

# Rochester Community Schools Stormwater Management Portal

\*Click [HERE](#) for the ADA Compliant Webpage

## Why worry about Stormwater?



### Rochester Community Schools

[Why worry about Stormwater?](#)

[What are we doing about the Problem?](#)

[The Clinton River Watershed](#)

[CRWC Collaboration Links](#)

[Total Maximum Daily Load \(TMDL\)](#)

[Pollutants & Illicit Discharges](#)

[Sewer Overflows and Septic Systems](#)

[Riparian Zone Management](#)

[Why use Native Plants?](#)

[Household Hazardous Waste](#)

[SEMCOG "Seven Simple Steps"](#)

### What is the problem with stormwater?

Many people may not realize that stormwater collected in drains located on their street curbs does not flow to their local water treatment plant. Rather, this water remains untreated and is discharged directly into the waterways. During this journey to the waterways, stormwater collects and carries a broad range of pollutants. Stormwater is a nonpoint source of pollution thus making it extremely difficult to address and the single greatest threat to our water quality and watershed health. Non-point source pollution comes from many diffuse runoff sources such as rainfall and snowmelt, flowing over and through the ground, picking up pollutants as it goes.

### Why worry about stormwater?

When we think of water pollution, many of us may imagine chemicals being dumped or discharged directly into our waters. As a result of the Clean Water Act and other environmental legislation, such acts of pollution-considered "point source" pollution has been eradicated and/or stringently regulated. Even with the unquestioned success in addressing point source pollution, more than 40 percent of our nation's waters fail to meet designated quality standards for recreation and drinking. Surprisingly, the single greatest threat to our water quality and watershed health nationwide is stormwater and "nonpoint source" pollution. Nonpoint source pollution comes from runoff such as rainfall and snowmelt, flowing over and through the ground, picking up pollutants as it goes. Some of these pollutants occur naturally, such as nutrients from sediments, manure, or pet wastes. Other pollutants, such as fertilizers, automotive grease, and oil, occur from our interaction with the environment. Stormwater acts as a carrier of nonpoint source pollution and therefore is considered a major cause of water quality problems both in Michigan and nationwide.

### What impact can one individual have?

Since there are widespread and diverse sources of stormwater pollution, the only way it will be successfully addressed is through the collective efforts of each and every individual. Additionally, Michigan's regulatory and enforcement arrangement is dependent upon the effort of individuals, in both pollution prevention and reporting of violations. Individual effort is critical. One way you can contribute to the solution is by educating yourself about the problem. Exploring the district's stormwater management website is a good start.

### What role does the district play in stormwater management?

The district implemented a Stormwater Management Plan (SWMP) to reduce the discharge of pollutants from their Municipal Separate Storm Sewer System (MS4) to the Maximum Extent Practicable and protect water quality in accordance with the appropriate water quality requirements of Michigan Act 451, Public Acts of 1994, Part 31, and the Federal Water Pollution Control Act and the district National Pollutant Discharge Elimination Permit (NPDES).

### Comment on the SWMP

#### By Contact Form:

[Click Here](#)

#### By Phone:

(248) 726-3000

#### By Mail:

Attention: Stormwater Program Manager  
52585 Dequindre Road  
Rochester Hills, MI 48307

### Stormwater Program Websites



Environmental Protection  
Agency - Storm Water  
Program



Michigan Department of  
Environment, Great Lakes,  
and Energy - Stormwater  
Program



Watch our Stormwater  
Management video  
[Click Here!](#)



Please take our  
Watershed Survey  
[Click Here](#)



Environmental News  
& Information @  
Clean Water Chronicles

# Rochester Community Schools Stormwater Management Portal

\*Click [HERE](#) for the ADA Compliant Webpage

## What are we doing about the problem?



### Rochester Community Schools

- [Why worry about Stormwater?](#)
- [What are we doing about the Problem?](#)
- [The Clinton River Watershed](#)
- [CRWC Collaboration Links](#)
- [Total Maximum Daily Load \(TMDL\)](#)
- [Pollutants & Illicit Discharges](#)
- [Sewer Overflows and Septic Systems](#)
- [Riparian Zone Management](#)
- [Why use Native Plants?](#)
- [Household Hazardous Waste](#)
- [SEMCOG "Seven Simple Steps"](#)

### A Brief History

Historical industrialization and urbanization during the 20th century resulted in unanticipated problems related to water quality in the nation's watersheds. In response to increased water quality issues, the first federal legislation was passed in 1948 as the Federal Water Pollution Control Act. This was updated and expanded in 1972 as the Clean Water Act. Later amendments led to the implementation of pollution controls for waste water plants and industry as well as water quality standards for all surface waters.

The NPDES under the Clean Water Act essentially made it illegal to discharge pollutants directly into waterways without obtaining a permit. This program was an overwhelming success in addressing point source pollution in our watersheds. However, it did not address the much larger and difficult problem of nonpoint source pollution. One of the first nationwide efforts to clean up and restore a river or watershed was locally focused on the Rouge River in Michigan.

