# Stormwater Management Plan

## MUNICIPAL STORMWATER (MS4) PROGRAM

PREPARED FOR THE

TOWN OF VINLAND

WINNEBAGO COUNTY, WISCONSIN

SEPTEMBER 1, 2021

McM. No. V0006-09-21-00293

NAV:PTK:car

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# 1.0 – INTRODUCTION

The Town of Vinland's Stormwater Management Plan was prepared by McMahon Associates, Inc. The purpose of the plan is to provide the Town with the long-term guidance necessary to comply with NR 216 stormwater regulations and improve water quality within receiving waters.

Pursuant to NR 216, the Town of Vinland was required to obtain a WPDES Municipal Stormwater Discharge Permit. The purpose of the permit is to control urban non-point source pollution by regulating discharges from municipal separate storm sewer systems (MS4). A copy of the WPDES Permit is provided in Appendix A. As part of the municipal permit, the Town is responsible for developing a stormwater management plan and implementing six minimum control measures. The six minimum control measures consist of:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Pollutant Control
- Post-Construction Site Stormwater Management
- Municipal Pollution Prevention

This stormwater management plan is organized in a manner similar to the WPDES Muncipal Stormwater Discharge Permit. The plan identifies the goals and objectives for each of the six minimum control measures, explains how the program was developed, and describes how the Town intends to implement each aspect of the stormwater program, including measurable goals.

# 2.0 – OVERVIEW OF STUDY AREA

The Town of Vinland is in Winnebago County, Wisconsin. The Town is projected to have a 2020 population of 1,736. The study area for this Stormwater Management Plan is depicted in Figure 2. The Town of Vinland is part of the Appleton Urbanized Area and Oshkosh Urbanized Area as determined by the U.S. Census Bureau. As shown in Figure 1, several Municipal Separate Storm Sewer System (MS4) jurisdictions are located within and directly adjacent to the Town.

## Basins

The Wisconsin DNR divided the state into 24 basins or Water Management Units (WMU). The Town's study area is in the Upper Fox River Basin. The basin boundaries are similar to the federally designated 8-digit Hydrologic Unit Code (HUC) boundaries.


Exhibit 2-1: Lower & Upper Fox River Basins

## Watersheds

The DNR divided the Upper Fox River Basin into 15 watersheds. The Town's study area is located in one of these watersheds: Lake Winnebago North & West Watershed (UF01-111).

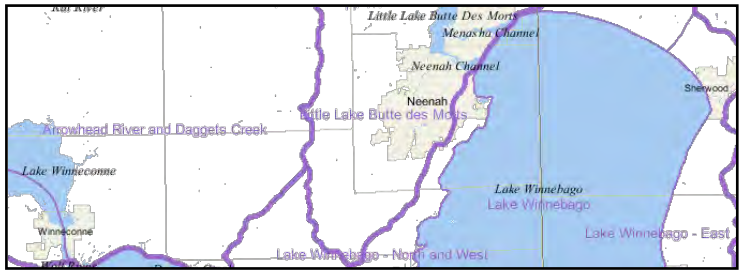


Exhibit 2-2: Little Lake Butte des Morts & Lake Winnebago North & West Watersheds

## Sub-Watersheds

For purposes of this stormwater management plan, the Town was divided into one sub-watersheds. The sub-watersheds are depicted in Figure 3 and summarized in Table 2-1. The sub-watersheds were delineated after considering the locally designated stormwater planning boundaries, federally designated 12-digit HUC boundaries, and state designated Total Maximum Daily Load (TMDL) sub-basin boundaries.

Table 2-1

Sub-Watersheds

| Sub-Watershed | HUC-12 | TMDL Sub-Basin Name |
|---|---|---|
| Lake Winnebago | City of Oshkosh-Lake Winnebago (040302030101) | Lake Winnebago |

## Natural Resources

Natural resource features include surface waters (lakes, rivers, streams), wetlands, and endangered or threatened resources. Natural resource features located in the study area are depicted in Figure 4. Some of these natural resource features are protected with a special regulatory designation such as outstanding resource water, exceptional resource water, 303(d) impaired water, endangered species, and threatened species. Natural resource features located in the study area with one of these special regulatory designations are identified below.

Outstanding and exceptional resource waters are pristine surface waters which are not significantly impacted by human activities and provide valuable fisheries, unique hydrological or geological features, outstanding recreational opportunities, or unique environmental settings. For example, cold water trout streams and natural waterfalls are typically classified as outstanding or exceptional resource waters. The Town does not discharge stormwater runoff into any outstanding resource waters or exceptional resource waters.

Impaired water bodies are degraded surface waters which are not meeting water quality standards or their potential uses, such as fishing and swimming, due to pollutants and poor water quality. The US EPA requires each state to update its 303(d) impaired waters list every two years, including Wisconsin. The Town's study area discharges stormwater runoff into the following 303(d) impaired waters:

- Lake Winnebago: Lake Winnebago is a 303(d) impaired water body due to non-point source pollution. Pollutants of concern include PCBs, total phosphorus, sediment/total suspended solids and Mercury. Impairments include low dissolved oxygen, eutrophication, turbidity and excess algal growth. The designated use for Lake Winnebago is a warm water forage fishery. The attainable use is fish and aquatic life. Sediment and phosphorus TMDLs have been approved for Lake Winnebago.

Endangered and threatened resources are wild animal and plant species which are either in danger of extinction throughout all or a significant portion of its range or likely to become endangered in the foreseeable future. Typically, the location of an endangered or threatened species is tracked in Wisconsin's Natural Heritage Inventory and is only identified by township. Sensitive species that are particularly vulnerable to collection or disturbance are only identified by county.

## Cultural Resources

Cultural resources are places of cultural significance. Some cultural resources are protected with a special regulatory designation such as historical sites and archeological sites. Cultural resource features located in the study area with one of these special regulatory designations are identified below.

Historical sites located within the Town and listed in the Wisconsin Historical Society's register may include the Brainerd Site. The Brainerd Site's location is address restricted (Reference No. 84003823).

Archeological sites may be located within the study area but cannot be disclosed by law. The State of Wisconsin maintains maps and a computer database on the location and nature of archaeological sites.

Special permission is required to view these maps and databases. The location of archaeological sites is exempt from public disclosure to prevent collection or disturbance of valuable artifacts.

**Soils**

Soil information is from the *Winnebago County Soil Survey,* Natural Resource Conservation Service, U.S. Department of Agriculture. The U.S. Department of Agriculture has classified soil types into four hydrologic soil groups (HSG). The four hydrologic soil groups (i.e., A, B, C and D) are classified according to the minimum infiltration rate of the soil column. Group A soils have the highest permeability rate or lowest runoff potential, whereas Group D soils have the lowest permeability rate or highest runoff potential. Hydrologic soil groups are depicted in Figure 5.

**MS4 System**

The municipal separate storm sewer system (MS4) consists of publicly owned or operated conveyance systems including streets, curbs, gutters, catch basins, storm sewers, swales, channels, culverts, and occasionally bridges. The MS4 system is depicted in Figure 6. The MS4 system map is based on available records and limited field investigations.

The MS4 system contains numerous bridges and culverts. The bridges and culverts are depicted in Figure 7. An inventory of the bridges and culverts is provided in Appendix B. The inventory does not include every bridge and culvert since it is based on available records and limited field investigations.

The MS4 system contains numerous known stormwater outfalls. The outfall locations are depicted on Figure 8. An outfall is the point at which stormwater is discharged to a lake, river, navigable stream, or adjacent MS4 system. Major outfalls include the following:

- A MS4 pipe with a 36-inch diameter or larger.
- A MS4 conveyance with a cross sectional area of 1,018 square inches or larger which is associated with a drainage area of 50 acres or larger.
- A MS4 conveyance with 2 acres or larger of industrial land use.

As shown in Figure 9, the MS4 system does not contain any structural best management practices (BMP). Structural BMPs include wet detention ponds, dry detention ponds, stormwater pond / wetland systems, biofiltration devices, proprietary devices, and other structural BMPs. As shown in Figure 10, the MS4 system only contains one type of surface drainage: grass swales. The Vinland study area does not contain any curb and gutter drainage systems.

**Drinking Water System**

The Town of Vinland does not own or operate a public drinking water system.

**WPDES Industrial Permits**

As stated in Figure 11, Vinland's study area does not contain any industrial operations with coverage under a WPDES Industrial Permit. The WPDES Industrial Permits are regulated by the Wisconsin Department of Natural Resources (DNR). Some of the WPDES Industrial Permits may allow discharges into the MS4 system during dry weather. Understanding the location of the WPDES Industrial Permits is important to effective implementation of the Town's stormwater program.

**Drainage Areas**

Drainage areas associated with the Town of Vinland's study area are depicted in Figure 11. The drainage areas depicted in Figure 11 are the basis for the stormwater quality calculations contained in Chapter 9 of this report.

**Land Uses**

Existing land uses for the study area are depicted in Figure 12. Existing land uses include urban areas developed on or before October 1, 2004. Undeveloped in-fill sites less than 5 acres are shown to be developed based on adjoining land uses. Undeveloped in-fill sites greater than 5 acres and future growth areas are shown as either agriculture, woods, or undeveloped open space, as appropriate. Existing land uses are based on information obtained from the Town of Vinland, East Central Regional Planning Commission, and limited field investigations. As stated in Figure 11, no publicly owned parks, recreational areas, open lands, and municipal facilities are located in Vinland's study area. Future land uses for the study area are the same as existing land uses depicted in Figure 12.

**Table 2-2**

**Land Uses**

| Land Use | | Existing | | Future | |
|---|---|---|---|---|---|
| | | Acres | Percent | Acres | Percent |
| Agriculture | AGRIC | 74 | 19.4% | 74 | 19.4% |
| Commercial Strip | CSTRIP | 6 | 1.6% | 6 | 1.6% |
| High Density Residential | HDR | 0.1 | 0.0% | 0.1 | 0.0% |
| Low Density Residential | LDR | 52 | 13.7% | 52 | 13.7% |
| Light Industrial | LIGHTI | 1 | 0.3% | 1 | 0.3% |
| Medium Density Residential | MDR | 39 | 10.3% | 39 | 10.3% |
| Open Space Undeveloped* | OSUD | 11 | 2.9% | 11 | 2.9% |
| Suburban Residential | SUBR | 54 | 14.2% | 54 | 14.2% |
| Wetland | WETLND | 133 | 35.0% | 133 | 35.0% |
| Woods | WOODS | 10 | 2.6% | 10 | 2.6% |
| Total: | | 380.1 | 100% | 380.1 | 100% |

# CHAPTER 3 - PUBLIC EDUCATION & OUTREACH

**Goals & Objectives**

Develop a public education and outreach program to increase awareness of stormwater pollution impacts and to encourage changes in public behavior. An informed and knowledgeable community is important to the success of a stormwater program. An informed community has a better understanding of why stormwater management is important and what individual actions they can take to improve water quality within receiving waters.

The key to a successful public education and outreach program is to form partnerships, develop a strategy, and reach a diverse audience. A public education program should also target specific audiences that have a higher potential for stormwater pollution. For some audiences, particularly businesses, incentives may be needed to encourage behavior change. Potential incentives may include awards, rewards, public recognition, certifications, licenses, rebates, fees, and credit policies (stormwater utility fee).

The Wisconsin Department of Natural Resources (DNR) requires that a public education and outreach program include, at a minimum, the following 8 topics.

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

2. Inform and educate the public about the proper management of materials that may cause stormwater pollution from sources including automobiles, pet waste, household hazardous waste and household practices.

3. Promote beneficial onsite reuse of leaves and grass clippings and proper use of lawn and garden fertilizers and pesticides.

4. Promote the management of streambanks and shorelines by riparian landowners to minimize erosion and restore and enhance the ecological value of waterways.

5. Promote infiltration of residential stormwater runoff from rooftop downspouts, driveways and sidewalks.

6. Inform and educate those responsible for the design, installation, and maintenance of construction site erosion control practices and stormwater management facilities on how to design, install and maintain the practices.

7. Identify businesses and activities that may pose a stormwater contamination concern, and where appropriate, educate specific audiences on methods of stormwater pollution prevention.

8. Promote environmentally sensitive land development designs by developers and designers (e.g. low impact development, conservation design, etc.).

