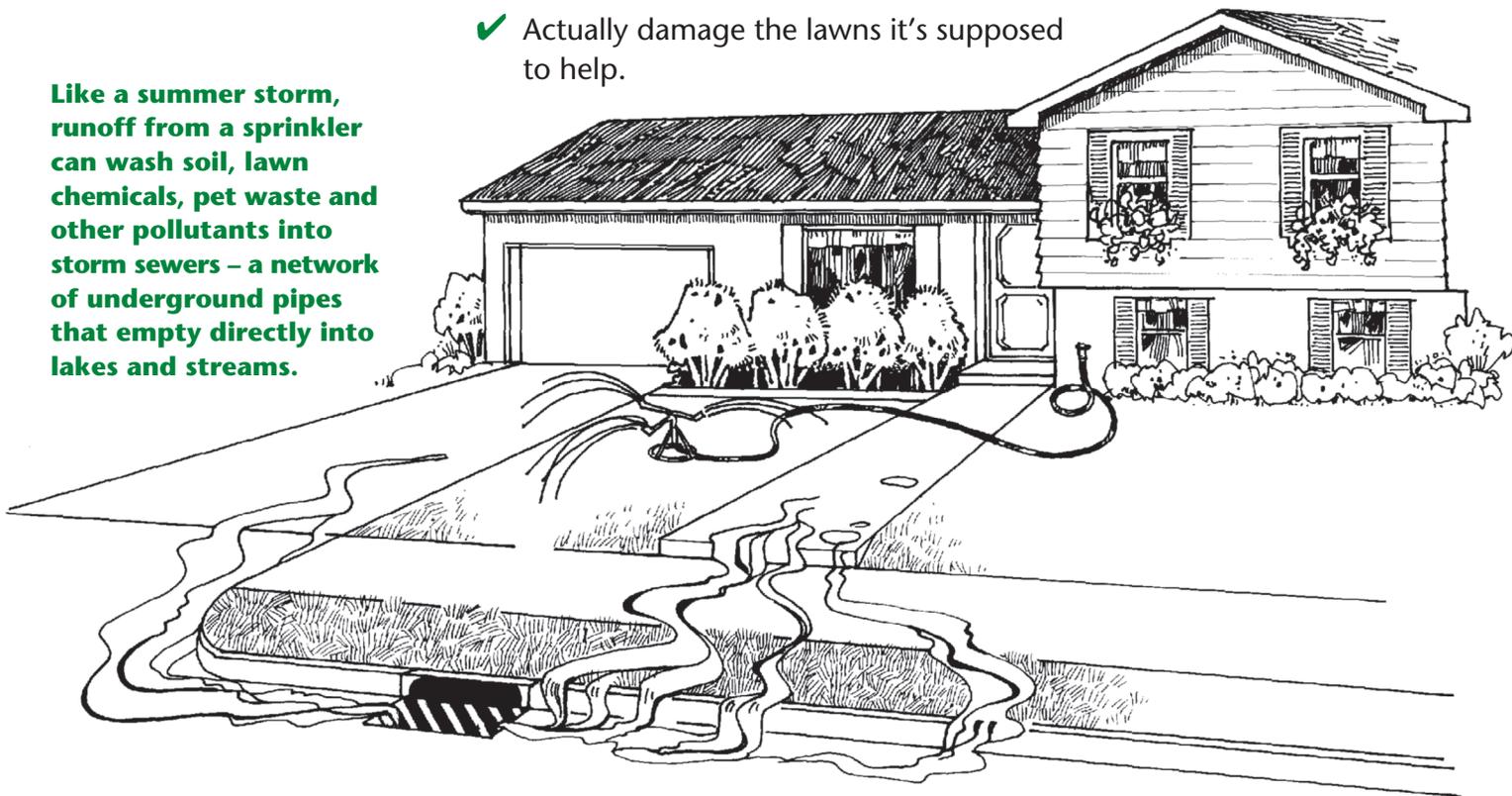
A SERIES OF WATER QUALITY FACT SHEETS FOR RESIDENTIAL AREAS

For decades, American cities and suburbs have grown and spread into the surrounding countryside. With this growth has come an unprecedented seeding and sodding of the landscape – literally millions of acres have been turned into bluegrass lawns. For many homeowners, the residential lawn is the symbol of a well-tended property.

Unfortunately, keeping the lawn emerald-green, barefoot-soft and dandelion-free requires a significant amount of attention, and can have serious impacts on lakes, streams and groundwater. Water from a sprinkler flowing down one driveway might not seem like a big problem. But careless watering on hundreds of lawns can:

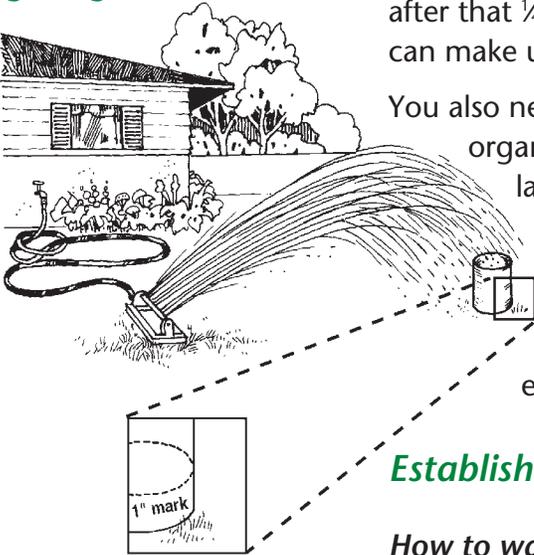
- ✓ Wash pollutants into lakes and streams.
- ✓ Deplete water supplies.
- ✓ Actually damage the lawns it's supposed to help.

**Like a summer storm, runoff from a sprinkler can wash soil, lawn chemicals, pet waste and other pollutants into storm sewers – a network of underground pipes that empty directly into lakes and streams.**



Because lawn watering can have far-reaching effects, there is growing interest among horticulturists, environmentalists, public utility managers and homeowners in how to water correctly. This publication offers practical lawn watering tips that will save water, help keep our lakes and streams clean, and produce healthy, attractive lawns.

**A container with a once-inch mark placed under your sprinkler will help gauge how much water your lawn is getting.**



A healthy lawn requires about one inch of water per week. As a general rule, apply the water all at once rather than in several light waterings. Before you water, do some arithmetic. If it just rained  $\frac{1}{4}$  inch, you probably only need to apply  $\frac{3}{4}$  inch with the sprinkler. Use common sense, however, and consider the weather forecast. If there is a good chance of rain soon after that  $\frac{1}{4}$ -inch rainfall, don't water at all. If the rain doesn't come, you can make up the difference.

You also need to know your lawn. For example, sandy soils with little organic matter will require more water, heavy clay soils less. Sloping lawns are normally drier than level, low-lying ones. Lawns under large trees, especially during cool weather, may need little or no watering. Avoid watering during the middle of the day when evaporation rates are highest and the water you use will do the least good. Early morning watering will minimize evaporation and help newly seeded areas through the day's heat.