### The Rouge River and Stormwater Permitting

The Rouge River has a historic place in our understanding of both point source pollution and stormwater pollution nationwide. As a result, it has been at the forefront of efforts to manage water pollution in general.

By the early 1960s, the Rouge River Watershed was in a severely degraded condition. The result of the same expansion of industry and urban areas has created similar water quality issues across the nation. Both point source pollution and stormwater discharges contributed to a seriously polluted watershed. Following the success of the NPDES, plans were implemented to address the watershed wide water quality issues associated with the Rouge River. Among these was the first voluntary watershed based stormwater permit, under which fifty communities participated in watershed planning efforts. This permitting process was adopted for use statewide, and became the model for the national stormwater permitting program.

### Education

A major component of the stormwater permit is watershed based outreach and education because stormwater pollution is the direct result of our daily activities. Since each of us contributes to the problem, the more we learn about it, understand how we contribute to it, and what we can do about it as a community, the more successful we will be in solving it. The only way this problem will be solved is through the collective efforts of each one of us.

### Stormwater Program Websites

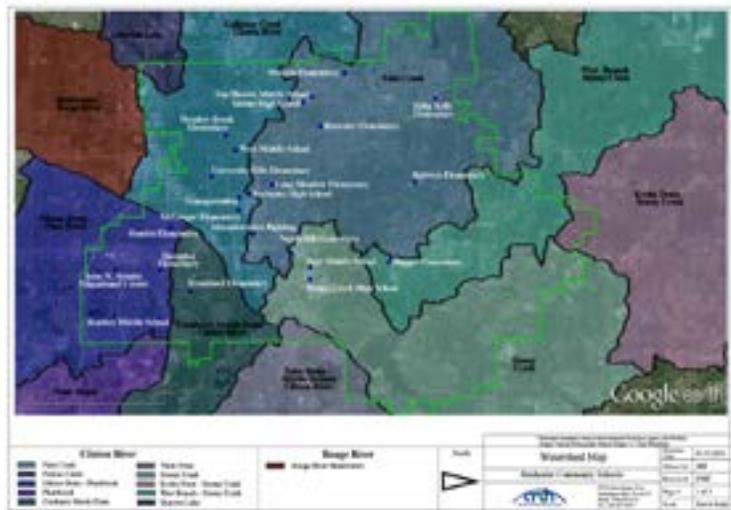


Michigan Department of Environment, Great Lakes, and Energy- Stormwater Program



Environmental Protection Agency Storm Water Program

### Rochester Community Schools Watershed Map



[Click Map to Enlarge](#)

# Rochester Community Schools Stormwater Management Portal

[\\*Click HERE for the ADA Compliant Webpage](#)

## The Clinton River Watershed



### Rochester Community Schools

[Why worry about Stormwater?](#)

[What are we doing about the Problem?](#)

[The Clinton River Watershed](#)

[CRWC Collaboration Links](#)

[Total Maximum Daily Load \(TMDL\)](#)

[Pollutants & Illicit Discharges](#)

[Sewer Overflows and Septic Systems](#)

[Riparian Zone Management](#)

[Why use Native Plants?](#)

[Household Hazardous Waste](#)

[SEMCOG "Seven Simple Steps"](#)

### The Clinton River Watershed

The headwaters of the Clinton River rise in Springfield and Independence Townships, and flow through four counties and 60 urban and rural communities, eventually discharging into Lake St. Clair. The watershed encompasses seven sub-watersheds, and drains approximately 760 square miles while sporting several high quality trout streams. There is a rich ecosystem of open marshes and wetlands, a wealth of avian and waterfowl populations, and a stunning array of wildflowers especially in the less developed headwaters regions. Serving a population of 1.5 million, the watershed has improved dramatically over the past 30 years since the environmental controls regulated under the Clean Water Act.

Once devoid of any living fish from Pontiac all the way to the mouth of the Clinton, this now vibrant river basin continues to face challenges. More than 200 contamination sites remain in the shed, 27 identified as EPA designated Superfund Sites. Both the Clinton and the Rouge River are identified by the EPA as an Area of Concern within the Great Lakes Basin. Oil, grease and pesticides found in Bear Creek and Red Run Drain are a concern. Since watershed pollution is cumulative at the point of discharge, water quality issues are greater where the watershed flows into Lake St. Clair. Perhaps most well known to the general public are the resulting beach closures due to high *E. coli* concentrations. Stream bank erosion due to sediment is also a growing issue in increasingly urbanized rivers like the Clinton, where efforts of restoration are ongoing.

### Public Outreach

There are numerous opportunities for the public to become involved or learn more about the health and care of the watershed all while having fun. The Clinton River Watershed Council offer educational activities as well as volunteer opportunities. Recreational events like Paddlepalooza increase awareness of the watershed. While stormwater management plans define ways in which to address stormwater pollution. This public awareness is critical. It is only through the individual effort of each of us that the problem can be solved.