The DNR requires the Town to address all eight topics at least once during the 5-year permit term. The Town is required to address a minimum of four topics each year if population is less than 5,000. The DNR requires the Town to use at least four different public education delivery mechanisms each year. The Town is required to use at least one active/interactive mechanisms each year if population is less than 5,000.

- Passive: Website (# of hits), Brochures (# distributed/taken), Newsletters (# distributed/taken), Poster/Sign (# of posters/signs), Radio or TV (# of ads), Social Media (# of posts), or Other.

- Active: School Presentation (# students), Information Booth (# interactions), Training Event (# participants), Town Meeting (# attendees), Tour (# attendees), Volunteer Event (# participants), or Other.

**Program Development**

The Town is a member of the Northeast Wisconsin Stormwater Consortium (NEWSC), which is a regional organization. NEWSC is essentially a partnership of municipalities, regulatory agencies, engineers, and vendors. The group's mission is to facilitate efficient implementation of local stormwater programs by: fostering partnerships, sharing information, seeking adminstrative efficiencies, and pooling financial resources. For example, NEWSC develops various educational brochures and manages regional public education and involvements efforts for the benefit of its membership and the region.

The Town has a Plan Commission, which provides public participation and input to the Town Board on as needed basis. Members of the Plan Commission are continually changing, but often consist of residential landowners and representatives from local businesses. The Plan Commission provides feedback and input on various Town initiatives and programs, including the Town's municpal stormwater program. During meetings, the Plan Commision is provided background information (i.e. goals, regulatory requirements, etc) and then asked to provice advisory input, which helps shape the Town's programs, plans, initiatives or projects.

The Town developed various policies and procedures to assist with implementation of the public education and outreach program. The policies and procedures include the following:

1. The Town Board and Town Clerk are responsible for the public education and outreach program, including implementation.

2. The Town intends to maintain its membership and partnership with NEWSC. The NEWSC public education initiatives are part of the Town's public education and outreach plan.

3. The Town plans to convene the Plan Commission on an as needed basis to discuss stormwater related items, such as the TMDL stormwater quality management plan.

**Program Implementation**

Each element of the public education and outreach program is described below including Best Management Practices (BMP) and measurable goals. As indicated below, the public education program is integrated with the other five minimum control measures. The proposed BMPs and measurable goals were selected after considering the permit requirements and the uniqueness of the Town. The purpose of the measurable goals is to track program implementation and gauge effectiveness of the overall public education and outreach program.

| Public Education & Outreach | Year |
|---|---|
| **Topic 1:** Detection and elimination of illlicit discharges and water quality impacts associated with such discharges from municipal separate storm sewer systems.<br>**Audience:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Passive: Website (# hits), Raindrop Poster VH (# posters), Radio/TV (# ads), Social Media (# posts). | 2021-25 |
| Passive: Brochure - Fish Don't Swim in Chlorine (# taken). | 2021-25 |
| Passive: Newsletter - Household Hazardous Waste (# distributed). | 2021-25 |
| Active: Presentation - Government Meeting for Annual Report, Plan or Project (# attendees). | 2021-25 |
| Active: NEWSC Exhibiting at Town Event or School (# interactions or students). | 2021 |
| **Topic 2:** Management of materials that may cause stormwater pollution from automobiles, pet waste, household hazardous waste and household practices.<br>**Audience:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Passive: Website (# hits), Raindrop Poster VH (# posters), Radio/TV (# ads), Social Media (# posts). | 2021-25 |
| Passive: Brochure - Good Dog / Good Owner (# taken & # distributed with pet license). | 2021-25 |
| Passive: Newsletter - Household Hazardous Waste & Pet Waste (# distributed). | 2021-25 |
| Active: NEWSC Exhibiting at Town Event or School (# interactions or students). | 2021 |

| Public Education & Outreach | Year |
|---|---|
| **Topic 3:** Beneficial onsite reuse of leaves / grass clippings and proper use of fertilizers and pesticides.<br>**Audience:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Passive: Website (# hits), Raindrop Poster VH (# posters), Radio/TV (# ads), Social Media (# posts). | 2021-25 |
| Passive: Newsletter - The Perfect Lawn (# distributed) | 2021 |
| Passive: Newsletter - Kids Can Help (# distributed) | 2022 |
| Active: NEWSC Exhibiting at Town Event or School (# interactions or students) | 2021 |
| Passive: Newsletter – Leave Your Leaves (# distibuted) | 2025 |
| **Topic 4:** Management of streambanks and shorelines by riparian landowners to minimize erosion and restore and enhance the ecological value of waterways.<br>**Audience:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Passive: Website (# hits), Raindrop Poster VH (# posters), Radio/TV (# ads), Social Media (# posts). | 2021-25 |
| Passive: Brochure - Restore Your Shore (# taken & # distributed with shoreland permit) | 2021-25 |
| Passive: Newsletter - Restore Your Shore (# distributed) | 2023 |
| Active: NEWSC Exhibiting at Town Event or School (# interactions or students) | 2021 |
| **Topic 5:** Infiltration of residential stormwater runoff from rooftop downspouts, driveways and sidewalks.<br>**Audience:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Passive: Website (# hits), Raindrop Poster VH (# posters), Radio/TV/Social Media (# posts). | 2021-25 |
| Passive: Brochure - Perfect Landscape (# taken & # distributed with residential home permit) | 2021-25 |
| Active: NEWSC Exhibiting at Town Event or School (# interactions or students) | 2021 |
| Passive: Newsletter - Perfect Landscape (# distributed) | 2024 |
| **Topic 6:** Inform and educate those responsible for design, installation, and maintenance of construction site erosion controls and stormwater management facilities on how to design, install and maintain.<br>**Audience:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Passive: Website (# hits), Plan Review Letters (# distributed), Inspection Report (# distributed). | 2021-25 |
| Active: Discuss Permit Requirements at Pre-Construction Meetings (# attendees). | 2021-25 |
| Active: Presentation at Government Meeting for Annual Report, Plan or Project (# attendees). | 2021-25 |
| Active: Host Training on Post-Construction Stormwater Facility Maintenance (# attendees). | TBD |
| **Topic 7:** Identify businesses and activities that may pose a stormwater contamination concern, and where appropriate, educate specific audiences on methods of stormwater pollution prevention<br>**Audience:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Passive: Website (# hits), Radio/TV/Social Media (# posts). | 2021-25 |
| Active: NEWSC Exhibiting at Town Event or School (# interactions or students) | 2021 |
| **Topic 8:** Promote environmentally sensitive land development designs by developers and designers (e.g. low impact development, conservation design, etc.).<br>**Audience:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Passive: Website (# hits), Radio/TV/Social Media (# posts). | 2021-25 |

# CHAPTER 4 - PUBLIC INVOLVEMENT & PARTICIPATION

## Goals & Objectives

Develop a public involvement and participation program to notify the public of activities required by the permit and encourage public input. An active and involved community is important to the success of a stormwater program. A community involved in program development may be less likely to create obstacles and raise legal challenges during implementation. Citizens who participate in the decision making process are partially responsible for the program.

The key to a successful public involvement and participation program is to know your audience and think creatively about how to gain their attention. Traditional methods of soliciting public involvement are not always successful in generating interest. The goal is to involve a diverse group of people who offer a multitude of concerns, ideas, and networking connections.

The Wisconsin Department of Natural Resources (DNR) requires that the public involvement and participation program include the following measurable goals:

1. The Town shall provide a minimum of one opportunity annually for the public to provide input of each of the following permit activities: annual report, storm water management program, and if applicable, the adoption or amendment of stormwater related ordinances.

2. The Town shall identify the public invlovement and participation delivery mechanism for each permit activity. Delivery mechanisms may include public workshop, presentation of storm water information, government event (public hearing, council meeting, etc.), citizen committee meeting or website.

3. The Town shall implement at a minimum one of the following volunteer activites per year: group best management practice (BMP) installation or maintenance, storm drain stenciling, planting community rain garden, clean up event, stream monitoring, citizen committee meeting, public workshop, presentation of storm water information or other hands-on event.

4. The Town shall identify the targeted participants for each permit activites and vulunteer activity. Participants may include general public, public employees, residents, businesses, contractors, developers, industries, and/or other appropriate audience.

## Program Development

The Town is a member of the Northeast Wisconsin Stormwater Consortium (NEWSC), which is a regional organization. NEWSC is essentially a partnership of municipalities, regulatory agencies, engineers, and vendors. The group's mission is to facilitate efficient implementation of local stormwater programs by:

fostering partnerships, sharing information, seeking adminstrative efficiencies, and pooling financial resources. For example, NEWSC develops various educational brochures and manages regional public education and involvements efforts for the benefit of its membership and the region.

The Town has numerous public meetings each year. During each meeting, the public is provided an opportunity to provide public input and participate. Public education and public involvement opporunities are provided during a Town public meeting, whenever stormwater ordinances are modificed, funding sources are modified, capital improvement projects are implemented for TMDL stormwater quality compliance, Town's MS4 Annual Report is submitted to DNR each year, etc.

The Town has a Plan Commission, which provides public participation and input to the Town on as needed basis. Members of the Plan Commssion are continually changing, but often consist of residential landowners and representatives from local businesses. The Plan Commission provides feedback and input on various Town initiatives and programs, including the Town's municpal stormwater program. During meetings, the Plan Commission is provided background information (i.e. goals, regulatory requirements, etc) and then asked to provice advisory input, which helps shape the Town's programs, plans, initiatives or projects.

The Town utilizes it's general fund to financially support the municipal stormwater program, including public education and outreach.

The Town developed various policies and procedures to assist with implementation of the public involvement and participation program. The policies and procedures include the following:

1. The Town Board and Town Clerk is responsible for implementation of the public involvement and participation program.

2. The Town intends to maintain its membership and partnership with NEWSC. The NEWSC public involvement and participation initiatives are part of the Town's public education and outreach plan.

3. The Town plans to convene the Plan Commission on an as needed basis to discuss stormwater related items, such as the TMDL stormwater quality management plan.

4. Each year, the Town Clerk or Town's Contracted Consulting Engineer plans to present a summary of the MS4 Annual Report to elected officials and the general public during a Town Board meeting. Elected officials and the general public are invited to comment or ask questions. A sample MS4 Annual Report presentation is provided in Appendix D.

**Program Implementation**

Each element of the public involvement and participation program is described below including Best Management Practices (BMP) and measurable goals. As indicated below, the public involvement

program is integrated with the other five minimum control measures. The proposed BMPs and measurable goals were selected after considering the permit requirements and uniqueness of the Town. The purpose of the measurable goals is to track program implementation and gauge effectiveness of the overall public involvement and participation program.

| Public Involvement & Participation | Year |
|---|---|
| **Topic 1:** Stormwater Management Plan and/or Updates.<br>**Participants:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Public or Landowner Meetings (# meetings when stormwater topic is discussed). | 2021-25 |
| **Topic 2:** Stormwater Related Ordinance and/or Updates.<br>**Participants:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Public Meetings (# meetings when stormwater ordinance is discussed, created or amended). | 2021-25 |
| **Topic 3:** MS4 Annual Report.<br>**Participants:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Public Meetings (# attendees for MS4 Annual Report presention to elected officials). | 2021-25 |
| **Topic 4:** Volunteer Opportunities.<br>**Participants:** Contractor, Public, Town Employee, Resident, School, Business, Developer, Industry, Other<br>**Delivery Mechanism:** | |
| Volunteer Events (# events, # participants) – Park Cleanup, Adopt-A-Street, Storm Drain Stenciling | 2021-25 |

# CHAPTER 5 –
# ILLICIT DISCHARGE DETECTION & ELIMINATION

## Goals & Objectives

Develop an illicit discharge detection and elimination program to remove illicit connections and discharges from the municipal separate storm sewer system (MS4). A thorough awareness of the MS4 system is important to the success of an illicit discharge program. Awareness allows the MS4 operator to locate problem areas, find the source, and eliminate the discharge.

Potential sources of illicit discharge include failing septic systems, illegal business discharges, improper disposal of marina and campground sewage, overflows from sanitary sewer systems, illegal plumbing connections, illegal dumping of waste materials, and spills associated with roadway accidents and industrial activity. Illicit discharges can contribute high levels of pollutants, toxins, oil, grease, solvents, nutrients, viruses, and bacteria to receiving waterbodies. Pollutant levels from illicit discharges are concentrated and may be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

Non-stormwater discharges or flows that are not considered illicit discharges include water line flushing, landscape irrigation, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, firefighting, and discharges authorized under a WPDES permit unless identified by the Town as a significant source of pollutants to waters of the state.