### Established lawns

#### How to water

- It's best to water established lawns at the rate of one inch per week, applied all at one time to promote deep rooting. Frequent, light waterings favor shallow roots and plants unable to tolerate dry periods.
- Water early in the morning. If watering is done in the evening, grass stays wet all night, thus increasing risk of disease.

#### Keep in mind...

- Established, healthy lawns can survive several weeks of dormancy during summer with little or no water.
- Watering early in the morning puts less strain on public water supplies because the peak load is during evening.
- Excess water can keep the soil too moist, which damages roots.

### If you use sod instead of seed...

#### How to water

- ✓ Soak newly laid sod with one inch of water. Use a marked container to measure the amount applied.
- ✓ Water lightly every other day for two weeks after sodding. When grass is established, water according to the guidelines for established lawns.

#### Keep in mind...

- ✓ Excess water can drown sod in poorly drained areas, or cause erosion between or under pieces of sod on slopes.

### Newly seeded grass

#### How to water

- Mulch newly seeded areas with straw, marsh hay or lawn clippings to reduce evaporation from the soil surface.



- Light watering every other day is generally sufficient as long as the soil was moist at seeding time.
- Water less frequently when the grass reaches two inches high.

#### Keep in mind...

- Overwatering can wash away seeds, cause seeds to rot before they germinate, increase the chances of disease, or slow the growth of new grass.
- Grasses in Wisconsin lawns grow best in cool weather. Plant seed in spring (late April to mid-May) or fall (late August to mid-September) when it's cooler and more rain can be expected.
- When selecting seed, consider bluegrass and fescue mixes, which tend to be more drought-tolerant than ryegrasses.

### Let grass grow taller

- To promote deep rooting and lawns that tolerate dry conditions, mow grass no shorter than two inches.
- Taller grass shades the soil surface, thus reducing evaporation and sprouting of weed seeds.

### Use chemicals wisely

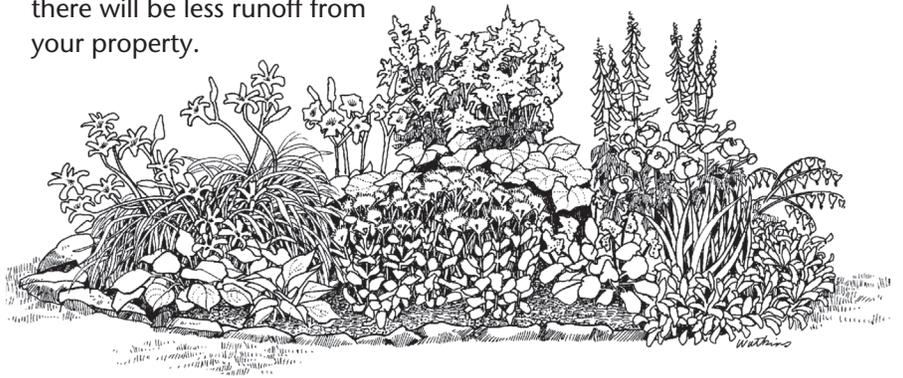
- Proper fertilizing promotes deep roots and drought tolerance. Improper fertilizing can have the opposite effect.
- Don't fertilize a dry lawn – high concentrations of nutrients tend to draw moisture out of grass.
- Control weeds to reduce competition for soil moisture. This may be done by hand, or with careful use of broad-leaf herbicides.

### Consider the weather

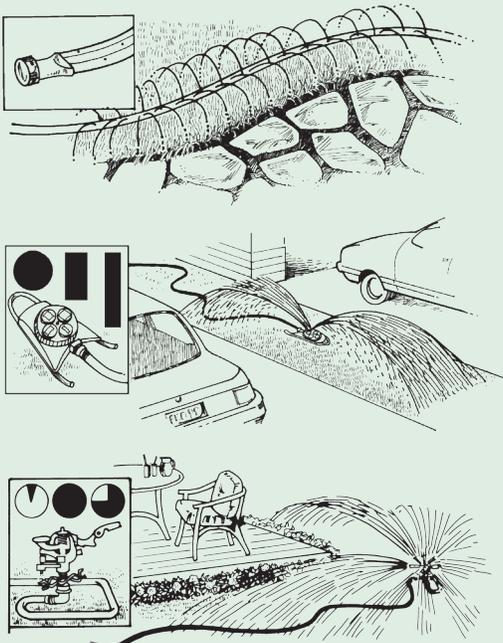
- Don't mow during the heat of day, especially when conditions are hot and dry; newly cut grass blades lose water quickly.
- Don't water if a one-inch rainstorm has occurred in the last week. Also, postpone watering if the forecast calls for rain in the next few days.

### Be creative

- Plan and establish a landscape that has less lawn and requires less water and maintenance. Consider plant groupings that include drought-tolerant species and organic mulches that help keep the soil moist.
- Direct downspouts away from foundations and driveways to planting beds and lawns where the water can soak in. Besides more efficient use of water, there will be less runoff from your property.



- Learn to live with temporary brown-outs. A few weeks of dormancy will not hurt the roots of a healthy lawn.



### Tips on sprinklers and efficient watering

Hardly anyone has a perfectly rectangular or circular lawn. Fortunately, there are many sprinkler types to deal with odd angles. (A few are shown here.) Over time, savings on your water bill will pay for the investment on several types. Other tips for efficient watering include:

- ✓ Consider a timed sprinkler, which automatically shuts off after a desired rate of application.
- ✓ Use a sprinkling can or hand-held hose to specifically target small areas where use of a sprinkler is wasteful.
- ✓ Aerate your lawn to improve water penetration and reduce runoff.
- ✓ Avoid using a conventional sprinkler on the strip of lawn between the sidewalk and street. Runoff from this area travels quickly and directly to the gutters and storm sewer. A soaker hose might be the best option.
- ✓ Don't forget to turn the sprinkler off! Forgetfulness can result in a trail of water flowing from your property.

**WE'VE ALL  
SEEN IT...**

**W**hile everyone recognizes that this is a waste of water, other problems caused by careless watering are harder to see. Water flowing down the gutter often carries soil, pet waste, lawn chemicals and other pollutants into storm sewers, which empty into nearby streams and lakes.



Sprinkler runoff makes a natural problem worse. While occasional midsummer rainstorms wash pollutants into lakes and streams, careless lawn watering can create a “rain-storm” every day throughout the summer. This additional runoff occurs during the hottest weather and low water conditions in streams and lakes – prime conditions for growth of nuisance algae and aquatic weeds.

**...that trail  
of water  
flowing in  
the gutter  
on a clear  
day.**

Water running off your yard can also erode soil from adjacent undeveloped lots, waterlog sensitive plants, or wash away fertilizers that have been recently applied to lawns and gardens. We can all help minimize these problems by following the common-sense tips in this fact sheet. The result will be healthier lawns and cleaner water.