### Clinton River Watershed Map



### Stormwater Program Websites

[Clinton River Watershed Council \(CRWC\)](#)



[Follow the Clinton River Watershed Council on Twitter](#)



[Clinton River Watershed Council on Facebook!](#)



[Clinton River Watershed Council on Instagram](#)



[Want to see events, stories and news that impact our watershed? Click Here!](#)



[Want to participate in Clinton River Watershed Events? Click Here!](#)

[Clinton River Watershed Council Volunteer Opportunities](#)

# Rochester Community Schools Stormwater Management Portal

\*Click [HERE](#) for the ADA Compliant Webpage

CRWC Collaboration Links



## Rochester Community Schools

[Why worry about Stormwater?](#)

[What are we doing about the Problem?](#)

[The Clinton River Watershed](#)

[CRWC Collaboration Links](#)

[Total Maximum Daily Load \(TMDL\)](#)

[Pollutants & Illicit Discharges](#)

[Sewer Overflows and Septic Systems](#)

[Riparian Zone Management](#)

[Why use Native Plants?](#)

[Household Hazardous Waste](#)

[SEMCOG "Seven Simple Steps"](#)

## CRWC Collaboration Links

### Community Group/Organization/Resource

Clinton River Watershed Council: [www.crw.org](http://www.crw.org)

SEMCOG: [www.SEMCOG.org](http://www.SEMCOG.org)

### Household Hazardous Waste

When household hazardous waste is not correctly disposed, it can enter our storm sewers and waterways. Improperly disposing of these items into storm sewers, sanitary sewers, on-lot sewage systems, or by dumping them onto the ground allows stormwater runoff to pick them up and carry them into our waterways. Once this waste enters our waterways, it causes water pollution that poses a threat to our health and can harm — and in some instances kill — animal and plant life.

Public Services host household hazardous waste collections for county residents. The collections are designed to accept unwanted household chemicals for proper disposal. Links for household hazardous waste collections are below.

**Oakland County:** <https://www.oakgov.com/health/information/Pages/Hazardous-Materials-and-Household-Waste.aspx>

**Macomb County:** <http://health.macombgov.org/Health-Programs-EnvironmentalHealth-RiskAssessment-HouseholdWaste>

**Wayne County:** <https://www.waynecounty.com/departments/environmental/landresources/household-hazardous-waste.aspx>

### Recreational Vehicle Waste Information

Many RV owners fail to follow proper waste-disposal protocols, instead discharging their accumulated sewer wastes, including "black water," directly into storm drains. The result is that untreated sewage is being released directly into our local waterway. Please see the link below to locate RV dump stations by state.

**RV Dumps – Michigan:** <http://www.rvdumps.com/michigan/>

### Riparian Landowner Information

As a responsible waterfront property owner, practicing these Healthy Habits for Clean Water are especially important because you are directly at the water's edge where runoff doesn't have far to travel before reaching the water. Oakland County is home to the headwaters of five major river systems—the Clinton, Flint, Huron, Rouge and Shiawassee. With more than 1,400 lakes and five major river systems in Oakland County (encompassing a total of more than 900 miles of shoreline), riparian landowners have a significant opportunity to make a big difference in protecting our water quality!

**Waterfront Wisdom Booklet:** [https://www.oakgov.com/water/resources/DTCustomerMaterials/waterfront\\_wisdom\\_booklet\\_20180312.pdf](https://www.oakgov.com/water/resources/DTCustomerMaterials/waterfront_wisdom_booklet_20180312.pdf)

### Illicit Discharge Elimination

The two greatest sources of water quality problems in the Clinton River and Lake St. Clair are polluted stormwater runoff and illicit discharges that contain bacteria and nutrients.

**REPORT A POLLUTER - 24-Hour Toll Free Water Pollution Hotline 1-877-679-4337**

#### When to Call

**Please contact us if you observe:**

- A strong sewage odor
- Discharges or dumping of pollutants into drains, ditches, ponds, lakes, or rivers
- Sewage on the ground surface

**Be prepared to give the following information:**

- Location of complaint
- Source of pollution, if known
- Responsible party, if known
- Any other relevant observations

*You may remain anonymous if you desire.*

#### Prevent Illicit Discharges

##### Only rain in the drain.

Never dump motor oil, chemicals, pet waste or dirty wash water down the storm drain or into ditches. All of these materials pollute our lakes and streams.

##### Scoop it.

Keep pet waste cleaned up from lawns, sidewalks and streets and away from drainage ditches and storm drains. When dog waste is left behind, it washes into storm drains and ditches. From there, it heads straight to your local lakes and streams.

##### Sweep it.

Fertilizer left on sidewalks and driveways will easily wash into storm drains and ditches. So, save money and our lakes and streams by sweeping fertilizer back onto the lawn.