It's of note that the Town of Vinland currently does not have any public drinking water systems, public sanitary sewer systems or public storm sewer systems.

## Program Development

The Town adopted an illicit discharge detection and elimination ordinance. The purpose of the ordinance is to prevent and eliminate illicit discharges to the municipal separate storm sewer system (MS4). A copy of the illicit discharge ordinance is provided in Appendix E. Generally, the illicit discharge ordinance requires the following:

- No discharging, spilling, or dumping of non-stormwater substances and materials into waters of the state or the MS4 system.
- Identifies non-stormwater discharges or flows that are not considered illicit discharges.
- Establishes inspection, monitoring, sampling and enforcement authority.

The Town established forfeitures and fines for the illicit discharge ordinance. The purpose of the forfeitures and fines is to encourage compliance with the ordinance. A copy of the Fee Schedule for the Illicit Discharge Detection & Elimination Program is provided in Appendix E.

The Town developed various policies and procedures to assist with implementation of the illicit discharge detection and elimination program. The policies and procedures include the following:

1. On-Going Field Screening: Procedures for conducting on-going field screening of outfalls during dry weather periods are provided in Appendix E. The Town Board is responsible for coordinating and performing the on-going field screening of outfalls. The Town Board may rely on the Town's Contracted Consulting Engineer to perform the on-going field screening on an as-needed basis.

2. Routine Inspections: In addition to the on-going field screening, the Town searches for illegal connections and sanitary leakage by conducting routine plumbing and septic system inspections. The Town Building Inspector is responsible for performing the routine plumbing inspections. Winnebago County is responsible for coordinating the routine septic system inspections.

3. Responding to Illicit Discharges: Procedures for responding to known or suspected illicit discharges are provided in Appendix E. The Town Board or Town's Contracted Consulting Engineer (if performing screening) is responsible for coordinating the response to known or suspected illicit discharges and spills. The procedures include investigating the source of an illicit discharge or spill, responding to spills, preventing and containing spills, notifying the DNR of spills that may discharge into waters of the state, eliminating sanitary leakage into the MS4, notifying the DNR of dye testing, and notifying adjacent municipalities of illicit discharges that may enter their MS4 system.

4. Enforcement Actions: When a non-compliance issue is identified, the municipal representative first attempts to call or speak with the responsible party. For a minor non-compliance issue, the inspector will provide a verbal or written "Warning Notice" or deadline for correcting the non-compliance. The majority of non-compliance issues will likely be corrected in this manner. If the "Warning Notice" deadline is not met, the inspector will send a written "Notice of Violation" to the responsible party. The "Notice of Violation" will outline the required actions to be completed by a specific date and time in order to avoid enforcement actions. Enforcement actions will depend on the type and severity of non-compliance. Typically, enforcement actions will include citations and forfeitures. Citations and forfeitures will continue until the municipal inspector determines the site is compliant. Each day of non-compliance can be considered a new violation. For blatant, intentional, repetitive or severe non-compliance issues, the Town has authority to immediately initiate enforcement actions, without prior notice. Other potential enforcement actions include "Cease and Desist Orders", suspending storm sewer access, suspending water supply access, suspending sanitary sewer access, and issuing a "Notice of Intent" that the Town intends to perform emergency work. Costs associated with emergency work will be billed to the responsible party or charged to the tax roll as a special assessment.

5. Information Submitted by the Public: Information submitted by the public can be recorded on the form provided in Appendix E and forwarded to the Town Clerk for documentation and follow-up. Follow-up activities may consist of reviewing the MS4 map, requesting a copy of plumbing plans, conducting site inspections, performing field tests, and/or initiating enforcement actions. Follow-up activities will be documented with written reports.

The Town prepared a municipal separate storm sewer system (MS4) map depicting the location of outfalls and receiving waterbodies. The map also depicts how the MS4 system is interconnected. The MS4 system is depicted in Figures 6 through 10 in Appendix B. Land uses which discharge into the MS4 system are depicted in Figure 12.

**Program Implementation**

Each element of the illicit discharge detection and elimination program is described below including Best Management Practices (BMP) and measurable goals. As indicated below, the illicit discharge program is integrated with the other five minimum control measures. The proposed BMPs and measurable goals were selected after considering the permit requirements and the uniqueness of the Town. The purpose of the measurable goals is to track program implementation and guage effectiveness of the overall program.

| Illicit Discharge Detection & Elimination | Count |
|---|---|
| **BMP:** Conduct on-going field screening of MS4 outfalls.<br>**Measurable Goals:**<br>▪ Number of total MS4 outfalls.<br>▪ Number of MS4 outfalls evaluated during routine ongoing field screening program.<br>▪ From routine field screening, number of MS4 outfalls with confirmed illicit discharges.<br>▪ Number of illicit discharge complaints received.<br>▪ From complaints received, number of MS4 outfalls with confirmed illicit discharges.<br>▪ Number of identified illicit discharges eliminated during reporting year. | |
| **BMP:** Enforce the illicit discharge ordinance & remove illicit discharges from the MS4.<br>**Measurable Goals:**<br>▪ Number of verbal Warning Notices issued.<br>▪ Number of written Warning Notices issued, including emails.<br>▪ Number of Notices of Violation issued.<br>▪ Number of Civil Penalties / Citations issued. | |

# CHAPTER 6 –
# CONSTRUCTION SITE POLLUTANT CONTROL

## Goals & Objectives

Develop a construction site pollutant control program to reduce the discharge of sediment and construction materials into local streams, rivers and lakes. Common construction site pollutants include sediment, discarded building materials, concrete truck washout, chemicals, litter and sanitary waste. Of these pollutants, sediment is typically of greatest concern. According to the US Environmental Protection Agency (EPA), the sediment load from a construction site is typically 10 to 20 times greater than farmland and 1,000 to 2,000 times greater than a forest. Sediment and pollutants from construction sites can cause physical, chemical and biological harm to our waterbodies.

## Program Development

Winnebago County adopted a construction site erosion control ordinance and administers the ordinance on behalf of the Town. The purpose of the ordinance is to require erosion and sediment controls at all construction sites and a permit application for sites with 4,000 square feet or more of land disturbance; 400 cubic yards or more of excavation or filling; public or private access drives, street, highway, road or bridge construction, enlargement, reloation or reconstruction longer than 125 feet; laying, repairing, replacing or enlarging of an udergrround pipe or facility for a continuous distance of 100 feet or more; construction of a structure greater than 1,000 square feet; construction of any addition to a structure greater than 1,000 square feet; and construction of multiple addtions and/or structures where the total area combined is greater than 1,000 square feet. A copy of the ordinance is provided in Appendix F. The ordinance establishes sanctions to ensure compliance and provides the necessary inspection and enforcement authority. Generally, the construction site erosion control ordinance requires best management practices to:

- Prevent or reduce deposition of soil from being tracked onto streets by vehicles.
- Prevent or reduce discharge of sediment from disturbed areas into stormwater inlets, adjacent waters of the state, drainageways that flow offsite, dewatering activities, and soil stockpiles existing for more than 7 days.
- Prevent or reduce discharge of onsite chemiccals, cement, and other building materials into waters of the state or storm sewers.
- For sites with one acre or more of land disturbing construction activity, by design, discharge no more than five tons per acre per year of sediment from the site.
- Comply with DNR Technical Standards for best management practices.
- Prepare and implement an erosion and sediment control plan.

Winnebago County created dedicated funding sources to financially support the construction site pollutant control program.

Winnebago County developed various policies and procedures to assist with implementation of its construction site pollutant control program. The policies and procedures include the following:

1. Permit Application: The permit application, Erosion & Sediment Control Plan, and application fee are submitted to the County Zoning Department's Office. A copy of the County's permit application is provided in Appendix F. The County Zoning Department's Office processes the application and forwards to the County's Construction Site Erosion Control Technician for review. The Town follows the same application process for municipal projects.

2. Plan Review: Each permit application and Erosion & Sediment Control Plan is reviewed for compliance with the construction site erosion control ordinance, Reference Guides, and DNR Technical Standards. The County's Construction Site Erosion Control Technician conducts the review for 1 and 2 family residential dwellings. The County's Construction Site Erosion Control Technician or Consulting Engineer conducts the review for other sites, based on the site's complexity. Plan review letters and the issued permit are forwarded to the permit applicant. The number of plan reviews will depend on the submittal quality. Meetings between the applicant, designer, and plan reviewer are encouraged during the pre-design, design, and plan review process. The meetings are used to educate each other about regulatory requirements, environmentally sensitive areas, and design challenges. The number of meetings is typically commensurate with the size and complexity of the project. Meetings can be face-to-face, virtual, or via telephone.

3. Financial Guarantee: A financial guarantee may be required for sites with 1 acre or more of land disturbance. The financial guarantee includes the estimated cost of erosion and sediment control practices, site inspections, project administration, and contingencies. The County Zoning Department may release portions of the financial guarantee as the construction project progresses. The last portion of the financial guarantee is not typically released until the County's Construction Site Erosion Control Technician performs a final site inspection.

4. Permit Issuance: Winnebago County issues an approval letter and/or certificate to the permit applicant, after the plans are approved. The applicant is required to post the permit in a conspicuous place at the site, until construction is completed. The County's Construction Site Erosion Control Technician tracks the number of erosion control permits issued within the Town on an annual basis.

5. Construction Site Inspections: The applicant is required to inspect the construction site each week and after a rainfall of ½ inch or more. In addition, the County's Construction Site Erosion Control Technician observes each site about once a month during the period starting March 29 and ending November 25 (at least once every 45 days for active sites and once every 60 days for inactive sites). Follow up inspections are performed by the County's Construction Site Erosion Control Technician within 7 days of an inadequate control measure or a sediment discharge. In addition, a final

inspection is performed by the County's Construction Site Erosion Control Technician to verify the site has reached final stabilization. The County's Construction Site Erosion Control Technician may inspect sites more frequently after storm events, during a mild winter, when adjacent to a sensitive area, and during enforcement actions. Both the applicant and County's Construction Site Erosion Control Technician document inspections with written reports. The County's Construction Site Erosion Control Technician inspects 1 and 2 family dwellings and other projects, including subdivisions or commercial developments. The County's Construction Site Erosion Control Technician tracks the number of construction site inspections performed within the Town on an annual basis.

6. Enforcement Actions: For a minor non-compliance issue, the County's Construction Site Erosion Control Technician will provide a verbal or written "Warning Notice" for correcting the non-compliance. Most non-compliance issues are corrected in this manner. If the non-compliance is blatant, intentional, or not corrected in a timely manner, the County's Construction Site Erosion Control Technician will post a "Stop Work Order" or send a written "Notice of Violation" which outlines the required actions to be completed by a specific date and time. Enforcement actions will depend on the type and severity of non-compliance. Typically, enforcement actions will include forfeitures. Stop work orders, citations, and forfeitures will continue until the County's Construction Site Erosion Control Technician determines the site is compliant. Each day of non-compliance can be considered a new violation. Other potential enforcement actions include permit revocation, "Cease and Desist Orders", and issuing a "Notice of Intent" that the County/Town intends to perform emergency work.

7. Information Submitted by the Public: Information submitted by the public can be recorded on the form provided in Appendix F and submitted to the Town Clerk and/or County Construction Site Erosion Control Technician for documentation and follow-up. Follow-up activities may consist of contacting the landowner, verifying permit coverage, reviewing plans, requesting a copy of weekly inspection reports, conducting a site inspection, and/or initiating enforcement actions. Follow-up activities will be documented with written reports and filed with the permit.