### **Thinking things through**

In the end, lawn watering is probably governed more by one’s point of view than anything else.

For example, a dry lawn has a blue-green color and does not spring back when you walk on it (your footprints remain). A lawn during mid-summer dormancy is a brownish green. To some people, neither of the above is acceptable. However, except under extreme circumstances, even the natural brown-out does no harm. And no amount of mid-summer watering will allow our cool season grasses to look as good as they do during spring or fall. By September, in fact, lawns that were watered throughout the

summer generally look no better than lawns that weren’t. In other words, a naturally brown lawn in August is not a sign of neglect.

Those who want the green look throughout the summer can benefit from the lawn watering tips inside. Those who are inclined to simply wait out the seasonal changes can be confident that they’re not going to harm a healthy lawn.

Above all, heed the suggestions and restrictions of your local water utility during droughts. If you have a private well, don’t jeopardize neighborhood supplies by unnecessary watering.

This publication is available from county UW-Extension offices, Cooperative Extension Publications – 1-877-947-7827, and from DNR Service Centers.

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**GWQ012 Lawn Watering  
DNR WT-530-99  
R-09-99-10M-30-S**



# Leaf Management 101



## 1. Compost your leaves.

Mix leaves with other compostable items and spread it on your gardens next year.



## 2. Chop up leaves with your lawn mower.

Leaf fragments won't kill your grass, and this replaces one fertilizer application.



## 3. Use leaves as mulch for gardens.

Leaves provide nutrients and winter protection to your vegetable and flower gardens.

4. Keep the street clean.  
If you pile leaves for collection, don't put them in the gutter.



These simple steps will save you money while keeping our waterways free of nutrients that leach out of leaves as they break down. **Feed your lawns & gardens, not our lakes & rivers.**

# Love Your Lakes & Rivers Don't Leaf Them



[cleanwaterbrightfuture.org](http://cleanwaterbrightfuture.org)

[myfairlakes.com](http://myfairlakes.com)



## Keep leaves out of the street.

Show your love for the lakes by placing this in your window or pick up a yard sign through [myfairlakes.com](http://myfairlakes.com).

## Choices You Make This Fall Can Help Keep Area Waters Clean Next Summer-

### Keep Leaves Out of the Street

Red, gold, and orange leaves gently falling from trees; a true symbol that autumn has arrived here in Wisconsin. The choices we make with falling leaves today can impact the health of our land and water next summer. Nutrients released from decaying leaves are a great addition to lawns and gardens, but an unwelcome guest to area lakes and rivers. Leaves and yard debris in the street gets washed directly to lakes and streams via storm drains when it rains. Even if the leaves never move, rainwater running over and through them makes a nutrient-rich tea that's carried directly to the storm drains promoting algae growth. The good news is that together we can take simple actions to keep leaves and nutrients out of our waters.

- **Mulch-** Mulch leaves directly on the lawn. Shredded leaves act as a natural fertilizer returning nutrients to the lawns. If your lawn mower has a bagger, empty the chopped up leaves on gardens, flowerbeds or around trees and shrubs.
- **Compost-** Mix leaves with other compostable items and spread it on gardens next spring. It saves money and water, helps your gardens, and benefits the environment. For tips on how to start composting, visit <http://myfairlakes.com/yardAndGarden.aspx#compost>. If you don't have the room in your yard, take your leaves to the [Dane County compost site](#).
- **Rake-** If you rake, pile leaves on the terrace, not in the street. Covering the piles with a tarp is a good idea to prevent them from blowing around and reduce nutrients that can leach from them during a rain. Check with your municipality for pick up dates and other requirements so that your leaves are at the curb for as short a time as possible.

For more information on ways to "Love Your Lakes, Don't Leaf Them" visit:

[http://myfairlakes.com/fall\\_campaign.aspx](http://myfairlakes.com/fall_campaign.aspx) .

## LOVING YOUR LAKES AND STREAMS IS EASY

Your lakes are beautiful and provide fun activities like swimming, fishing, boating, water skiing, bird watching and more.

But Dane County lakes and streams need your help.



Whatever is in the street may end up in the nearest lake or stream after the next rain. Do your part by keeping the street in front of your house free of leaves and debris.



Because leaves account for a significant portion of the algae-feeding nutrients in your lakes and streams, we can all help reduce their impact.

## LEARN ABOUT THE LEAF COLLECTION PROGRAM IN YOUR MUNICIPALITY

- Call your municipality or go to their web site for information on leaf collection requirements and schedules.
- At [www.myfairlakes.com](http://www.myfairlakes.com) you can find links to your municipality by clicking on “Madison Area Municipal Storm Water Partnership.”
- Generally, leaves placed for pickup should be placed on the terrace between the sidewalk and the street.
- Wet the leaves down or put a tarp over them to stop them from blowing into the street.
- Bag your leaves if your terrace is very narrow (make sure your municipality allows bagging).
- Bags should contain only leaves and be open at the top for easy emptying.
- Raking leaves into the street is prohibited in most municipalities and could result in a fine. Street sweeping is not intended to pick up piles of leaves.



# Love Your Lakes, Don't Leaf Them.



What you do with  
your leaves matters.

Show you care for your  
lakes and streams by  
keeping leaves out of  
the street.

Learn about the leaf  
collection program in  
your municipality.

Compost your leaves to  
save time and money.

[myfairlakes.com](http://myfairlakes.com)

## WHAT YOU DO WITH YOUR LEAVES MATTERS

- Leaves contain nutrients that fertilize algae, which turn your lakes green in summer.
- When leaf piles sit in the street, wind and rain carry them to storm drains and eventually into lakes and streams.
- Rain seeps through leaf piles, making a rich “nutrient tea” that flows along the curb into the storm drains, even if the leaves themselves don’t move an inch!



 For more information about composting, go to [www.myfairlakes.com](http://www.myfairlakes.com).

## SAVE TIME, SAVE MONEY

- Skip municipal pick-up altogether and think of leaves as an asset.
- Whole leaves can be piled over wood mulch around trees and shrubs, where they will break down to a rich, dark color.



- Planting beds under trees reduce yard maintenance during the growing season and provide a natural place for fallen leaves.
- Create a natural landscape using native wildflowers, ferns, and grasses.



- Chop leaves into small pieces and leave in place; they’ll break down and provide free fertilizer to your lawn.
- Mulching leaves and grass can replace one fertilizer application each year, saving you time and money.



- Composted leaves make a great fertilizer and are a valuable mulch for gardens and for use around trees and shrubs.



# Leaf Management 101



## 1. Compost your leaves.

Mix leaves with other compostable items and spread it on your gardens next year.



## 2. Chop up leaves with your lawn mower.

Leaf fragments won't kill your grass, and this replaces one fertilizer application.



## 3. Use leaves as mulch for gardens.

Leaves provide nutrients and winter protection to your vegetable and flower gardens.