# Rochester Community Schools Stormwater Management Portal

\*Click [HERE](#) for the ADA Compliant Webpage

## Total Maximum Daily Loads (TMDLs)



### Rochester Community Schools

- Why worry about Stormwater?
- What are we doing about the Problem?
- The Clinton River Watershed
- CRWC Collaboration Links
- Total Maximum Daily Load (TMDL)
- Pollutants & Illicit Discharges
- Sewer Overflows and Septic Systems
- Riparian Zone Management
- Why use Native Plants?
- Household Hazardous Waste
- SEMCOG "Seven Simple Steps"

### What are TMDLs?

The Environmental Protection Agency has published a series of Total Maximum Daily Loads (TMDLs) for a variety of known water body pollutants such as *E.coli*, phosphorus, sediment, dissolved oxygen, and total dissolved solids. A TMDL represents the maximum amount of a pollutant that can enter a water body so the water body will continue to meet the State of Michigan water quality standards. Studies are conducted on local water bodies to assess their relative quality and if there are any known impairments. If there are impairments and they meet specific criteria, a TMDL is issued for the water body.

### What you can do to help!

Here are some simple steps developed by Southeast Michigan Council of Governments (SEMCOG) that can help you reduce your impact.

### Fertilization - A significant contributor to depleted dissolved oxygen in our waterways

*Proper fertilization is important for a healthy lawn.*

- When fertilizer is put down at the right time and in the right way it strengthens lawns. A healthy lawn protects water by holding soil and pollutants and minimizing the need for pesticides.

*Improper fertilization harms our water.*

- Improper fertilization causes discharge into storm drains in streets, which empty into lakes and rivers. Fertilizers in lakes and rivers cause algae to grow, which uses oxygen that fish need creating a TMDL for dissolved oxygen.

*Fertilize in the fall.*

- Fall is the best time for plants to absorb nutrients and develop a strong root system.

If you would like more information,  
[click here](#)  
for more SEMCOG fertilizing tips!

### Pet Waste - A significant contributor to E. coli levels in our waterways

*Dispose of it promptly and properly.*

- Whether in your yard or on a walk, promptly dispose of your pet's waste in the trash or down the toilet where it will be properly treated. When pet waste is left behind, it washes into storm drains and ditches. From there it heads straight to your local lakes and streams carrying harmful bacteria with it.

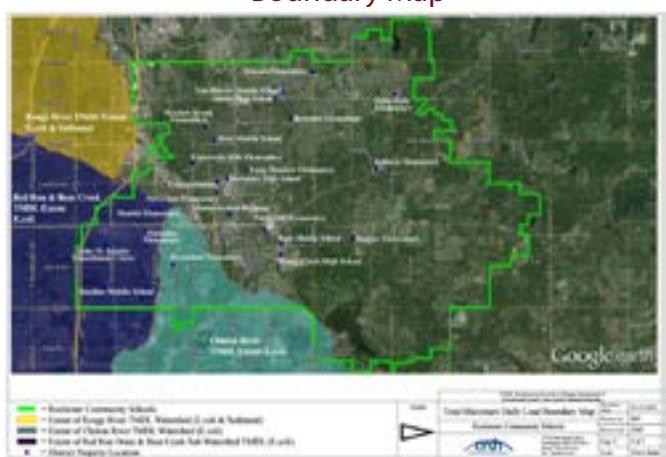
*Watch instead of feeding.*

- Feeding ducks and geese may seem harmless but, in fact, can be a nuisance to people and harmful to our water. Feeding waterfowl causes them to become dependent on humans. This creates unnaturally high populations and problems in our parks and lakes. Waterfowl waste can pollute our water with harmful bacteria.

*Spread the word.*

- Tell others how they can help protect our lakes and streams. Also, work cooperatively with your local government to install signs, bag dispensers, and trash cans in

### Rochester Community Schools TMDL Boundary Map



Click Map to Enlarge

### Stormwater Program Websites



Environmental Protection Agency - Total Maximum Daily Loads (TMDLs)

# Rochester Community Schools Stormwater Management Portal

\*Click [HERE](#) for the ADA Compliant Webpage

## Pollutants & Illicit Discharges



### Rochester Community Schools

[Why worry about Stormwater?](#)

[What are we doing about the Problem?](#)

[The Clinton River Watershed](#)

[CRWC Collaboration Links](#)

[Total Maximum Daily Load \(TMDL\)](#)

[Pollutants & Illicit Discharges](#)

[Sewer Overflows and Septic Systems](#)

[Riparian Zone Management](#)

[Why use Native Plants?](#)

[Household Hazardous Waste](#)

[SEMCOG "Seven Simple Steps"](#)

### Types of Pollutants

Typically, pollutants are synthetic, man-made substances that are used as part of our daily lives. Lawn fertilizers, car wash soaps, pesticides, motor oil, household cleansers, paint, salt, and numerous other sources contribute to polluting our watersheds. However, some pollutants are natural substances that become problematic due to the actions of humans. Sediment, which is essentially dirt carried by stormwater, is one of our most prominent and problematic pollutants.