**Program Implementation**

Each element of the construction site pollutant control program is described below including Best Management Practices (BMP) and measurable goals. As indicated below, the construction site pollutant control program is integrated with the other five minimum control measures. The proposed BMPs and measurable goals were selected after considering the permit requirements. The purpose of the measurable goals is to track program implementation and guage effectiveness of the overall program.

| Construction Site Pollutant Control | Count |
|---|---|
| **BMP:** Review permit applications and erosion control plans.<br>**Measurable Goals:**<br>▪ Number of total active construction sites (> 1 acre) during reporting year.<br>▪ Number of constructions sites (> 1 acre) issued a permit during reporting year. | |
| **BMP:** Conduct municipal construction site erosion control inspections.<br>**Measurable Goals:**<br>▪ Number of construction site inspections performed by the Town during reporting year. | |
| **BMP:** Enforce the construction site erosion control ordinance.<br>**Measurable Goals:**<br>▪ Number of sites with no enforcement authority.<br>▪ Number of verbal Warning Notices issued.<br>▪ Number of written Warning Notices issued, including emails.<br>▪ Number of Notices of Violation issued.<br>▪ Number of Stop Work Orders issued.<br>▪ Number of Civil Penalties / Citations issued.<br>▪ Number of Forfeitures of Deposit (cash escrow, bond, letter of credit, etc.). | |

# CHAPTER 7 –
# POST-CONSTRUCTION STORMWATER MANAGEMENT

## Goals & Objectives

Develop a post-construction stormwater management program to control runoff quality and quantity from areas of new development and redevelopment, after construction is completed. Urban development increases the amount of impervious surfaces as farmland, forests and grasslands are converted to buildings, parking lots and streets. Impervious surfaces reduce subsurface infiltration and increase surface water runoff. As stormwater washes over impervious surfaces, pollutants are picked up and the speed of runoff increases. The resulting stormwater flows are higher in flow rate, volume, pollutants and temperature. Uncontrolled runoff may cause stream erosion, flooding, algae, bacteria and aesthetic problems within streams, rivers and lakes.

## Program Development

Winnebago County adopted a post-construction stormwater management ordinance and administers the ordinance on behalf of the Town. A copy of the stormwater ordinance is provided in Appendix G. The ordinance establishes sanctions to ensure compliance and provides the necessary inspection and enforcement authority. Generally, the post-construction stormwater management ordinance requires the following for sites with 15,000 square feet or more of impervious surface disturbance or 1 acre or more of land disturbance:

- Reduce sediment by 80% for new development and 40% for redevelopment. Also, if more stringent, reduce sediment and phosphorus in conformance with Total Maximum Daily Load.
- Control 1, 2, 10 and 100-year peak discharge rates based on a meadow or woodland land use.
- Infiltrate runoff for new development if one acre or more of land disturbance.
- Create buffers along streams, rivers, lakes, wetlands and channels.
- Prevent visible petroleum sheen in stormwater runoff.
- Comply with DNR Technical Standards.
- Prepare a Stormwater Management Plan and Operation & Maintenance Plan.
- Prepare a long-term maintenance agreement and record at Register of Deeds.

Winnebago County created dedicated funding sources to financially support the post-construction stormwater management program.

Winnebago County developed various policies and procedures to assist with implementation of the post-construction stormwater management program. The policies and procedures include the following:

1. Permit Application: The permit application, construction plans, stormwater management plan, operation & maintenance plan, long-term maintenance agreement, and application fee are submitted to the County Zoning Department's Office. A copy of the County's permit application is provided in Appendix G. The County Zoning Department's Office processes and forwards the permit application, construction plans, stormwater management plan, operation & maintenance plan, and long-term maintenance agreement, to an Engineering Consultant (a 3rd party Professional Engineer) for review and approval.

2. Plan Review: Each permit application, construction plans, stormwater management plan, operation & maintenance plan and long-term maintenance agreement is reviewed for compliance with the stormwater management ordinance, Reference Guides, and DNR Technical Standards. RA Smith conducts plan reviews for 1 and 2 family dwellings and other projects, including subdivisions or commercial developments. The Town sometimes will request that the Town's Contracted Consulting Engineer conduct an additional review of the construction plans, stormwater management plan, operation & maintenance plan, and long-term maintenance agreement for more complex sites. Meetings between the applicant, designer, and plan reviewer are encouraged during the pre-design, design, and plan review process. The meetings are used to educate each other about regulatory requirements, environmentally sensitive areas, and design challenges. The number of meetings is typically commensurate with the size and complexity of the project. Meetings can be face-to-face, virtual, or via telephone. The number of plan reviews will depend on the submittal quality.

3. Operation & Maintenance Agreement: An operation and maintenance agreement is required for sites with 15,000 square feet or more of impervious surface disturbance or sites with 1 acre or more of land disturbance. A copy of the County's maintenance agreement is provided in Appendix G. The County Zoning Department's Office records the maintenance agreement with the County Register of Deeds Office. The maintenance agreement is signed and recorded prior to permit issuance.

4. Financial Guarantee: A financial guarantee may be required for the estimated cost of stormwater management facilities and contingencies. The County Zoning Department's Office may release portions of the financial guarantee as the project progresses. The last portion of the financial guarantee may not be released until a final inspection is performed, the maintenance agreement is recorded, and the record drawings are approved.

5. Permit Issuance: Once a design is reached that satisfies the County Ordinance requirements, the County's Consulting Engineer issues an approval letter to the applicant, Town Clerk and County Zoning Department. The County Zoning Department then records the maintenance agreement and issues an approval letter and/or certificate to the permit applicant. The applicant is required to post the permit in a conspicuous place at the site, until construction is completed.

6. Project Completion Process: After a project is constructed, County's Consulting Engineer completes a final inspection of the property. After the final inspection is completed and accepted by the

County's Consulting Engineer, two copies of a PE stamped record drawing are required to be submitted to the County Zoning Department and County's Consulting Engineer. The County's Consulting Engineer reviews the record drawing and issues an approval letter if the site satisfies the County design requirements.

7. Tracking Long-Term Operation & Maintenance: The County Zoning Department and Town Clerk tracks long-term maintenance of private stormwater facilities. As required by the County maintenance agreement, the facility owner is required to perform routine inspections, conduct maintenance, and document activities in maintenance logs and submit annually to the County.

   In addition, the Town requires each facility owner to submit a postcard each year, which certifies the required maintenance has been completed. The Town Clerk or Town Board also plans to conduct an inspection or audit of 5% of privately owned stormwater management facilities within the permit term and prepares an inspection report. The Town may rely on the Town's Contracted Consulting Engineer to assist with inspections on an as-needed basis. A copy of the Town Board inspection report is provided to the facility owner, with directions to correct deficiencies by a specified date if needed.

8. Enforcement Actions: For a minor non-compliance issue, the County Zoning Department will provide a verbal or written "Warning Notice" for correcting the non-compliance. Most non-compliance issues will be corrected in this manner. The written notice will outline the required actions to be completed by a specific date and time to avoid enforcement action. Enforcement actions will depend on the type and severity of non-compliance. Typically, enforcement actions will include "Notices of Violation", citations and penalty fees. Violations, citations, and penalty fees will continue until the Town inspector determines the site is compliant. Each day of non-compliance can be considered a new violation. For blatant, intentional, repetitive, or severe non-compliance issues, the County Zoning Department has authority to immediately issue a written "Notice of Violation" and/or initiate enforcement actions without prior notice. Other potential enforcement actions may include permit revocation, "Cease and Desist Orders", and issuing a "Notice of Intent" that the Town intends to perform emergency work. Costs are billed to the responsible party or charged to the tax roll.

9. Information Submitted by the Public: Information submitted by the public can be recorded on the form provided in Appendix G and forwarded to the Town Clerk and/or County Zoning Department for documentation and follow-up. Follow-up activities may consist of contacting the facility owner, reviewing plans, requesting maintenance logs, reviewing inspection reports, conducting Town inspections, or initiating enforcement actions. Follow-up activities will be documented with written reports and filed with the permit.

**Program Implementation**

Each element of the post-construction stormwater management program is described below including Best Management Practices (BMP) and measurable goals. As indicated below, the post-construction program is integrated with the other five minimum control measures. The proposed BMPs and measurable goals were selected after considering the permit requirements. The purpose of the measurable goals is to track program implementation and guage effectiveness of the overall post-construction stormwater management program.

| Post-Construction Stormwater Management | Count |
|---|---|
| **BMP:** Review permit applications, stormwater management plans, and maintenance agreements.<br>**Measurable Goals:**<br>▪ Number of sites that received approval for a new structural stormwater management facility. | |
| **BMP:** Track long-term maintenance of stormwater management facilities.<br>**Measurable Goals:**<br>▪ Number of privately owned stormwater management facilities inspected in reporting year. | |
| **BMP:** Enforce the post-construction stormwater management ordinance.<br>**Measurable Goals:**<br>▪ Number of sites with no enforcement authority.<br>▪ Number of verbal Warning Notices issued.<br>▪ Number of written Warning Notices issued, including emails.<br>▪ Number of Notices of Violation issued.<br>▪ Number of Civil Penalties / Citations issued.<br>▪ Number of Forfeitures of Deposit (cash escrow, bond, letter of credit, etc.).<br>▪ Number of sites with completed stormwater facility maintenance during reporting year.<br>▪ Number of sites that Town performed maintenance and billed the responsible party. | |

# CHAPTER 8 - MUNICIPAL POLLUTION PREVENTION

## Goals & Objectives

Develop a municipal pollution prevention program to reduce the amount and type of pollution that (1) collects on municipally owned streets, parking lots, open spaces, storage areas, and vehicle maintenance areas, and (2) results from poor maintenance of municipally owned flood control facilities and storm sewer systems. The goal is to modify existing municipal operations to improve stormwater quality and protect receiving waters.

## Program Development

The Town utilizes it's general fund to financially support the municipal stormwater program, including municipal pollution prevention.

The Town developed various policies and procedures to assist with implementation of the municipal pollution prevention program. The policies and procedures include the following:

1. Structural BMPs: The Town Board is responsible for routine inspection and maintenance of Town-owned or operated structural best management practices (BMPs). The Town currently owns and operates one structural best management practice. A stormwater pond is constructed at the Town Hall but is located outside of the developed urban area. The Town Board utilizes the inspection and maintenance forms provided in Appendix H when conduting an inspection. See Chapter 7 – Post-Construction Stormwater Management for the Town's plan for tracking long-term maintenance and inspection procedures for private facilities. In the future, the Town may construct additional structural BMPs to achieve the TMDL sediment and phosphorus reductions.

2. Grass Swales: The Town Board is responsible for routine inspection and maintenance of Town owned or operated grass swales. The location of grass swales are depicted in Figure 10. The grass swales improve surface water quality for purposes of the TMDL sediment and phosphorus reductions.

3. Street Sweeping: The Town does not own or operate any roads with curb and gutter.

4. Catch Basin Cleaning: The Town does not own or operate any catch basin sumps.

5. Snow Storage: The Town Board is responsible for coordinating snow plowing along Town roads. The Town currently contracts with a private company and/or Winnebago County for snow plowing services. Snow is typically plowed and stored along streets until the spring melt. Snow is not loaded on trucks and hauled to a snow storage site.

6. Deicers: The Town Board is responsible for coordinating the proper application of road salt and other de-icers. The Town currently contracts with a private company and/or Winnebago County for deicing services. Currently, the Town uses salt granules, salt/sand mix, and brine for deicing. Typically, the Town only applies salt at street intersections, curves and along steep slopes. The Town contracts for deicing and as such, does not own a salt shed. Currently, the Town does not have a predetermined application rate for salt. Over the next five years, the Town plans to ask the County to compare salt application rates and equipment calibration to guidance contained in Chapter 6 of the DOT "Highway Maintenance Manual" (see Appendix H for a copy).

7. Leaves & Grass Clippings: Property owners are responsible for proper leaf, grass clipping and brush management. The Town allows property owners to compost materials onsite, contract with a private company or haul materials to an offsite municipal disposal site such as Winnebago County. The Town does not provide a collection service or operate a municipal compost / yard waste program.

8. Town Hall: The Town Board is responsible for managing stormwater pollution at the Town Hall. The Town Hall is not located in the study area. Rather, the Town Hall is located at 6085 County Highway "T". Municipal vehicles, equipment and other materials are stored at the Town Hall. The following Best Management Practices (BMP) are utilized:
   - Buildings are locked to prevent unauthorized access.
   - Vehicles and equipment are stored indoors, when feasible.
   - Vehicles and equipment are washed indoors and/or at an off-site facility, when feasible. Soil clumps are removed from vehicles and equipment prior to washing.
   - Vehicles and equipment are typically maintained offsite by a private vendor.
   - Adsorbent cleanup materials are kept onsite at all times for potential spills.
   - Vehicle fuel is purchased from a private vendor and stored offsite.
   - Fertilizers, pesticides, chemicals, solvents, paints, & other hazardous materials are stored in clearly marked, sealed containers. Containers are stored indoors.
   - Garbage & other wastes are stored in dumpsters. Dumpster lids are kept closed.
   - A wet detention pond is located at the Town Hall.