4. Keep drains clean.  
If you must pile leaves in the street for collection, keep them as far away from storm drains as possible.

These simple steps will save you money while keeping our waterways free of nutrients that leach out of leaves as they break down. Feed your lawns & gardens, not our lakes & rivers.

**Love Your Lakes &  
Rivers**

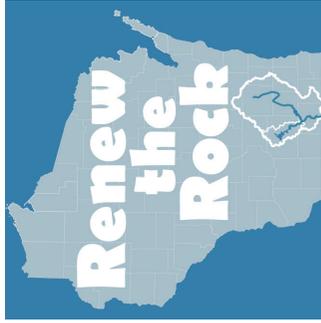


**Don't Leaf Them**



[renewtherock.com](http://renewtherock.com)

[myfairlakes.com](http://myfairlakes.com)



**Keep leaves out of the street.**

Show your love for your lakes and rivers by placing this in your window or pick up a yard sign through [myfairlakes.com](http://myfairlakes.com).

Love Your Lakes  
& Rivers  
Don't Leaf Them



Keep leaves out of the street.

Show your  
**Love** For Our  
Lakes & Rivers

**Stormwater is  
more  
than just  
water** Dirt, leaves, grease, & trash get washed into storm drains that carry these pollutants to the nearest lake or river.

Get Involved. Visit  
[myfairlakes.com](http://myfairlakes.com)



# 8 Great Things You Can Do

## 1. Use Your Leaves

Don't rake leaves to the street: compost them, rake them around your trees, or use a lawn mower to mulch them into your lawn. The leaves will provide nutrients to the soil as they break down.



## 2. Keep Gutters Clean

Keep all yard waste out of the street. Clean gutters can prevent localized flooding and prevents nutrients from getting into our lakes.



## 3. Test Your Soil

Most lawns don't require additional phosphorus, unless you are trying to establish a new lawn. Dane County bans phosphorus fertilizers unless a recent soil test indicates it is needed.



## To Show Your Love For Our Lakes & Rivers

## 4. Care for Your Car

Maintain your car: get leaks fixed & recycle batteries. Take used oil to a collection site. Wash your car on the lawn, not the driveway. Remember: anything that goes down a storm drain ends up in our lakes.



## 5. Direct Your Downspouts

Build a rain garden in your yard or install a rain barrel to capture stormwater before it leaves your property. Rain gardens infiltrate water, and rain barrels hold it for later use in your gardens.



## 6. Pick Up After Pets

Bury or double-bag pet waste. Don't put it in gardens or compost bins.



## 7. Prevent Erosion

Bare soil easily washes into the storm sewer. Seed & mulch bare spots in your yard as soon as possible. Cover piles of soil with a tarp until ready to use.



## 8. Get Salt Smart

Shovel first. Use salt sparingly. Read label for application rates and environmental impacts.



# Love Your Lakes, Don't Leaf Them.



clip and save

## Leafism #1

**What you do with your leaves affects your lakes.**

Leaves contain nutrients that fertilize algae, which can turn your lakes green. When leaf piles sit in the street, wind and rain carry them to storm drains and eventually into lakes and streams.

## Leafism #2

**Composting your leaves saves you time and money.**

Composted leaves make a great fertilizer and are a valuable mulch in vegetable gardens, flower beds and around trees.

## Leafism #3

**Your municipality has rules for leaf collection.**

If you opt to rake, follow your municipality's guidelines. Show you love your lakes by keeping leaves out of the street.

## Leafism #4

**Keeping your leaves out of the street shows you care for your lakes.**

Show your love by keeping leaves out of the street and proudly displaying a yard sign to show everyone that you care. Email [info@myfairlakes.com](mailto:info@myfairlakes.com) to get one today.

## Leafism #5

**What you do with your leaves affects your lakes.**

Rain seeping through leaf piles creates a nutrient-rich "tea" that flows along the curb and into the storm drains, even if the leaves themselves don't move an inch.

## Leafism #6

**Composting your leaves saves you time and money.**

You can replace one fertilizer application each year by using a mulching lawn mower and leaving the mulched leaves right on your lawn.

## Leafism #7

**Keeping your leaves out of the street shows you care for your lakes.**

Try composting just some of your leaves even if you have too many to compost them all. Think of fallen leaves as an asset instead of waste.

## Leafism #8

**What you do with your leaves affects your lakes.**

Leaves can feed plants in your garden or algae in the lakes depending on where you put them. Show you love the lakes by keeping leaves and grass clippings out of the street.

For more information go to [myfairlakes.com](http://myfairlakes.com)

To get a yard sign email [info@myfairlakes.com](mailto:info@myfairlakes.com)

# WHAT YOU DO WITH YOUR LEAVES MATTERS

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For more information  
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Love Your Lakes,  
& Rivers

Don't  Leaf Them



[myfairlakes.com](http://myfairlakes.com)

Keep leaves out of the street.



### **You Can Help Lakes and Streams during Winter**

It's very important to continue to pick up after your pet all year long, especially during winter. If you don't pick up pet waste right away, it can soon be encased in snow and ice, ready to be carried away with melt water when it warms up. Grassy areas that would normally allow water to soak in are frozen during winter, so they're more like a parking lot greatly increasing the surface area from which runoff flows. So, the bacteria and nutrients found in pet waste are much more likely to make their way to the nearest storm drain. And contrary to common belief, rain and melting snow that goes into storm drains does not go to the sewage treatment plant. Rather, it goes to the nearest lake or stream. So, be sure to continue to scoop the poop this winter and do your part to help keep lakes and streams free of pet waste. For more ideas on how you can help lakes and streams near you, go to [www.myfairlakes.com](http://www.myfairlakes.com).

## Rain Barrels: An Old Idea Made New Again

### Rain barrels help conserve water and make your plants happier.

**Residential irrigation can account for 40% of at-home water consumption in a city.** This can be a problem, particularly in summer when water shortages are most likely as the majority of outdoor water use occurs. Capturing rainwater from your roof top is a smart way to lower your water bill, help lakes, streams and rivers and lessen pressure on municipal water supplies.

**A rain barrel or cistern is collects rain from your rooftop.** The rain barrel is positioned under the downspout of a building to collect the rain that falls on that building's roof to be used later for lawn and garden watering or washing cars or windows—activities that would normally use tap water.

### Why use a rain barrel?

- Rain barrels help decrease groundwater demand during the hot summer months, which means less water needs to be pumped, treated to drinking water standards and then pumped to households. Less pumping also means less electricity (for pumping) is used during critical summer periods. And, of course, saves you money on your water bill.
- Rain water is "soft" water, free of chlorine, fluoride, lime and calcium. Plants prefer the pH of rain water.
- Municipalities save on operating costs when less water is used, and in the long run it saves a great deal on infrastructure costs as this translates to fewer new wells, pumping stations and treatment facilities need to be built.
- Just one quarter inch of rainfall runoff from the average roof will fill a 55-gallon barrel. Attach a hose to the spigot or put your watering can under the spigot to use the water wherever you want.
- Collecting and using rainwater helps our lakes and streams, because storm water would otherwise run off into the storm sewers, carrying with it pollutants such as oil, bacteria, nutrients and more directly to lakes and streams.
- When cities use less municipal water, the impact on the environment is reduced as well. Drawing water from an aquifer, lake or river faster than it is naturally regenerated can adversely affect every living creature in the area.