### Sources of Stormwater Pollution

Unlike the point source pollutants generated by industry, the sources of stormwater pollution are widespread and diverse. Thus, stormwater is considered nonpoint source pollution. Stormwater runoff, combined sewer overflows, illicit discharges, flooding, and failing septic systems are all potential sources of stormwater pollution.

### How do Pollutants Cause Damage?

It is relatively easy to understand how some stormwater pollutants might be a problem. Combined sewer overflows, storm sewer overflows, and leaking septic systems can introduce bacteria such as E. coli and other biota into our lakes and rivers. Other sources may be less straightforward. Lawn fertilizers and pesticides are washed off of walks and even lawn areas and into our storm sewers, eventually settling into our waters. There these pollutants create algae blooms that affect water temperature and kill fish.

### What are we doing about Stormwater Pollutants?

Every body of water is required to meet certain quality standards based on its designated use(s). A body might be designated for use as a public water supply (high water quality) or for industrial purposes (lower water quality), swimming, or agriculture. Once a use is determined, the water quality must continue to meet the level required for that use. Levels of pollutants are restricted and all parties that are potential contributors of pollutants are limited to a fixed quantity of each. We are all potential polluters, therefore each of us is responsible for policing our watershed by minimizing our own contributions and reporting violators.

### Illicit Discharges

Illicit discharges are generally any discharge into a storm drain system that is not composed entirely of stormwater. The exceptions include water from fire fighting activities and discharges from facilities already under a NPDES permit. Illicit discharges are a problem because, unlike wastewater which flows to a wastewater treatment plant, stormwater generally flows to waterways without any additional treatment. Illicit discharges often include pathogens, nutrients, surfactants, and various toxic pollutants.

Phase II MS4s are required to develop a program to detect and eliminate these illicit discharges. This primarily includes developing:

- A storm sewer system map,
- An ordinance prohibiting illicit discharges,
- A plan to detect and address these illicit discharges, and
- An education program on the hazards associated with illicit discharges

### Illicit Discharge Reporting

Please report any illicit discharge activities you observe on district property to the District's Facilities and Operations. Additionally, if you see an illicit discharge occurring outside of the districts property, please call the County Environmental Hotline number listed on the right column of this page.

### Stormwater Program Websites

[Environmental Protection Agency - "After the Storm"](#)

[Environmental Protection Agency - Pollution Control](#)

### District Spill & Illicit Discharge Reporting Numbers

**(248) 726-3000**

Call this number to report concerns, spills, or illicit discharges to the Community Schools Facilities & Operations

### Oakland County Environmental Hotline

**(248) 858-0931**

### Pollution Emergency Alert System (PEAS) Hotline

**1-800-292-4706**

For non-emergency calls or inquiries call the Environmental Assistance Center

**1-800-662-9278**

# Rochester Community Schools Stormwater Management Portal

\*Click [HERE](#) for the ADA Compliant Webpage

## Sewer Overflows and Septic Systems



### Rochester Community Schools

- Why worry about Stormwater?
- What are we doing about the Problem?
- The Clinton River Watershed
- CRWC Collaboration Links
- Total Maximum Daily Load (TMDL)
- Pollutants & Illicit Discharges
- Sewer Overflows and Septic Systems
- Riparian Zone Management
- Why use Native Plants?
- Household Hazardous Waste
- SEMCOG "Seven Simple Steps"

### Sewer Overflows and Septic Systems

In Southeast Michigan, one of the most complex and persistent pollution issues being addressed is the introduction of sewage to our waters through Combined Sewer Overflows (CSOs), Sanitary Sewer Overflows (SSOs), malfunctioning septic systems, and illicit or illegal/inappropriate connections to the storm system.

### Combined Sewer Overflows

A Combined Sewer System is one in which sanitary waste water and stormwater are carried through the same pipes to a wastewater treatment plant. When functioning within their designed capacity, these systems provide a mechanism for stormwater to be treated, along with the waste water, prior to being discharged into the waterways. These types of systems were typically installed prior to the rapid expansion of our built environment. The added loads and associated increased stormwater runoff generated by massive urbanization has resulted in an overloaded system. These stresses result in the regular occurrence of what are known as CSOs. When precipitation is great enough, the combined sewer flows exceed the pipe capacity, and the overflow exits the main pipe at interceptors, which discharge the mixed storm/sanitary flows directly into waterways without treatment.

Combined sewer systems are no longer allowed in new construction. However, identifying and eliminating all such existing systems and connections is complex and expensive to accomplish.

### Sanitary Sewer Overflows

Even areas serviced by separate sanitary and stormwater sewer systems have overflows, which affect water quality similar to CSOs. SSOs typically result from aging infrastructure or electrical/mechanical failures. Stormwater flows find their way into sanitary sewer lines via broken lines from any number of causes, or lift station failures. This causes back flows and basement flooding as well as discharge to local waterways. This problem is equally difficult to both diagnose and treat.