9. Fertilizers: The Town Board is responsible for coordinating the soil testing before applying fertilizer to Town controlled properties with more than 5 acres of pervious area. Currently, the Town does not apply fertilizer to any Town controlled properties with 5 acres or mor of turf area.

10. Litter Control: The Town provides the following municipal services to reduce the amount of litter within streams, rivers, lakes, wetlands, wooded areas, and detention ponds:
    - Residential garbage is collected curb-side once every week. The Town uses garbage receptibles that have a lid to reduce litter caused by animals and wind.
    - Residential recycling is collected curb-side once every week. The Town uses recycling receptibles that have a lid to reduce litter caused by animals and wind.

- White goods are dropped off at the landfill or a private facility by landowners. The program prevents improper disposal of white goods and bulky items.
- The Town has a animal feces and littering ordinances to support the municipal pollution prevention program. The ordinances establish sanctions to ensure compliance and provide the necessary enforcement authority. Copies of the Town's animal feces and littering ordinances are provided in Appendix H.

11. Employee Training: The Town Board is responsible for coordinating the training of municipal employees and other personnel about municipal pollution prevention and good housekeeping practices. Potential training topics include structural BMP maintenance, grass swales, street sweeping, catch basin cleaning, snow storage, deicers, leaves, grass clippings, municipal garages, vehicle / equipment maintenance, hazardous spills, illegal connections, illicit discharges, fertilizers, pet waste, litter control, well head protection, and information from the public. NEWSC plans to develop some of these training materials. A worksheet to track employee training is provided in Appendix H.

**Program Implementation**

Each element of the municipal pollution prevention program is described below including Best Management Practices (BMP) and measurable goals. As indicated below, the municipal pollution prevention program is integrated with the other five minimum control measures. The proposed BMPs and measurable goals were selected after considering the permit requirements and the uniqueness of the Town. The purpose of the measurable goals is to track program implementation and guage effectiveness of the overall municipal pollution prevention program.

| Municipal Pollution Prevention | Count |
|---|---|
| **BMP:** Conduct routine inspections & maintenance of municipally owned stormwater facilities.<br>**Measurable Goals:**<br>▪ Number of municipally owned or operated structural stormwater facilities.<br>▪ Number of new municipally owned or operated stormwater facilities installed in the reporting year.<br>▪ Number of municipally owned or operated stormwater facilities inspected in the reporting year.<br>▪ Of the inspected facilities, number of municipally owned stormwater facilities requiring maintenance. | |
| **BMP:** Prepare a Stormwater Pollution Prevention Plan (SWPPP) for municipal garages and yards.<br>**Measurable Goals:**<br>▪ Number of municipal properties required to have a SWPPP.<br>▪ Number of inspections of municipal properties with a SWPPP during reporting year. | |
| **BMP:** Conduct routine street sweeping where appropriate. Properly dispose of waste.<br>**Measurable Goals:**<br>▪ Frequency of street sweeping completed during reporting year (March 29 to November 25).<br>▪ Tons of street sweeping waste collected during reporting year. | |
| **BMP:** Conduct routine catch basin cleaning where appropriate. Properly dispose of waste.<br>**Measurable Goals:**<br>▪ Number of catch basin sumps cleaned during reporting year (March 29 to November 25).<br>▪ Tons of catch basin waste collected during reporting year. | |
| **BMP:** Properly manage leaves where appropriate.<br>**Measurable Goals:**<br>▪ If collection is offered, frequency of curbside leaf collection. | |
| **BMP:** Apply road salt and other products only as necessary to maintain public safety during winter.<br>**Measurable Goals:**<br>▪ Number of lane-miles that Town is responsible for snow and ice control.<br>▪ Tons of salt applied per month (October to March).<br>▪ Tons of sand applied per month (October to March).<br>▪ Tons of salt/sand mix applied per month (October to March).<br>▪ Gallons of brine applied per month (October to March).<br>▪ Gallons of chem-melt applied per month (October to March).<br>▪ Gallons of beet juice applied per month (October to March).<br>▪ Gallons of pre-wetting compound applied per month (October to March). | |
| **BMP:** Conduct nutrient management planning for municipally controlled properties where appropriate.<br>**Measurable Goals:**<br>▪ Number of Town controlled properties with > 5 acres of turf area that are fertlilzed. | |
| **BMP:** Educate municipal employees about stormwater pollution prevention.<br>**Measurable Goals:**<br>▪ Number of municipal employees trained during reporting year. | |

# 9.0 - STORMWATER QUALITY MANAGEMENT

The Town's 2008 stormwater quality management plan is provided in a separate report and is on file with the WDNR. The Town's 2008 stormwater quality management plan indicates the Town is satisfying NR 151.13 (20% TSS reduction). The Upper Fox and Wolf River Basin TMDL was approved on February 27, 2020 and includes the Lake Winnebago Sub-Watershed. The Town is required to submit a TMDL water quality analysis / stormwater management plan to the WDNR by February 27, 2023 that summarizes the pollutant load reductions provided by Town BMP's within the Lake Winnebago Sub-Watershed. If the TMDL water quality analysis / stormwater management plan indicates the Town is not achieving the required TMDL pollutant load reductions, the Town is required to submit a written TMDL Implementation Plan to the WDNR by February 27, 2024.

# 10.0 - IMPLEMENTATION PLAN

Below are various items for the Town to consider when implementing the Stormwater Management Plan and working toward MS4 Permit compliance.

**Plan Adoption**

The Stormwater Management Plan should be accepted by the Town Board. After the plan is accepted, it should be forwarded to the DNR for review and approval. The DNR will review the plan for compliance with MS4 Permit regulations.

**Compliance Schedule**

The WPDES Municipal Stormwater Discharge Permit (WI-S050075-3) contains a compliance schedule. The compliance schedule identifies when the Town needs to complete each required permit activity. The start date for the MS4 Permit is May 1, 2019.

**Public Education & Public Involvement**

The first step toward implementing the Stormwater Management Plan is to obtain public input from local stakeholders. Potential stakeholders include the general public, elected officials, Town Staff, developers, environmentalists, regulatory entities, and individual property owners. Although the Stormwater Management Plan includes a cost versus benefit analysis for each water quality alternative, the plan does not take into consideration intangibles such as public sentiment and public opinion.

**Capital Improvement Plan**

Develop a capital improvement plan based on the Stormwater Management Plan and the Town's permit compliance schedule. We recommend that the capital improvement plan include ample time for public education, public input, BMP design, land acquisition, regulatory permits, grant applications, financing, and construction. The capital improvement plan should also take into consideration other local capital improvement projects, such as street reconstruction projects, utility projects, and private development projects. We recommend the Town explore all potential opportunities to partner with other public and private entities.

1. BMP Design

   McMahon Associates, Inc. recommends that BMP design, regulatory permits, and land acquisition be conducted in a succinct manner. Some of the proposed BMP retrofit sites may not be feasible due to soil contamination, wetlands, floodplains, endangered species,

archeological resources, or some other unknown site factor. It is better to understand these challenges before the property is purchased by the Town.

2. Land Acquisition

McMahon Associates, Inc. recommends that Town Staff begin discussions with property owners and businesses that may be impacted by one or more of the proposed wet detention ponds. Some of the wet detention ponds are intentionally located on vacant parcels that are currently for sale. The land acquisition required for a specific pond may become more difficult if the property is sold to another entity.

McMahon Associates, Inc. recommends that the Town contact local businesses that have a potential BMP retrofit proposed on their property. The open space areas that are identified for the BMP may be reserved for future business expansions.

McMahon Associates, Inc. recommends that these discussions be pursued by Town Staff as soon as practical. These discussions may eliminate one or more of the proposed wet pond retrofits from consideration.

3. Regulatory Permits

McMahon Associates, Inc. recommends that regulatory agencies be contacted to discuss permits for potential BMP retrofits. Permits may be required from the Wisconsin DNR, US Army Corps of Engineers, and other regulatory agencies. Some of the proposed wet ponds are located adjacent to or within wetlands, navigable streams, lakes, 100-year floodplains, and other environmentally sensitive areas. Wet ponds located adjacent to or within one or more of these natural resource features will likely require detailed investigations and extensive timelines for permit approval. The regulatory agency may require wetland delineations, endangered or threatened species investigations, archeological investigations, soil investigations, groundwater or bedrock investigations, or 100-year flood studies.

## Financing Plan

McMahon Associates recommends the Town develop a financing plan. The financing plan will allow the Town to implement the Stormwater Management Plan and 5-year Capital Improvement Plan. Below is a discussion of various funding sources which may be available to the Town. Depending on the stormwater project, funding options may be used individually or in combination.

- Property Taxes: Property taxes and general funds may be used to pay for stormwater projects. Typically, property tax revenue and general funds are allocated to a specific stormwater project during the community's annual budget process.

- Debt / Bonds: General obligation and revenue bonds may be used to secure funding for stormwater projects. Property taxes and revenue fees are used for long-term debt payments.

- Special Assessments: Special assessments may be used to generate funds for a specific project. Property owners that benefit from the project pay the assessment fee. Typically, other funding sources are needed to pay for project costs until property owners pay the assessment.

- Impact Fees: Impact fees may be charged to developers for stormwater projects that benefit the development. Impact fees are usually paid during initial stages of development. Typically, projects include regional stormwater facilities or improvements to deficient downstream infrastructure. Often, other funding sources are needed to pay for project costs until developers and property owners are required to pay the impact fee.

- Tax Incremental Financing (TIF) District: TIF Districts may be used by Cities and Towns to fund stormwater projects that benefit property located within the District. Property value increases within the TIF District generate additional tax revenue that is used for long-term debt payments.

- Stormwater Utility: Stormwater utilities are similar to sanitary and water utilities. Stormwater utilities generate revenue for stormwater related projects by charging property owners an annual service fee. Annual service fees are based upon the amount of runoff generated by a specific property. Properties with more impervious area (i.e., roofs, parking lots, driveways, etc.) are charged a higher fee as compared to properties with less impervious area. All properties, including tax exempt properties, pay the service fee.

- Grants / Loans: State and federal grant / loans are available for certain stormwater projects. Typically, only a certain percent of the total project cost is eligible for grant / loan money with remaining revenues to be generated by the applicant. Below are a few grant / loan programs which the Town of Vinland may or may not be familiar with.
  - Urban Non-Point Source and Stormwater Construction Grant
  - Targeted Runoff Management Construction Grant
  - Great Lakes Basin Program
  - Community Development Block Grant
  - Clean Water Fund

# APPENDIX A

**WPDES Municipal Permit**

# *STATE OF WISCONSIN*
# *DEPARTMENT OF NATURAL RESOURCES*

## GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM
## WPDES PERMIT NO. WI-S050075-3

In compliance with the provisions of ch. 283 Wis. Stats., and chs. NR 151 and 216, Wis. Adm. Code, owners and operators of municipal separate storm sewer systems are permitted to discharge storm water from all portions of the

**MUNICIPAL SEPARATE STORM SEWER SYSTEM**

owned or operated by the municipality to waters of the state in accordance with the conditions set forth in this permit.

With written authorization by the Department, this permit will be used to cover a municipal separate storm sewer system initially covered under a previous version of a municipal separate storm sewer system general permit. The **Start Date** of coverage under this permit is the date of the Department letter sent to the municipality authorizing coverage under this permit. The Department is required to charge an annual permit fee to owners and operators authorized to discharge under this permit in accordance with s. 283.33(9), Wis. Stats., and s. NR 216.08, Wis. Adm. Code.

State of Wisconsin Department of Natural Resources
For the Secretary

By _____ 5/1/19

Michael C. Thompson, Director
Bureau of Watershed Management
External Services Division

Date Permit Signed

**PERMIT EFFECTIVE DATE:** May 1, 2019 **EXPIRATION DATE:** April 30, 2024

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## 1. APPLICABILITY CRITERIA

### 1.1 Permitted Area

This permit covers all areas under the ownership, control or jurisdiction of the permittee that contribute to discharges from a municipal separate storm sewer system (MS4) that receives runoff from any of the following:

**1.1.1** An urbanized area, adjacent developing areas and areas whose runoff is connected or will connect to a municipal separate storm sewer regulated under subch. I of NR 216, Wis. Adm. Code; or

**1.1.2** An area associated with a municipal population of 10,000 or more and a population density of 1,000 or more per square mile, adjacent developing areas and areas whose runoff is connected or will connect to an MS4 regulated under subch. I of NR 216, Wis. Adm. Code; or

**1.1.3** An area that drains to an MS4 that is designated for permit coverage pursuant to s. NR 216.02(2) or 216.025, Wis. Adm. Code.