### Helpful Tips:

- If you don't have a model that uses a diverter, be sure to use a screen to keep mosquitoes, leaves and other debris out of the barrel and water.
- Use an overflow hose or other device to direct excess water away from house foundation when the barrel is full. Install a rain garden and direct overflow from your rain barrel and downspout to the rain garden.
- Monitor the barrel to ensure intakes and overflows aren't blocked and that it is not becoming a home for mosquitoes.
- Direct your home's downspouts to a grassy area away from your home's foundation if you don't have them directed to a rain barrel, rather than allowing storm water to flow to the street gutter.
- During the winter, make sure the rain barrel is drained and disconnected.

**Water stored in a rain barrel or cistern is not potable, and should not be used as drinking water.**

### Rain Barrel Resources

Rain barrels are usually about 40-60 gallons. You can purchase commercially made ones, but many local groups sell them. You can also make your own if you have a barrel. The simple parts are available at any hardware store.

# SALTING FOR SAFETY

It's understandable that you want to keep your home safe, especially when winter weather hits. Fortunately, there are ways you can improve your salt use and safety:

- Pre-treat walkways with a small amount of liquid deicer before the storm hits to prevent snow and ice from building up. Dissolve salt in warm water until salt no longer dissolves (or take some from your water softener brine tank), and apply it with a watering can. [Learn how to make a brine](#). Or dissolve salt in warm water until the salt no longer dissolves (or take some from your water softener tank) and apply with a watering can.
- Clear walkways and other areas before the snow turns to ice. The more snow you remove manually, the less salt you will have to use and the more effective it will be.
- Only use deicers in critical areas and apply the least amount necessary. Use less than four pounds of salt per 1,000 square feet (an average parking space is about 150 square feet), or, as a general rule, just use less salt than you did last year. One twelve-ounce container is sufficient to salt sixty to seventy feet of sidewalk.

Here are some more helpful hints:

# SALTING FOR SAFETY

- At temperatures below 15 ° Fahrenheit, salt becomes ineffective. Consider using sand instead for traction.
- Buy the right product for deicing. Look at product labels for specific ingredients + temperature ranges.
- Store ice melting products in airtight containers to maintain maximum effectiveness.
- Watch a homeowner tips video.
- Educate yourself through online resources. See the links below
- Read and pass along WI Salt Wise brochures.
- When your pet comes in from being outside, wipe his or her paws and underside to prevent the salt from hurting their skin.
- Wear boots or shoes with good traction so you can walk safely to your destination.



**Our current practices are not sustainable;** our wetlands, streams and ponds have already reached toxic levels. Road salt has been used as a deicer on streets in the Dane County region since the late 1950s, and over the last 50 years, average lake water concentrations have steadily increased — in Lake Mendota, salt concentrations increase about 1 mg/L each year. If that rate continues, the waters will eventually taste salty and exceed toxic concentrations for aquatic life.

Brought to you by the WI Salt Wise  
Partnership:

[Dane County](#), [City of Madison](#), [Madison Metropolitan Sewerage District](#), [Madison Water Utility](#)

# SALTING FOR SAFETY

Public Health Madison Dane County, UW-Madison Department of Environment, Health & Safety, MAMSWaP



Wisconsin Salt Wise Partnership · 1610 Moorland Rd, Madison, WI 53713 · Ph. 608.222.1201 · Fx. 608.222.2703 ·

E. kathy1@madsewer.org

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# SALTING GOES BEYOND THE PAVEMENT

Wisconsin is known for its brutal and unforgiving winters, so residents take extra steps to make sure we're safe throughout winter storms. This includes using salt to deice the walking and driving surfaces at our homes and businesses. But what you may not know is that using this salt is harmful to our environment and our waters and puts our loved ones at risk.



Taking  
on Winter  
Without  
Taking  
Down



Our  
Environment



# Homeowners

## More Salt, More Risk

Using more salt doesn't make your sidewalks safer — it harms plants and animals, pollutes our water, damages buildings and corrodes vehicles, roads and bridges. Once you put it down, salt doesn't go away. Instead, it travels into our lakes and streams, putting our aquatic life at risk and endangering our freshwater resources. Salt also alters the composition of soil, slows plant growth and weakens the concrete, brick and stone that make up your home and garage. Using the right amount of salt maximizes your family's safety. Using 10 pounds less salt this season will protect over 3,000 gallons of water from being permanently polluted. Be WI Salt Wise!



## Salting for Safety

It's understandable that you want to keep your home safe, especially when a winter storm hits. Fortunately, there are ways you can improve your salt use and safety:

- **Pre-treat walkways** with a small amount of liquid deicer before the storm hits to prevent snow and ice from building up. Dissolve salt in warm water until salt no longer dissolves (or take some from your water softener tank) to create a brine, and apply it with a watering can.
- **Clear walkways** and other areas before the snow turns to ice. The more snow you remove manually, the less salt you will have to use and the more effective it will be.
- **Only use deicers in critical areas** and apply the least amount necessary. Use less than four pounds of salt per 1,000 square feet (an average parking space is about 150 square feet), or, **as a general rule, just use less salt than you did last year.** One twelve-ounce container (like a coffee cup) is sufficient to salt sixty to seventy feet of sidewalk.
- If there are leftover crystals still visible after salting, you can **sweep the excess up to be reused** and try to use less next time.
- At temperatures below 15 degrees Fahrenheit, salt becomes less effective. **Consider using sand instead for traction.**
- **Use the right product.** Look at product labels for specific ingredients:
  - **Sodium chloride:** Sodium chloride is commonly known as rock salt and is the least expensive deicer product. It's also hard on the environment and not very effective at pavement temperatures less than 15°F.
  - **Calcium chloride:** This compound is effective at temperatures down to -20°F and is less harmful to vegetation.
  - **Calcium magnesium acetate:** This salt-free product works down to 20°F and is safer for vegetation and concrete surfaces.
  - **Sand:** Sand provides traction at any temperature, but it should not be mixed with deicers.
- **Store ice melting products** in airtight containers to maintain maximum effectiveness.
- When your pet comes in from being outside, **wipe his or her paws and underside.**
- **Wear boots or shoes with good traction** so you can walk safely to your destination.
- **Watch a homeowner tips video** by visiting [www.youtube.com/watch?v=qc8Y-\\_Nmfmo](http://www.youtube.com/watch?v=qc8Y-_Nmfmo).
- **Read and pass along WI Salt Wise brochures.**
- **If you are responsible for snow and ice removal** somewhere other than your home, please check out our training and resources tab by visiting [wisaltwise.com](http://wisaltwise.com).