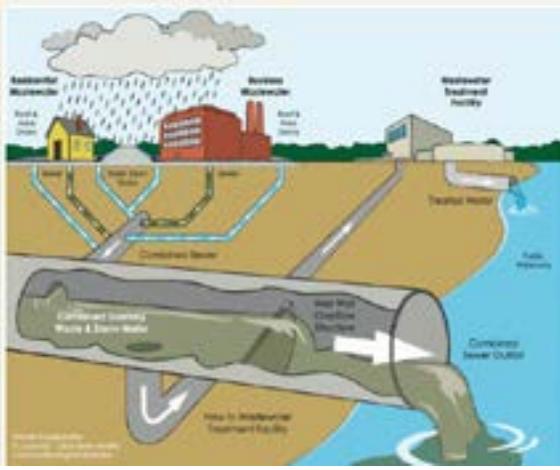
### Addressing the Problem of CSOs and SSOs

Solving the problem of CSOs and SSOs is complex and expensive. Being the focus of pioneering efforts in managing point source pollution stormwater runoff and a national model for stormwater permitting, it is no surprise that the Rouge River is also taking the lead as a test bed for new methods of solving the problem. The Rouge River Wet Weather Demonstration has already utilized \$ 1 billion of a projected 2.4 billion, with the remaining projects differently in their stages of development and completion. When the project is complete, it is anticipated that there will be a total reduction of 85% in combined sewer overflows.

### Septic Systems

Did you know that as a homeowner you are responsible for maintaining your septic system? Did you know that you should periodically inspect your system and pump out your septic tank?

Your septic system can, if properly designed, constructed and maintained, provide long term effective treatment of household waste water. If your septic system is not maintained you may need to replace it. This could end up costing you thousands of dollars. A malfunctioning system can contaminate groundwater that might be a source of drinking water. For more information on Septic Systems click the link to the Environmental Protection Agency document on Septic System Maintenance in the right hand column!



### Stormwater Program Websites

- Environmental Protection Agency - Combined Sewer Overflows
- Environmental Protection Agency - Sanitary Overflows
- Environmental Protection Agency - Septic System Maintenance



# Rochester Community Schools Stormwater Management Portal

\*Click [HERE](#) for the ADA Compliant Webpage

## Riparian Zone Management



### Rochester Community Schools

- Why worry about Stormwater?
- What are we doing about the Problem?
- The Clinton River Watershed
- CRWC Collaboration Links
- Total Maximum Daily Load (TMDL)
- Pollutants & Illicit Discharges
- Sewer Overflows and Septic Systems
- Riparian Zone Management
- Why use Native Plants?
- Household Hazardous Waste
- SEMCOG "Seven Simple Steps"

### Why is Riparian Zone Management Important?

Riparian zones have the capacity to buffer rivers and other waters from nonpoint source runoff from agricultural, urban and/or other land uses. Healthy riparian zones can absorb sediments, chemical nutrients, and other substances contained in nonpoint source runoff. They also provide for aquifer recharge, diverse habitats, and water storage/release. A healthy, functioning riparian zone and associated uplands dramatically increase benefits including fish and wildlife habitat, erosion control, forage, late season stream flow and most important of all water quality.

### What is Riparian Zone Management?

Riparian Zone Management, also known as "Riparian Corridor Management" is a system that allows for the protection of water resources while still allowing sustainable mixed use of surrounding riparian area. It is a combination of techniques that protect and in some cases improves water quality and biodiversity. These techniques include, but are not limited to:

- 1. River Friendly Lawn Care** - Practices from both private and public landowners can impact the health of the riparian corridor as well as water quality. There are several techniques that can be implemented at low or no cost to protect and improve water quality, including the use of low phosphorus fertilizers, use of native plants, and environmentally friendly weed management.
- 2. Riparian Buffer Zones** - Buffer zones are areas of vegetation between the river and the surrounding land use. These areas are critically important because they absorb sediment, chemical nutrients, and other substances, provide for aquifer recharge and dramatically increase benefits such as fish and wildlife habitat, erosion control, and water quality. These areas can be created and maintained at low or no cost. There are several types of buffers including Grow Zones (often called no-mow zones), Native Plant Buffers and Forested Buffers.
- 3. Stream Bank Stabilization** - With increased upstream development comes an increase in impervious surfaces. This increases the flow, and therefore causes accelerated stream bank erosion in our streams and rivers. Past practices to stabilize eroding stream banks may have done more harm than good by shifting and concentrating problems further downstream. New techniques have been developed that are low cost, environmentally beneficial, and can even be implemented by private citizens without heavy equipment. There are several types of methods which include live fascines, live stakes, and brush mattresses.
- 4. Woody Debris Management** - In the recent past, logjams were thought to be a significant problem and were completely removed from stream channels. New studies have shown that logjams help reduce erosion, provide habitat for wildlife, and are an important part of the natural processes of a river system. Now it is recommended to leave most logjams in place. Woody debris management is the process of determining what to do about wood in the river; move, remove or add, and how best to do that work. Methods have been specifically developed to give guidance on how to manage a logjam, while preserving the benefits they provide and minimizing the problems they can create. Two methods that can be useful are the Clean and Open Method and Habitat and Structure Method.
- 5. River Maintenance** - River improvement in the past included the removal of everything in the river; logs, garbage, basketballs and shopping carts. Now we know that pulling those out of the river may have done more harm than good. New ways of maintaining the river as a natural amenity have been developed. These methods, in conjunction with the aforementioned techniques, can reduce maintenance time and costs while improving water quality and the overall health of the riparian corridor.