### 1.2 Authorized Discharges

This permit authorizes storm water point source discharges from the MS4 to waters of the state in the permitted area. This permit also authorizes the discharge of storm water co-mingled with flows contributed by process wastewater, non-process wastewater, and storm water associated with industrial activity, provided the discharges are regulated by other WPDES permits or are discharges which are not considered illicit discharges pursuant to section 2.3.1 of this permit.

### 1.3 Water Quality Standards

**1.3.1** This permit specifies the conditions under which storm water may be discharged to waters of the state for the purpose of achieving water quality standards contained in chs. NR 102 through 105, NR 140, and NR 207, Wis. Adm. Code. For the term of this permit, compliance with water quality standards will be addressed by adherence to the requirements in this permit.

**1.3.2** This permit does not authorize discharges that the Department determines will cause or have reasonable potential to cause or contribute to an excursion above any applicable water quality standards. Where such determinations have been made, the Department may notify the municipality that an individual permit is necessary. However, the Department may authorize coverage under this permit where the storm water management programs required under this permit will include appropriate controls and implementation procedures designed to bring the storm water discharge into compliance with water quality standards.

### 1.4 Outstanding and Exceptional Resource Waters

**1.4.1** The permittee shall determine whether any part of its MS4 discharges to an outstanding resource water (ORW) or exceptional resource water (ERW). ORWs and ERWs are listed in ss. NR 102.10 and 102.11, Wis. Adm. Code.

**Note:** An unofficial list of ORWs and ERWs may be found on the Department's Internet site at: https://dnr.wi.gov/topic/SurfaceWater/orwerw.html

**1.4.2** The permittee may not establish a new MS4 discharge of a pollutant to an ORW or an ERW unless the storm water management programs required under this permit are designed to ensure that any new MS4 discharge of a pollutant to an ORW or ERW will not exceed background concentration levels within the ORW or ERW.

**1.4.3** If the permittee has an existing MS4 discharge to an ORW, it may increase the discharge of pollutants, either at the existing point of discharge or a new location, provided all of the following are met:

**a.** The pollutant concentration within the receiving water and under the influence of the existing discharge would not increase as compared to the level that existed prior to coverage under this permit.

**b.** The increased discharge would not result in a violation of water quality standards.

**1.4.4** If the permittee has an existing MS4 discharge to an ERW, it may increase the discharge of pollutants if the increased discharge would not result in a violation of water quality standards.

### 1.5 Impaired Waterbodies and Total Maximum Daily Load Requirements

**1.5.1** By March 31 of each odd-numbered year, the permittee shall determine whether any part of its MS4 discharges to an impaired waterbody listed in accordance with section 303(d)(1) of the federal Clean Water Act, 33 USC § 1313(d)(1)(C), and the implementing regulation of the US Environmental Protection Agency, 40 CFR § 130.7(c)(1). For a permittee that determines that any part of its MS4 does discharge to a listed impaired waterbody but for which there is no United States Environmental Protection Agency (USEPA) approved Total Maximum Daily Load (TMDL) for the pollutant of concern, the permittee shall include a written section in its storm water management program that discusses the management practices and control measures it will implement as part of its program to reduce, with the goal of eliminating, the discharge of pollutants of concern that contribute to the impairment of the waterbody. This section of the permittee's program shall specifically identify control measures and practices that will collectively be used to try to eliminate the MS4's discharge of pollutants of concern that contribute to the impairment of the waterbody and explain why these control measures and practices were chosen as opposed to other alternatives.

**Note:** Every two years, the Department updates and publishes a list of waters considered impaired under the Clean Water Act. The list is updated in even-numbered years. A list of Wisconsin impaired waterbodies may be found on the Department's Internet site at: http://dnr.wi.gov/topic/impairedwaters/

**1.5.2** For a permittee with an MS4 discharge of a pollutant of concern to a waterbody subject to an USEPA approved TMDL under which the permittee is assigned a Wasteload Allocation (WLA), the permittee shall meet the following requirements, in addition to the minimum control measures described within Section 2 of the permit:

**a.** Appendix A provides the permit conditions for permittees subject to the Rock River Basin TMDL, Lower Fox River Basin and Lower Green Bay TMDL, Lake St. Croix Nutrient

TMDL, Red Cedar River (Tainter Lake, Menomin Lake) TMDL, or Beaver Dam Lake TMDL. For a permittee subject to any of these TMDLs, the permittee shall comply with the provisions in Appendix A: MS4 Permittees Subject to a TMDL Approved Prior to May 1, 2014 including Applicable Updates.

**b.** Appendix B provides the permit conditions for permittees subject to the Milwaukee River Basin TMDL. For a permittee subject to this TMDL, the permittee shall comply with the provisions in Appendix B: MS4 Permittees Subject to Milwaukee River Basin TMDL.

**c.** Appendix C provides the permit conditions for permittees subject to the Wisconsin River Basin TMDL or any other TMDL approved on or after May 1, 2019. For a permittee subject to any of these TMDLs, the permittee shall comply with the provisions in Appendix C: MS4 Permittees Subject to the Wisconsin River Basin TMDL or a TMDL Approved After May 1, 2019.

**Note:** The reports for Department and USEPA approved TMDLs are available from the Department's Internet site at: https://dnr.wi.gov/topic/TMDLs/tmdlreports.html

**1.5.3** After the effective date of this permit, the permittee may not establish a new MS4 discharge of a pollutant of concern to an impaired waterbody or increase the discharge of a pollutant of concern to an impaired waterbody unless the new or increased discharge causes the receiving water to meet applicable water quality standards, or the USEPA has approved a TMDL for the impaired waterbody.

**1.6 Wetlands**

The permittee's MS4 discharge shall comply with the applicable wetland water quality standards provisions in ch. NR 103, Wis. Adm. Code.

**1.7 Endangered and Threatened Resources**

The permittee's MS4 discharge shall comply with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats., and ch. NR 27, Wis. Adm. Code.

**1.8 Historic Property**

The permittee's MS4 discharge may not affect any historic property that is listed property, or on the inventory or on the list of locally designated historic places under s. 44.45, Wis. Stats., unless the Department determines that the MS4 discharge will not have an adverse effect on any historic property pursuant to s. 44.40(3), Wis. Stats.

**1.9 General Storm Water Discharge Limitations**

In accordance with s. NR 102.04, Wis. Adm. Code, practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all surface waters including the mixing zone meet the following conditions at all times and under all flow and water level conditions:

**1.9.1** Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.

**1.9.2** Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.

**1.9.3** Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.

**1.9.4** Substances in concentrations or combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

**1.10 Obtaining Permit Coverage**

**1.10.1** The owner or operator of an MS4 covered under a previous version of an MS4 permit before the effective date of this permit shall be covered by this permit pursuant to written authorization by the Department.

**Note:** The Department will notify in writing the owner or operator of an MS4 covered under a previous version of an MS4 permit that this permit has been reissued and that the MS4 is covered under it. However, the City of Madison and the City of Milwaukee are not eligible for coverage under this permit.

**1.10.2** Coverage under this permit does not become effective until the Department sends the owner or operator a letter expressly authorizing coverage under this permit.

**1.11 Transfers**

Coverage under this permit is not transferable to another municipality without the express written approval of the Department. If the permittee's MS4 is annexed into another municipality, the permittee shall immediately notify the Department by letter of the change. If the permittee ceases to own or operate any MS4 regulated under this permit, the Department may terminate its coverage under this permit.

**1.12 Exclusions**

The following are excluded from coverage and are not authorized under this permit:

**1.12.1 Combined Sewer and Sanitary Sewer Systems**

Discharges of water from a sanitary sewer or a combined sewer system conveying both sanitary and storm water. These discharges are regulated under s. 283.31, Wis. Stats, and require an individual permit.

**1.12.2 Agricultural Facilities and Practices**

Discharges from agricultural facilities and agricultural practices. "Agricultural facility" means a structure associated with an agricultural practice. "Agricultural practice" means beekeeping; commercial feedlots; dairying; egg production; floriculture; fish or fur farming; grazing; livestock raising; orchards; poultry raising; raising of grain, grass, mint and seed crops; raising of fruits, nuts and berries; sod farming; placing land in federal programs in return for payments in kind; owning land, at least 35 acres of which is enrolled in the conservation reserve program under 16 USC § 3831 to 3836; and vegetable raising.

**1.12.3 Other Excluded Discharges**
Storm water discharges from industrial operations or land disturbing construction activities that require separate coverage under a WPDES permit pursuant to subchs. II or III of ch. NR 216, Wis. Adm. Code. For example, while storm water from industrial or construction activity may discharge to an MS4, this permit does not satisfy the need to obtain any other permits for those discharges. This exclusion does not apply to the permittee's responsibility to regulate construction sites within its jurisdiction in accordance with sections 2.4 and 2.5 of this permit.

**1.12.4 Indian Country**
Storm water discharges within Indian Country. The federal Clean Water Act requires owners and operators of storm water discharges within Indian Country in Wisconsin to obtain permit coverage directly from the USEPA.

**1.12.5 Non-MS4 Discharge**
Storm water discharges that do not enter an MS4.

**1.13 Compliance with Permit Requirements**
Compliance with the requirements contained in this permit including the applicable appendices shall not be contingent upon receiving financial assistance from the Department or any other public or private grant or loan program.

## 2. PERMIT CONDITIONS

This permit establishes the following measurable goals, with a compliance schedule in section 3, for the permittee to maintain compliance with the minimum control measures for their storm water management program described under sections 2.1 through 2.6. The following permit conditions apply to the permittee, unless the Department issues a written determination that a condition is not appropriate under the circumstances. The permittee shall have a written storm water management program that describes in detail how the permittee intends to comply with the permit requirements for each minimum control measure. The permittee shall begin implementing any updates to its storm water management programs no later than March 31, 2021.

### 2.1 Public Education and Outreach

The permittee shall maintain its public education and outreach program to increase the awareness of storm water pollution impacts on waters of the state and to encourage changes in public behavior to reduce such impacts. The permittee shall implement the following measurable goals:

**2.1.1 Topics.** The permittee shall address all eight topics in Table 1 at least once during the permit term. Permittees that are a County shall address a minimum of six topics each year. Permittees that are a City, Village, Town, or University with a population of 5,000 or more based on the latest U.S. Census shall address a minimum of six topics each year. Permittees that are a City, Village, Town, or University with a population less than 5,000 based on the latest U.S. Census shall address a minimum of four topics each year. Topics may be repeated as necessary. Permittees shall select from the topic areas in Table 1.

**Note:** Universities should average its enrolled student population plus employee population over a recent ten-year period to determine which requirement it should follow for permit compliance. Universities are also expected to undertake public education efforts that reach the entire student body and staff.

**Table 1: Public Education and Outreach Topic Areas and Descriptions**

| # | Topic Area | Description |
|---|---|---|
| 1 | Illicit Discharge Detection and Elimination | Promote detection and elimination of illicit discharges and water quality impacts associated with such discharges from municipal separate storm sewer systems. |
| 2 | Household Hazardous Waste Disposal/Pet Waste Management/Vehicle Washing | 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. |
| 3 | Yard Waste Management/Pesticide and Fertilizer Application | Promote beneficial onsite reuse of leaves and grass clippings and proper use of lawn and garden fertilizers and pesticides. |
| 4 | Stream and Shoreline Management | Promote the management of streambanks and shorelines by riparian landowners to minimize erosion and restore and enhance the ecological value of waterways. |

| | | |
|---|---|---|
| 5 | Residential Infiltration | Promote infiltration of residential storm water runoff from rooftop downspouts, driveways and sidewalks. |
| 6 | Construction Sites and Post-Construction Storm Water Management | Inform and 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. |
| 7 | Pollution Prevention | Identify businesses and activities that may pose a storm water contamination concern, and educate those specific audiences on methods of storm water pollution prevention. |
| 8 | Green Infrastructure/Low Impact Development | Promote environmentally sensitive land development designs by developers and designers, including green infrastructure and low impact development. |

**Note:** Additional information on green infrastructure and low impact development may be found on the USEPA's Internet site at: https://www.epa.gov/green-infrastructure

**2.1.2 Delivery mechanism.** The permittee shall use at least four public education delivery mechanisms each year. Permittees that are a City, Village, Town, or University with a population of 5,000 or more based on the latest U.S. census shall use at least two from the Active/Interactive Mechanisms column in Table 2 each year. Permittees that are a City, Village, Town, or University with a population less than 5,000 based on the latest U.S. census shall use at least one from the Active/Interactive Mechanisms column in Table 2 each year. Permittees that are a County shall use at least one from the Active/Interactive Mechanisms column in Table 2 each year."