## Hiring an Applicator/Snow Removal Service

- Discuss expectations with your applicator. Let them know you are WI Salt Wise!
- Many local applicators have been trained in winter maintenance practices that reduce environmental impact. Assess their awareness.
- Mechanical removal (shovel/plow) is more effective and safer than excessive application, so confirm their procedures and make sure they're using mechanical means first.
- The right amount of deicing chemicals (one to four pounds per 1000 square feet) can be effective for ice. Determine what equipment they use and how they calibrate it.
- Deicing chemicals work differently with different pavement temperatures and weather forecasts — discuss their protocols.
- Communication can protect your surfaces, wallet and water. Alert your applicator when too much salt has been applied.

**Small steps equal a big payoff for our environment.**  
**To discover more ways you can help Wisconsin, visit [wisaltwise.com](http://wisaltwise.com).**

**Brought to you by the WI Salt Wise Partnership:**



Madison Metropolitan  
Sewerage District



Public Health  
MADISON & DANE COUNTY  
Healthy people. Healthy places.

ENVIRONMENT, HEALTH  
AND SAFETY DEPARTMENT  
University of Wisconsin-Madison





- Home
- Boards, Commissions & Committees
- Budgeting for Outcomes
- Minutes & Agendas
- City Calendars
- Mayor & City Council
- Departments**
- Redevelopment Authority
- Economic Development
- Donations
- Municipal Court
- Contact Us
- News
- Employment Opportunities
- Site Map
- Tower Times
- Food Pantry
- Youth Center

- In Planning & Development:**
- Planning & Development Home
  - Williams Drive Reconstruction Project
  - Kettle Park West Development Information
  - Kwik Trip Project - Kettle Park West
  - Walmart SuperCenter
  - City of Stoughton Ordinances
  - Applications and Information
  - LANDMARKS INFORMATION
  - Comprehensive Plan
  - Stormwater Utility
  - Storm Water Management
  - Building Inspection

## Storm Water Management in Stoughton



Storm water affects each of us in different ways. Water quality and flood damage protection are key issues to evaluate when creating Stoughton's strategy for storm water management. Stoughton operates under a WPDES Permit issued by the Wisconsin Department of Natural Resources.

Review the various resources to see how you can make a difference.

[My Fair Lakes](#) - Information on how to help Dane County area lakes and streams

[Dane Waters](#) - Learn how to improve Dane County's water resources by reducing negative impacts of storm water from urban areas in this video entitled "Dane Waters, A Reflection of Us All"

[Hazardous substance spills](#) - Wisconsin DNR outline for spill reporting requirements

- [SHOULD YOU CHOP DOWN ALL YOUR TREES?](#)
- [LEAF MANAGEMENT 101](#)
- [LOVE YOUR LAKES LEAF MANAGEMENT TIPS](#)
- [LOVE YOUR LAKES DON'T LEAF THEM](#)
- [KEEP LEAVES OUT OF LAKES AND RIVERS](#)
- [8 WAYS TO LOVE YOUR LAKES](#)
- [STORMWATER INFORMATION & EDUCATION PROGRAM](#)
- [WPDES PERMIT - STOUGHTON](#) The WPDES permit authorizes and regulates the discharge of stormwater from the City of Stoughton's storm sewer system to waters of the State, as required by ch. NR 216. Wis. Adm. Code. The City obtained this permit in 2006.
- [EPA FACT SHEET ON ILLICIT DISCHARGE](#) Illicit discharge is any discharge to the City's storm sewer system that is not composed entirely of storm water, except for discharges allowed under a WPDES permit or other discharges allowed locally. As a result of these illicit connections, contaminated wastewater enters into storm drains or directly into local water ways without receiving treatment from a wastewater treatment plant.
- [2014 ANNUAL STORMWATER REPORT](#)
- [2013 ANNUAL STORMWATER REPORT](#)
- [2012 ANNUAL STORMWATER REPORT](#)
- [2011 ANNUAL STORMWATER REPORT](#)
- [2010 ANNUAL STORMWATER REPORT](#)
- [2009 ANNUAL STORMWATER REPORT](#)
- [2008 ANNUAL STORMWATER REPORT](#)
- [2006 & 2007 ANNUAL STORMWATER REPORT](#)

- [Zoning Administration](#)
- [Planning Maps](#)
- [Railroad Corridor  
Redevelopment Plan](#)
- [Future Urban Development  
Areas \(FUDA\)](#)
- [Walmart Supercenter SIP  
Amendment July 2015](#)

 [STORM SEWER SYSTEM MAP](#)

**MORE INFORMATION ON KEEPING AREA WATERS CLEAN**



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## **SPRINGTIME BRINGS MORE THAN FLOWERS WITH THOSE SHOWERS**

While this winter feels as though it will never end, eventually, the snow and ice will melt and there will be spring showers. The rain and snow melt flows across streets, driveways, parking lots and rooftops and transports sand, salt, last fall's leaves, oil, trash and many other pollutants directly to storm drains, which eventually ends up in our lakes and streams.

Some mistakenly think that water running off streets goes into a sewage treatment plant. But the truth is that it goes right to our lakes and streams.

### **You Can Help**

There are many things each of us can do to prevent storm water pollution.

- 9 Use salt sparingly during the winter.
- 9 Sweep up any excess salt or sand left over from the snow shoveling season.
- 9 Clean up pet waste year round—bury it properly or put it in the garbage.
- 9 Keep cars well maintained repairing leaks; but consider walking, public transportation or riding a bike whenever you can.
- 9 Direct rainwater away from paved areas to lawns or gardens where it can soak in.
- 9 Keep leaves and grass clippings out of the street. Compost yard waste, debris and leaves.
- 9 Get a soil test before applying fertilizer to your lawn. Don't pay for something you don't need. If a test shows that your lawn does need fertilizer, apply it according to directions and carefully clean up any spills on paved surfaces.
- 9 Wash your car on the lawn or at a car wash that sends its used water to the sewage treatment plant.
- 9 Prevent soil erosion.
- 9 Don't let anything but rain go down the storm drain or into the ditch.



Go to [www.myfairlakes.com](http://www.myfairlakes.com) for more ideas on how you can help our lakes and streams.

## **TREES AND WATER POLLUTION**

Oak, maple, hickory, ash, apple and more. They provide shelter and food, not just for us but critters, too. They give us warmth from a fire, are a jungle gym for the kids and give us cool shade from the sun with all those leaves—all those leaves! Yup, lots and lots of leaves, every year, falling in your yard. What do leaves have to do with the water quality of Dane County's lakes and streams? A lot.

### **Storm Drains and Ditches Drain Directly Into Our Lakes and Streams**

Contrary to what many people believe, the water that goes into the storm drainage system, including ditches, is **not** treated at wastewater treatment plants. Rather, it drains **directly** into our lakes and streams. Some communities don't have a storm drainage system made up of inlets and pipes, rather, runoff flows into ditches, but that runoff isn't treated either. And most folks don't realize that leaves can be a nagging source of local water pollution.