### Stormwater Program Websites

[Clinton River Watershed Council Waterfront Wisdom Booklet](#)

### Riparian Management Zones

[Riparian Zone Management and Trout Streams](#)

### Riparian Zone and Stream Restoration

[Water Resources Commissioner Riparian Education](#)



# Rochester Community Schools Stormwater Management Portal

\*Click [HERE](#) for the ADA Compliant Webpage

## Why use Native Plants?



### Rochester Community Schools

[Why worry about Stormwater?](#)

[What are we doing about the Problem?](#)

[The Clinton River Watershed](#)

[CRWC Collaboration Links](#)

[Total Maximum Daily Load \(TMDL\)](#)

[Pollutants & Illicit Discharges](#)

[Sewer Overflows and Septic Systems](#)

[Riparian Zone Management](#)

[Why use Native Plants?](#)

[Household Hazardous Waste](#)

[SEMCOG "Seven Simple Steps"](#)

*Rochester Community Schools encourages the use and planting of native vegetation, wild flowers and rain gardens at school facilities. Please contact the Maintenance Department at (248) 726-3000 for more information.*

#### Why use Native Plants?

- Native plants do not require fertilizers. Vast amounts of fertilizers are applied to lawns. Excess phosphorus and nitrogen (the main components of fertilizers) run off into lakes and rivers causing excess algae growth. This depletes oxygen in our waters, harms aquatic life and interferes with recreational uses.
- Native plants require fewer pesticides than lawns. Nationally, over 70 million pounds of pesticides are applied to lawns each year. Pesticides run off of lawns and can potentially contaminate rivers and lakes. People and pets in contact with chemically treated lawns can be exposed to pesticides.
- Native plants require less water than lawns. The modern lawn requires significant amounts of water to thrive. In urban areas, lawn irrigation uses as much as 30% of the water consumption on the East Coast and up to 60% on the West Coast. The deep root systems of many native Midwestern plants increase the soil's capacity to store water. Native plants can significantly reduce water runoff and potential flooding.
- Native plants help reduce air pollution. Natural landscapes do not require mowing. Lawns must be mowed regularly. Gas powered garden tools emit 5% of the nation's air pollution. Forty million lawn mowers consume 200 million gallons of gasoline per year. One gas-powered lawn mower emits 11 times the air pollution of a new car for each hour of operation. Excessive carbon from the burning of fossil fuels contributes to global warming. Native plants sequester, or remove, carbon from the air.
- Native plants provide shelter and food for wildlife. Native plants attract a variety of birds, butterflies, and other wildlife by providing diverse habitats and food sources. Closely mowed lawns do not benefit most wildlife.
- Native plants promote biodiversity and stewardship of our natural heritage. In the U.S., approximately 20 million acres of lawn are cultivated, covering more land than any single crop. Native plants are a part of our natural heritage. Natural landscaping is an opportunity to reestablish diverse native plants, thereby inviting the birds and butterflies back home.
- Native plants save money. A study by Applied Ecological Services (Brodhead, WI) of larger properties estimates that over a 20 year period, the cumulative cost of maintaining a prairie or a wetland totals \$3,000 per acre versus \$20,000 per acre for non-native turf grasses.



### Stormwater Program Websites

[Wildflower Association of Michigan](#)



[Landscaping with Native Plants- A Wise Choice!](#)

[A Citizen's Guide to Native Landscaping](#)

# Rochester Community Schools Stormwater Management Portal

[\\*Click HERE for the ADA Compliant Webpage](#)

## Household Hazardous Waste



### Rochester Community Schools

[Why worry about Stormwater?](#)

[What are we doing about the Problem?](#)

[The Clinton River Watershed](#)

[CRWC Collaboration Links](#)

[Total Maximum Daily Load \(TMDL\)](#)

[Pollutants & Illicit Discharges](#)

[Sewer Overflows and Septic Systems](#)

[Riparian Zone Management](#)

[Why use Native Plants?](#)

[Household Hazardous Waste](#)

[SEMCOG "Seven Simple Steps"](#)

### Why is household hazardous waste disposal important?

Leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients are considered to be household hazardous waste. Products such as paints, cleaners, oils, batteries, and pesticides contain potentially hazardous ingredients that require special care during disposal process.

Improper disposal of household hazardous waste can include pouring them down the drain, on the ground, into storm sewers, or in some cases putting them out with the trash. The dangers of such disposal methods might not be immediately obvious, but improper disposal of these wastes can pollute the environment and pose a threat to human health. Many communities in the United States offer a variety of options for conveniently and safely managing household hazardous waste.