**Note:** Universities should average its enrolled student population plus employee population over a recent ten-year period to determine which requirement it should follow for permit compliance. Universities are also expected to undertake public education efforts that reach the entire student body and staff.

**Table 2: Public Education and Outreach Delivery Mechanisms (Active and Passive)**

| Active/Interactive Mechanisms | Passive Mechanisms |
|---|---|
| • Educational activities (school presentations, summer camps)<br>• Informational booth at event<br>• Targeted group training (contractors, consultants, etc.)<br>• Government event (public hearing, council meeting)<br>• Workshops<br>• Tours<br>• Other | • Passive print media (brochures at front desk, posters, etc.)<br>• Distribution of print media (mailings, newsletters, etc.) via mail or email<br>• Media offerings (radio and TV ads, press release, etc.)<br>• Social media posts<br>• Signage<br>• Website<br>• Other |

**2.1.3 Target audience.** The permittee shall identify the target audience for each public education and outreach topic. Target audiences may include the general public, public employees, residents, businesses, contractors, developers, industries, and/or other appropriate audiences.

**2.2 Public Involvement and Participation**

The permittee shall maintain its public involvement and participation program, in compliance with applicable state and local public notice requirements, to notify the public of activities required by this permit and to encourage input and participation from the public regarding these activities. The permittee shall implement the following measurable goals:

**2.2.1 Permit activities.** The permittee shall provide a minimum of one opportunity annually for the public to provide input on each of the following permit activities: annual report, storm water management program, and if applicable, the adoption or amendment of storm water related ordinances.

**2.2.2 Delivery mechanism.** The permittee shall identify the public involvement and participation delivery mechanism for each permit activity in section 2.2.1. Delivery mechanisms may include public workshop, presentation of storm water information, government event (public hearing, council meeting, etc.), citizen committee meeting, or website.

**2.2.3 Volunteer activities.** The permittee shall implement at a minimum one of the following volunteer activities per year: group best management practice (BMP) installation or maintenance, storm drain stenciling, planting community rain garden, clean up event, stream monitoring, citizen committee meeting, public workshop, presentation of storm water information, or other hands-on event.

**2.2.4 Target participants.** The permittee shall identify the targeted participants for each permit activity and volunteer activity. Participants may include general public, public employees, residents, businesses, contractors, developers, industries, and/or other appropriate audience.

**2.3 Illicit Discharge Detection and Elimination (IDDE)**

The permittee shall continue to implement and enforce its program to detect and remove illicit connections and discharges to the MS4. The permittee shall implement the following measurable goals:

**2.3.1 IDDE ordinance.** An ordinance or other regulatory mechanism to prevent and eliminate illicit discharges and connections to the MS4. At a minimum, the ordinance or other regulatory mechanism shall:

**a.** Prohibit illicit discharges and the discharge, spilling or dumping of non-storm water substances or materials into waters of the state or the MS4.

**b.** Identify non-storm water discharges or flows that are not considered illicit discharges. Categories of non-storm water discharges that are not considered illicit discharges include water line flushing, landscape irrigation, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats

and wetlands, fire-fighting and discharges authorized under a WPDES permit. However, the occurrence of a discharge listed above may be considered an illicit discharge on a case-by-case basis if the permittee or the Department identifies it as a significant source of a pollutant to waters of the state.

**c.** Establish inspection and enforcement authority.

**Note:** Chapter NR 815, Wis. Adm. Code, regulates injection wells including storm water injection wells. Construction or use of a well to dispose of storm water directly into groundwater is prohibited under s. NR 815.11(5), Wis. Adm. Code.

**2.3.2 IDDE field screening.** On-going dry weather field screening shall be conducted at 100% of the total major outfalls at least once during the term of the permit. Additionally, the permittee shall select minor outfalls for annual on-going dry weather field screening during the term of the permit. The permittee shall develop a prioritization procedure to assist with selecting minor outfalls and consideration shall be given to hydrological conditions, total drainage area of the site, population density of the site, traffic density, age of the structures or buildings in the area, history of the area and land use types when selecting outfalls for annual field screening. At a minimum, field screening shall be documented and include:

**a.** Visual Observation - A narrative description of visual observations including color, odor, turbidity, oil sheen or surface scum, flow rate and any other relevant observations regarding the potential presence of non-storm water discharges or illicit dumping.

**b.** Field Analysis - If flow is observed, a field analysis shall be conducted to determine the presence of illicit non-storm water discharges or illicit dumping. The field analysis shall include sampling for pH, total chlorine, total copper, total phenol and detergents, unless the permittee elects instead to use detergent, ammonia, potassium and fluoride as the indicator parameters. Other alternative indicator parameters may be authorized by the Department in writing.

**(1)** Field screening points shall, where possible, be located downstream of any source of suspected illicit activity.

**(2)** Field screening points shall be located where practicable at the farthest manhole or other accessible location downstream in the system. Safety of personnel and accessibility of the location shall be considered in making this determination.

**Note:** The Department's MS4 Illicit Discharge Detection and Elimination guidance document includes several recommendations regarding selection of outfalls for field screening, screening frequency, indicator parameter selection, indicator parameter action levels and documentation. The Illicit Discharge Detection and Elimination guidance is available on the Department's Internet site at: https://dnr.wi.gov/topic/stormwater/municipal/overview.html

**2.3.3 IDDE source investigation and elimination.** Written procedures for responding to known or suspected illicit discharges, including an assessment of risks and the establishment to response times. At a minimum, procedures shall be established for:

**a.** Investigating portions of the MS4 that, based on the results of field screening or other information, indicate a reasonable potential for containing illicit discharges or other sources of non-storm water discharges.

**b.** Responding to spills that discharge into and/or from the MS4 including tracking and locating the source of the spill if unknown.

**c.** Preventing and containing spills that may discharge into or are already within the MS4.

**d.** Promoting, publicizing, and facilitating public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including a form, website, email address, and/or telephone number for complaints and spill reporting, and publicize to both internal permittee staff and the public.

**e.** Notifying the Department immediately in accordance with ch. NR 706, Wis. Adm. Code, in the event that the permittee identifies a spill or release of a hazardous substance, which has resulted or may result in the discharge of pollutants into waters of the state. The Department shall be notified via the 24-hour toll free spill hotline at 1-800-943-0003. The permittee shall cooperate with the Department in efforts to investigate and prevent such discharges from polluting waters of the state.

**f.** Detecting and eliminating cross-connections and leakage from sanitary conveyance systems into the MS4.

**g.** Providing the Department with advanced notice of the time and location of dye testing within an MS4. Department notification prior to dye testing is required due to the likelihood that dye observed in waterways will be reported to the Department as an illicit discharge or spill.

**h.** Documentation of the following information:

**(1)** Dates and locations of IDDE screenings conducted in accordance with section 2.3.2.

**(2)** Reports of alleged illicit discharges received, including dates of the reports, and any follow-up actions taken by the permittee.

**(3)** Dates of discovery of all illicit discharges.

**(4)** Identification of outfalls, or other areas, where illicit discharge have been discovered.

**(5)** Sources (including a description and the responsible party) of illicit discharges (if known).

**(6)** Actions taken by the permittee, including dates, to address discovered illicit discharges.

**2.3.4** The permittee shall take appropriate action to remove known illicit discharges from its MS4 system discovered under section 2.3 as soon as possible. If it will take more than 30 days to remove an illicit connection or if the potential illicit discharge is from a facility with WPDES permit coverage, the Department shall be contacted to discuss an appropriate action and/or timeframe for removal. Notwithstanding this 30-day timeframe and notification of the Department, the permittee shall be responsible for any known illicit connections to its MS4 system that are a significant risk to human health and the environment.

**2.3.5** In the case of interconnected MS4s, the permittee shall notify the appropriate municipality within one working day of either of the following:

**a.** An illicit discharge that originates from the permittee's permitted area that discharges directly to a municipal separate storm sewer or property under the jurisdiction of another municipality.

**b.** An illicit discharge that has been tracked upstream to the interconnection point with or outfall from another municipality.

**2.3.6** The name, title and phone number of the individuals responsible for responding to reports of illicit discharges and spills shall be included in the illicit discharge response procedure.

**2.4 Construction Site Pollutant Control**

The permittee shall continue to implement and enforce its program to reduce the discharge of sediment and construction materials from construction sites. The permittee shall implement the following measurable goals:

**2.4.1 Construction site ordinance.** An ordinance or other regulatory mechanism to require erosion and sediment control at construction sites and establish sanctions to ensure compliance. At a minimum, the ordinance or other regulatory mechanism shall establish or include:

**a.** Applicability and jurisdiction, pursuant to the authority provided to the permittee under Wisconsin statutes, the ordinance shall apply to all construction sites with one acre or more of land disturbance, and to sites of less than one acre if they are part of a larger common plan of development or sale.

**b.** Requirements for design and implementation of erosion and sediment control practices consistent with the criteria of those approved by the Department.

**Note:** Department approved erosion and sediment control technical standards may be found on the Department's Internet site at:
https://dnr.wi.gov/topic/stormwater/standards/const_standards.html

**c.** Construction site performance standards equivalent to those in ss. NR 151.11(6m), (7), and (8), and 151.23(4m), (5), and (6), Wis. Adm. Code, to achieve the following measurable goals:

**(1)** BMPs for construction sites that, by design, discharge no more than 5 tons per acre per year, or to the maximum extent practicable, of the sediment load carried in runoff from initial grading to final stabilization.

**(2)** BMPs for transportation facilities that, by design, discharge no more than 5 tons per acre per year, or to the maximum extent practicable, of the sediment load carried in runoff from initial grading to final stabilization.

**Note:** The requirements for erosion and sediment control practices, sediment performance standards, and preventive measures for non-transportation facilities can be found in s. NR 151.11(6m), Wis. Adm. Code, and for transportation facilities can be found in NR. 151.23(4m), Wis. Adm. Code.

**d.** Erosion and sediment control plan requirements for landowners of construction sites equivalent to those contained in s. NR 216.46, Wis. Adm. Code.

**e.** Inspection and enforcement authority.

**f.** Requirements for construction site operators to manage waste such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site to reduce adverse impacts to waters of the state.

**Note:** In accordance with section 2.10, when a town demonstrates to the Department that an adequate county ordinance that meets the requirements of this permit is administered and enforced within its town, then the town may be excused from having to adopt its own ordinance. Model ordinances for construction site erosion and sediment control can be found in ch. NR 152, Wis. Adm. Code: https://docs.legis.wisconsin.gov/code/admin_code/nr/100/152

**2.4.2 Erosion and sediment control plan review.** Written procedures for construction site plan review which incorporate consideration of potential water quality impacts. Preconstruction erosion control plan reviews shall be conducted for all construction sites with greater than one acre of land disturbance.

**2.4.3 Administrative procedures.** Written procedures for the administration of the construction site pollutant control program including the process for obtaining local approval, managing and responding to complaints, tracking regulated construction sites, and construction site plan receipt and consideration of information submitted by the public.

**2.4.4 Construction site inspections and enforcement.** Written procedures for construction site inspection and enforcement of erosion and sediment control measures. By April 1, 2020, at a minimum, the procedures shall establish:

**a.** Municipal departments or staff responsible for construction site inspections and enforcement.

**Note:** The Department recommends that municipal construction site inspectors obtain certification as a Soil Erosion Inspector pursuant to s. SPS 305.63, Wis. Adm. Code, for more information:
https://dsps.wi.gov/Pages/Professions/SoilErosionInspector/Default.aspx

**b.** Construction site inspection frequency. The permittee shall inspect all construction sites, at a minimum, in accordance with the frequency specified in Table 3 below.