In autumn, leaves make their way into our lakes and streams when rain washes them down the storm drains and ditches. Once they get into the water, the leaves release nutrients that contribute to the accelerated growth of algae. The result is a greenish-tinted lake choked with foul smelling, dying algae that can kill fish and other aquatic critters and generally make water recreation an unpleasant experience.

### **Keep Leaves Out of the Street and Gutter and Ditches, Too**

While they are natural, and seem biodegradable and harmless, excess leaves pose a threat to the quality of water in our lakes and streams. So this autumn, when the leaves blanket your yard, follow these guidelines and leave the leaves out of the water by keeping them out of the street and gutter or ditch. Whatever goes into the gutter or ditch will eventually go into our lakes and streams.



*This fall, consider mulching or composting. If you rake, make sure the leaves stay out of the gutters and ditches.*

#### **Compost**

Adding leaves to a compost pile creates an inexpensive and nutrient-rich fertilizer for your vegetable and flower gardens. In our urban environment, composting allows us to imitate and reap the rewards of the natural recycling process. Check out <http://clean-water.uwex.edu/pubs/stewards/Y013.pdf> for more information on composting. Contact your local municipality for rules and instructions.

#### **Till**

Leaves can be tilled directly into a garden, contributing valuable organic matter.

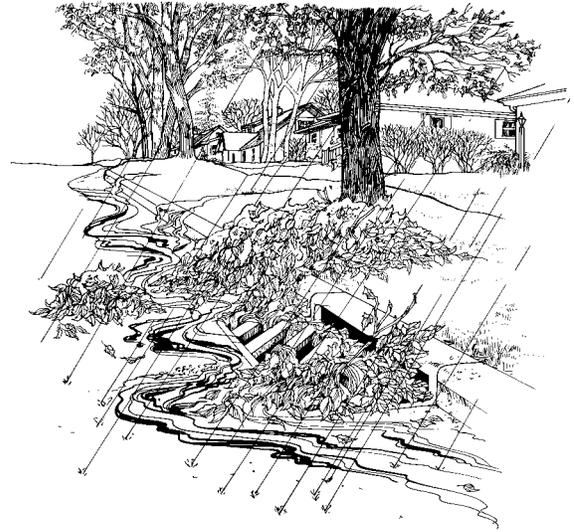
#### **Mulch**

If you have a mulching mower, you can chop the leaves into small particles that will decompose directly into your lawn. If you have a bagger on your mulching mower, you can use the leaves to mulch flowerbeds and shrubs.

## Rake

Many of us rake the leaves for curbside pickup. If you do, collect the leaves at the edge of the curb—not in the gutter or ditch. Make sure to sweep or rake any leaves out of the street, gutter or ditch. Cover the leaves with a tarp or bag them until the day when work crews pick up the leaves. Contact your local municipality for the leaf collection dates and requirements (bagging, covered on curb, etc.) for your neighborhood.

Some communities still allow you to burn leaves. Keep in mind, however, that ashes are a source of highly concentrated nutrients. Runoff can carry the ashes in the nearest pond, stream or lake. So if you're allowed to burn, don't burn in a ditch or other area where storm water could carry the ashes to a lake or stream. Some people use ashes in their garden.



*These leaves will be washed to the nearest lake or stream. The solution is simple: to keep it out of the lakes and streams, you've got to keep it out of the gutter and ditches.*

Inevitably, some leaves will get into the water regardless of what we do to stop them, but we can prevent most of the pollution by following these simple water-friendly practices.

## **You're the Solution, From Trees to Lakes**

You probably don't realize it, but you live on "waterfront property." In fact, most everyone in Dane County lives on a lake or stream when it comes to storm water runoff. That's because the distance between your yard and the water's edge is as close as the nearest storm drain or ditch. So, the simplest way that you can help clean the lakes is to keep the leaves out of the gutter or ditch.

In wooded areas and grassy fields, rainwater and melting snow soak into the ground, as nature intended. Leaves generally decompose where they fall. But in urban areas, these "pervious" surfaces have been paved over so that rainwater gushes down our sidewalks and roads, delivering the leaves along with dirt, oil, fertilizers, grass clippings, garbage and more from the streets and gutters into the storm drainage system, including ditches, and eventually our lakes and streams.

So, a big source of water pollution today actually comes from you and me. Individually, we contribute little pollution. Collectively, our urban households are damaging Dane County's lakes and streams through simple neglect and lack of awareness.

**The solution is simple:  
to keep it out of the lakes and streams,  
you've got to keep it out of the gutter and ditches.**

# MADISON AREA MUNICIPAL STORM WATER PARTNERSHIP 2015 ANNUAL INFORMATION AND EDUCATION WORK PLAN

DISTRIBUTED TO PARTNERSHIP MEMBERS ON DECEMBER 1, 2014

The Madison Area Municipal Storm Water Partnership (MAMSWaP), under the auspices of a five-year memorandum of understanding through 2018, currently consists of 21 entities that have agreed to jointly implement storm water outreach to reduce negative storm water impacts. Members include the cities of Fitchburg, Madison, Monona, Middleton, Stoughton, Sun Prairie and Verona; the villages of Cottage Grove, DeForest, Maple Bluff, McFarland, Shorewood Hills and Waunakee; and the towns of Burke, Blooming Grove, Madison, Middleton, Westport and Windsor; Dane County and the University of Wisconsin–Madison.

The MAMSWaP Information and Education (I&E) Committee assists the Dane County Storm Water Education Coordinator (SWEC) with development and implementation of projects and plans. Regular participation on the I&E Committee has included representatives from the cities of Fitchburg, Madison, and Stoughton, Dane County and UW Madison. The I&E Committee is pleased that the Village of McFarland and Town of Westport will send representatives to the Committee in 2015, resulting in a full complement of representatives from each level of government and entity represented in the MAMSWaP group.

The MAMSWaP Annual I&E Work Plan seeks to meet or exceed the minimum requirements and elements outlined in the current WPDES Permit Number WI-S058416-3 (effective July 1, 2009 – June 30, 2014 and continuing until permit re-issuance); WPDES Permit Number WI-S050075-2 (May 1, 2014 – April 30, 2019) for the Village of Cottage Grove and City of Stoughton) by developing and implementing a coordinated, regional outreach effort using consistent messages among and between communities to reduce the quantity and improve the quality of urban storm water runoff and identify and eliminate illicit discharges. Numbered items are the specific elements from the permit language. Language for elements C(1)(b)(6) and (7) has been updated to reflected permit reissuance language anticipated by Wisconsin Department of Natural Resources staff. Points below each element are the action items for 2015.