### How can you reduce your household hazardous waste at home?

Consider reducing your purchase of products that contain hazardous ingredients and learn about the uses of alternative methods or products, without hazardous ingredients, for some common household needs. To avoid the potential risks associated with household hazardous wastes, it is important that people always monitor the use, storage, and disposal of products with potentially hazardous substances in their homes.

### How you can reduce, reuse, recycle and dispose of waste in your community!

The options of reduction, reuse, recycling, and disposal, listed in order of the Environmental Protection Agency's preferred waste management hierarchy, are all important tools to help safely manage and mitigate household hazardous waste. The links displayed along the right side of the page include information can help you determine the best ways to reduce, reuse, or dispose of common household products that may contain hazardous ingredients.



### Local Household Hazardous Waste Programs

[Oakland County Household Hazardous Waste Disposal](#)

[Southeastern Oakland County Resource Recovery Authority \(SOCCRA\)](#)

[Resource Recovery & Recycling Authority of Southwest Oakland County \(RRASOC\)](#)

[North Oakland County Household Hazardous Consortium \(NO HAZ\)](#)

[Not in Oakland County? Click here to find events in your community!](#)

[Oakland Conservation District Facebook](#)



[Oakland Conservation District Website](#)



# Rochester Community Schools Stormwater Management Portal

\*Click [HERE](#) for the ADA Compliant Webpage

## SEMCOG Seven Simple Steps



### Rochester Community Schools

[Why worry about Stormwater?](#)

[What are we doing about the Problem?](#)

[The Clinton River Watershed](#)

[CRWC Collaboration Links](#)

[Total Maximum Daily Load \(TMDL\)](#)

[Pollutants & Illicit Discharges](#)

[Sewer Overflows and Septic Systems](#)

[Riparian Zone Management](#)

[Why use Native Plants?](#)

[Household Hazardous Waste](#)

[SEMCOG "Seven Simple Steps"](#)

### SEMCOG Seven Simple Steps

#### *Contributors to Stormwater Pollution*

- **Washing cars in the drive, and letting soapy/dirty water run to the storm drain.**
- **Leaving pet waste on lawns and other areas.**
- **Improperly using, storing or disposing of household cleaners.**
- **Fertilizing more than required, and leaving it on the sidewalk.**
- **Allowing grass clippings and leaves to sit on walks and drives.**

SEMCOG offers technical support on a number of issues including effective stormwater management. SEMCOG has developed a series of simple steps each of us can take to help decrease our impact on our watersheds. These "Seven Simple Steps" offer practical, real world tips on ways we can keep our water clean. Click the headings below for more information.

#### **Save water**

The Great Lakes are the largest system of fresh water on earth and contain almost 85 percent of North America's supply. Each one of us uses about 77 gallons of water each day. That is a lot of water. Overuse wastes water, money, and adds to pollution.

#### **Practice good car care**

There are over 68 million automobiles in the U.S., and almost half of them leak some sort of hazardous fluids. Combined with the used fluids that are improperly disposed of, and the substances used to keep them clean, our cars are a major contributor to the pollution of our waters. Proper care of them is crucial.

#### **Choose earth friendly landscaping**

Many of us take pride in our lawns and gardens for the curb appeal we think they provide yet the way we maintain them is a major contributor to the pollution of our waters. There are better alternatives.

#### **Help keep pollution out of the storm drains**

If you learn only one thing from reading these pages, it should be that the water that goes into our storm drains does not get treated, but is discharged directly into our waterways. This means that all of the pollutants carried by the water are also discharged there. Keeping pollutants out of our stormwater and thus our storm drains is the single biggest contribution we can make toward eliminating stormwater pollution.

#### **Fertilize caringly**

Your lawn does not require all of the fertilizer you likely apply to it. Fertilizer is a pollutant, it should be used sparingly. It is required by law that any fertilizer left on your walks and drives be swept back onto the lawn area. Be sure that you or your lawn care contractor does this.

#### **Clean up after your pet**

Stormwater carries everything it comes into contact with, including pet waste, to storm drains and discharges it untreated into our waters.

#### **Carefully store and dispose of household cleaners and chemicals**

The great majority of household cleaners and chemicals are poisons and pollutants. Proper care in their use, storage, and disposal, is critical to your health, safety, and the environment. Take steps to protect yourself, and keep these substances out of our waters.

### Local Household Hazardous Waste Programs

[SEMCOG "Protect Our Waterways" Program Website](#)

[A Citizen's Guide to Watershed Friendly Lawn Fertilizer](#)

[A Citizen's Guide to Watershed Friendly Boat Care](#)

[A Citizen's Guide to Rain Barrels](#)

[A Citizen's Guide to Rain Gardens](#)

[A Citizen's Guide to Watershed Friendly Pet Care](#)

[A Citizen's Guide to Cold Weather Practices](#)