**C.(1)(b)(1). Promote detection and elimination of illicit discharges and water quality impacts associated with such discharges from municipal separate storm sewer systems.**

- Develop and distribute articles and brochures to municipalities, friends groups, community groups and neighborhood association newsletters regarding illicit discharges.
- Develop and distribute simple written materials to help the public understand illicit discharge prevention and control, in cooperation with Public Health—Madison-Dane County. Use materials as part of a broader outreach focus using multiple methods.

**C.(1)(b)(2). Inform and educate the public about the proper management of materials that may cause storm water pollution from sources including automobiles, pet waste, household hazardous waste and household practices.**

- Develop environmental action list (storm drain marking, leaf management, rain garden installation, lake and stream clean up, etc.) with specific tasks for citizens, groups and others to implement.
- Seek existing BMP and other technical educational videos to demonstrate ways to minimize storm water impacts, and link to videos available on YouTube from myfairlakes.com.

- Collaborate with external partners to offer an impervious surface workshop for municipal staff, and a related campaign for the public.
- Develop and distribute articles focusing on “green developments” in central Dane County and how stormwater is managed at these sites. Develop and promote self-guided tours of some of the public sites to share these case studies, and make special efforts to reach new audiences for this material.

**C.(1)(b)(3). Promote existing City of Madison Google map of all rain barrel/rain garden locations, and direct people to public property locations of these water management features.**

- Promote beneficial onsite reuse of leaves and grass clippings and proper use of lawn and garden fertilizers and pesticides.
- Continue to implement the Love Your Lakes and Rivers, Don't Leaf Them Program.
- Continue to implement the Plant Dane Program.
- Monitor leaf campaigns by other organizations include the Clean Lakes Alliance; monitor USGS/City of Madison/Dane County leaf research; share information about both as appropriate.

**C.(1)(b)(4). Promote the management of streambanks and shorelines by riparian landowners to minimize erosion and restore and enhance the ecological value of waterways.**

- Continue to implement the Plant Dane Program.
- Develop a streambank and shoreland restoration demonstration program with related training workshops for riparian landowners. Promote programs through riparian organization communications.

**C.(1)(b)(5). Promote infiltration of residential storm water runoff from rooftop downspouts, driveways and sidewalks.**

- Continue to implement the Plant Dane Program.
- Continue to promote rain barrels, including many options for purchase and installation.
- Coordinate with impervious surface action items from C(1)(b)2.

**C.(1)(b)(6). Inform and where appropriate educate those responsible for the design, installation and maintenance of construction site erosion control practices and storm water management facilities on how to design, install and maintain the practices.**

- Publicize trainings for contractors, inspectors and staff, highlighting incentives for participation (including certification).
- Publicize the Dane County Erosion Control and Stormwater Management Manual.
- Promote the Wisconsin Chapter of the North American Stormwater and Erosion Control Association's events.
- Develop and offer local training for all MAMSWaP members, so that those not able to attend NASECA training can benefit.

**C.(1)(b)(7). Identify businesses and activities that may pose a storm water contamination concern, and where appropriate, educate specific audiences on methods of storm water pollution prevention.**

- Distribute letters and articles to businesses and associated groups.
- Promote the Wisconsin Chapter of the North American Stormwater and Erosion Control Association's events.

**C.(1)(b)(8). Promote environmentally sensitive land development designs by developers and designers.**

- Promote the Wisconsin Chapter of the North American Stormwater and Erosion Control Association's events.
- Develop and distribute articles focusing on "green developments" in central Dane County and how stormwater is managed at these sites. Develop and promote self-guided tours of some of the public sites to share these case studies, and make special efforts to reach new audiences for this material.
- Promote local lectures and topics that could benefit developers and designers.
- Promote participation in Wisconsin Water Star webinars focused on stormwater management, and advocate to organizers that stormwater topics continue to be included.

## **Municipal Responsibilities**

It is not enough for municipalities to merely be an actively paying contributor to the Partnership. There are specific actions each municipality must do. For example, while MAMSWaP has created a useful website, each municipality needs to link to [www.myfairlakes.com](http://www.myfairlakes.com). Other examples include:

- using the articles and other information developed for municipalities in municipal newsletters or utility bill inserts,
- using displays developed for municipalities,
- providing information on municipal web sites,
- issuing press releases to local newspapers, and
- implementing storm drain marking programs.

Municipalities must document in their reports to DNR how they have used the materials developed by the I&E Committee.

## **Ongoing Tasks**

The following actions are completed and/or implemented annually by the SWEC and consume a considerable amount of the half-time hours available.

1. Quarterly reporting to member municipalities.
2. Biennial reporting to DNR.
3. Bill municipalities and track payments.
4. Develop annual work plan.
5. Update/maintain website. Add significant new material in 2015 (using suggestions provided by I&E Committee members). Monitor analytics and try to boost hits and time on site.
6. Continue salt/deicing education materials and program.
7. Continue to work with the Earth Gauge Partnership.
8. Continue to promote NASECA events.
9. Develop and distribute articles to municipalities, friends groups, community groups and neighborhood association newsletters.
10. Develop/provide presentations (PowerPoint, slides, overheads, etc.) focused on audience interests/concerns.
11. Continue maintenance and use of existing list serves and distribution lists to disseminate info.
12. Continue providing organizations and community groups' assistance and collaborating with projects (presentations, displays etc. for communities).
13. Continue promoting storm drain stenciling and marking programs.
14. Promoting the storm water curriculum developed for MAMSWaP.
15. Maintain distribution lists.

16. Publicize training for building inspectors, contractors and staff.
17. Publicize availability of the Dane County Erosion Control and Stormwater Management Manual.
18. Promote and distribute DVD and CD.
19. Promote use of Enviroscape model including finding instructional how-to video for potential demonstrators.
20. Continue to coordinate outreach with the Rock River Stormwater Group.
21. Coordinate efforts with MMSD as appropriate regarding the adaptive management pilot project in the Yahara Watershed.

## **Acknowledgments**

The Madison Area Municipal Storm Water Partnership's 2015 Annual Information and Education Work Plan was developed by the MAMSWaP I&E Committee. Committee member expertise, input and municipal cooperation was crucial for plan development and will continue to play an integral role in addressing storm water runoff in Dane County. Thank you to everyone who helped.

### **I & E Committee Members Contributing to the 2015 Annual I & E Work Plan**

Jeremy Balousek, Dane County Land and Water Resources Department

Rick Eilertson, City of Fitchburg

Mindy Habecker, Dane County – UW Extension

Sue Jones, Dane County Land and Water Resources Department

Kathy Lake, Madison Metropolitan Sewerage District

Kim McCutcheon, Wisconsin Department of Natural Resources

Rodney Scheel, City of Stoughton

Marisa Trapp, UW–Madison

Tom Wilson, Town of Westport

For more information, visit [www.myfairlakes.com](http://www.myfairlakes.com) or contact the Dane County Storm Water Education Coordinator (SWEC) at 608-224-3747 or [info@myfairlakes.com](mailto:info@myfairlakes.com).