**Table 3: Construction Site Inspection Frequency**

| Site | Inspection Frequency |
|---|---|
| (1) All sites one acre or more in size | • New projects shall be inspected within the first two weeks of commencement of land disturbing activity<br>• All active sites shall be inspected at least once every 45 days<br>• All inactive sites shall be inspected at least once every 60 days |
| (2) Follow up inspection | • Follow up inspections are required within 7 days of any sediment discharge or inadequate control measure, unless corrections were made and observed by the inspector during initial inspection or corrections were verified via photographs submitted to the inspector |
| (3) Final inspection | • Confirm that all graded areas have reached final stabilization and that all temporary control measures are removed, and permanent storm water management BMPs are installed as designed |

**c.** Construction site inspection documentation. Compliance with the inspection requirements in 2.4.4.a. and b. above, shall be determined by proper documentation and maintenance of records of an established inspection program designed to inspect all sites.

**Note:** The Department's Construction Site Inspection Report (Form 3400-187) may be used to document inspections. The form can be found on the Department's Internet site at: https://dnr.wi.gov/topic/Stormwater/construction/forms.html

**d.** Enforcement mechanisms that will be used to obtain compliance.

**2.5 Post-Construction Storm Water Management**

The permittee shall continue to implement and enforce its program to require control of the quality of discharges from areas of new development, infill, and redevelopment, after construction is completed. The permittee shall implement the following measurable goals:

**2.5.1 Post-construction storm water ordinance.** An ordinance or other regulatory mechanism to regulate post-construction storm water discharges from new development and redevelopment. At a minimum, the ordinance or other regulatory mechanism shall establish or include:

**a.** Applicability and jurisdiction, pursuant to the authority provided to the permittee under Wisconsin statutes, the ordinance shall apply to construction sites with one acre or more of land disturbance, and sites of less than one acre if they are part of a larger common plan of development or sale.

**b.** Requirements for design and implementation of post-construction storm water management control practices consistent with the criteria of those approved by the Department.

**Note:** Department approved post-construction storm water management control technical standards may be found on the Department's Internet site at: https://dnr.wi.gov/topic/stormwater/standards/postconst_standards.html

**c.** For new development and infill, post-construction performance standards equivalent to those in ss. NR 151.122 through 151.126 and 151.242 through 151.246, Wis. Adm. Code, that meet the measurable goals for pollutant removal and post-construction storm water treatment. Post-construction performance standards for new development and infill may be more restrictive than those required in this section 2.5.1.c. if necessary to comply with federally approved TMDL requirements.

**d.** For redevelopment, post-construction performance standards equivalent to or more restrictive than those in ss. NR 151.122 through 151.126 and 151.242 through 151.246, Wis. Adm. Code, that meet the measurable goals for pollutant removal and post-construction storm water treatment.

**e.** Storm water plan requirements for landowners of construction sites equivalent to those contained in s. NR 216.47, Wis. Adm. Code.

**f.** Long-term maintenance requirements for landowners and other persons responsible for long-term maintenance of post-construction storm water control measures, including requirements for routine inspection and maintenance of privately owned post-construction storm water control measures that discharge to the MS4 to maintain their pollutant removal operating efficiency.

**g.** Inspection and enforcement authority.

**Note:** In accordance with section 2.10, when a town demonstrates to the Department that an adequate county ordinance that meets the requirements of this permit is administered and enforced within its town, then the town may be excused from having to adopt its own ordinance. Model ordinances for post-construction storm water management can be found in ch. NR 152, Wis. Adm. Code: https://docs.legis.wisconsin.gov/code/admin_code/nr/100/152

**2.5.2 Administrative procedures.** Written procedures for the administration of the post-construction storm water management program including the process for obtaining local approval and responding to complaints.

**2.5.3 Storm water management plan review.** Written procedures for post-construction site plan review which incorporate consideration of potential water quality impacts. Post-construction site plan reviews shall be conducted for all construction sites with greater than one acre of land disturbance.

**Note:** The Department recommends that municipal staff reviewing plans obtain training on post-construction plan review.

**2.5.4 Long-term maintenance, inspections and enforcement.** Written procedures that will be used by the permittee through its ordinance jurisdiction, approval process, and authority to, at a minimum, track and enforce the long-term maintenance of storm water management facilities implemented to meet the applicable post-construction performance standards in section 2.5.1.c and d of this permit. The procedures shall include:

**a.** A mechanism for tracking regulated sites.

**b.** At a minimum, long-term maintenance inspections shall occur once per permit term.

**c.** Inspection documentation.

**d.** Follow up enforcement with timeframes for corrective maintenance.

**2.6 Pollution Prevention**

The permittee shall continue to implement its pollution prevention program to prevent or reduce pollutant runoff from the MS4 to waters of the state. The permittee shall implement the following measurable goals:

**2.6.1 Storm water management facilities.** Update and maintain an inventory of municipally owned or operated storm water BMPs such as wet detention ponds, bioretention devices, infiltration basins and trenches, permeable pavement, proprietary sedimentation devices, vegetated swales, or any similar practices or devices used to meet a water quality requirement under this permit. At a minimum, the inventory shall be maintained in a tabular format and contain the following information for each structural storm water facility:

**a.** A key corresponding to the location of the BMP on the storm sewer system map required under section 2.8.

**b.** The name and a description of the BMP, including the type and year constructed.

**c.** A confirmation of whether each of the following elements exist or are not available:

**(1)** An operation and maintenance plan with inspection procedures and schedule.

**(2)** A record drawing.

**Note:** A record drawing is a complete clean set of drawings that accurately reflect how the final practice was built.

**(3)** If using a BMP to meet a water quality requirement in this permit and the BMP is owned by another entity, written documentation exists that the permittee has permission from the owner to use the BMP for this purpose.

**2.6.2** For each BMP inventoried under section 2.6.1, the permittee shall develop and implement a maintenance plan with inspection procedures and schedule to maintain the pollutant removal operating efficiency of the practice in compliance with any water quality requirement under this permit. Documentation of inspections and maintenance activities shall be maintained.

**Note:** Chapter NR 528, Wis. Adm. Code, *Management of Accumulated Sediment from Storm Water Management Structures*, establishes a process to regulate sediment removal and use to help storm water pond owners manage storm water pond sediment. Information on NR 528 and managing accumulated sediment from storm water ponds is available through the Department's Internet site at: https://dnr.wi.gov/topic/waste/nr528.html

**2.6.3 Municipally owned public works facilities.** The storm water pollution prevention plans (SWPPPs) for municipal garages, municipal storage areas, and other public works related municipal facilities located within the permitted area shall be maintained and updated annually as needed and shall include the information in sections 2.6.3.a. When a SWPPP is updated, it shall be submitted to the Department with the annual report.

**a.** SWPPPs shall include the following information:

**(1)** The physical locations of each facility with a key corresponding to the locations on the storm sewer system map required under section 2.8.

**(2)** The contact information for the individuals with overall responsibility for each facility.

**(3)** A map of each facility, drawn to scale, and including the following features:

**i.** The locations and descriptions of major activities and storage areas.

**ii.** Identification of drainage patterns, potential sources of storm water contamination, and discharge points.

**iii.** Identification of nearby receiving waters or wetlands.

**iv.** Identification of connections to the permittees MS4.

**(4)** A description of procedures, good housekeeping activities, and any BMPs installed to reduce or eliminate storm water contamination.

**(5)** A maintenance plan with inspection procedures and schedule for each facility to identify deficiencies, necessary improvements and/or repairs, assess effectiveness, and address new or unaddressed potential sources of storm water contamination.

**(6)** Spills prevention and response standard operating procedures.

**b.** The permittee is not required to comply with section 2.6.3 if the permittee certifies that the municipal facility qualifies for no exposure with the Department's concurrence.

**(1)** No exposure means that the facility shall have all materials and activities protected by a storm-resistant shelter to prevent exposure to storm water. Materials or activities include material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products or waste products. Material handling activities include the storage, loading and unloading, transportation or conveyance of any raw material, intermediate product, final product or waste product.

**(2)** The permittee shall certify for no exposure for each facility at least once each permit term. The permittee shall submit a letter requesting no exposure, an inspection report of the site, and photos of all materials or activities at the site. The photo locations shall be labeled on an aerial photo diagram.

**2.6.4** Measures to reduce municipal sources of storm water contamination within source water protection areas.

**Note:** Wisconsin's source water assessment program information may be found on the Department's Internet site at:
https://dnr.wi.gov/topic/drinkingwater/sourcewaterprotection.html

**2.6.5 Collection services/Storm sewer system maintenance activities.**

**a. Street sweeping.** If routine street sweeping is utilized to meet a water quality requirement under this permit, the permittee shall maintain documentation of the number and type of equipment used, standard operating procedures, an estimate of the number of lane-miles swept annually, and an estimate of the weight in tons of material collected annually.

**b. Catch basins.** If routine cleaning of catch basins with sumps is utilized to meet a water quality requirement under this permit, the permittee shall maintain documentation of the number of catch basins inspected, the number of catch basins cleaned, standard operating procedures, and an estimate of the weight in tons of material collected annually.

**c. Material handling and disposal.** Material collected under a. and b. of this section shall be handled and stored in a manner that prevents contamination of storm water runoff and shall be disposed of or beneficially reused in accordance with applicable solid and hazardous waste statutes and administrative codes. Non-storm water discharges to waters of the state associated with dewatering and drying material collected under sections a. and b. of this section are not authorized by this permit.

**Note:** Information on managing waste and materials is available on the Department's Internet site at: https://dnr.wi.gov/topic/Waste/. Information on WPDES permits for non-storm water discharges is available on the Department's Internet site at: https://dnr.wi.gov/topic/wastewater/

**d. Leaf management.** Proper management of leaves and grass clippings from municipally-owned properties and private property. The program may include instructions to private property owners for on-site composting, on-site beneficial reuse, or yard waste drop-off as opposed to a municipal collection program. On-site management and/or drop-off shall be communicated to private property owners in accordance with the public education and outreach program implemented under section 2.1 of this permit. If the permittee has a municipal collection program, collected material shall be handled and stored in a manner that prevents contamination of storm water runoff. For a municipal leaf collection program, the permittee shall maintain the following documentation:

**(1)** A description of the leaf collection program, including the type of pick-up methodology and equipment used, timing of associated street cleaning, standard operating procedures, schedule and frequency, and instructions for private property owners.

**(2)** An estimate of the weight in tons of material collected annually.

**(3)** Municipally operated leaf disposal locations with a key corresponding to the locations on the storm sewer system map required under section 2.8. If the disposal location is outside of the MS4 boundary, then the permittee can provide documentation if the disposal is taken elsewhere.

**Note:** The Department has developed "Interim Municipal Phosphorus Reduction Credit for Leaf Management Programs" guidance to assist permitted MS4s on creditable phosphorus reduction through leaf collection and management. The guidance document may be found on the Department's Internet site at: https://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html

**2.6.6 Winter Road Management.** If road salt or other deicers are applied by the permittee or a contractor on behalf of the permittee, no more shall be applied than necessary to maintain public safety. Documentation on deicing activities shall be performed by the permittee or a contractor on behalf of the permittee and include the following:

**a.** Contact information for the individuals with overall responsibility for winter roadway maintenance.

**b.** A description of the types of deicing products used.

**c.** The amount of deicing product used per month.

**d.** A description of the type of equipment used.

**e.** An estimate of the number of lane-miles treated with deicing products for the roadways that the permittee is responsible for, and an estimate in acres of the total area of municipally-owned parking lots treated with deicing products by the permittee or contractor.

**f.** If applicable, snow disposal locations with a key corresponding to the locations on the storm sewer system map required under section 2.8.

**Note:** Snow treatment and disposal guidance for municipalities is available through the Department's Internet site at: https://dnr.wi.gov/topic/stormwater/publications.html

**g.** A description of anti-icing, pre-wetting and brining, equipment calibration, pavement temperature monitoring, and/or salt reduction strategies implemented or being considered, and/or alternative products.

**h.** Other measurable data or information that the permittee uses to evaluate or modify its deicing activities.

**Note:** The Wisconsin Department of Transportation (WisDOT) Highway maintenance manual - Chapter 6, contains guidelines on winter maintenance including application of road salt and other deicers. Chapter 6 is available on the WisDOT's Internet site at: https://wisconsindot.gov/Pages/doing-bus/local-gov/hwy-mnt/mntc-manual/chapter06.aspx. The WisDOT highway salt storage requirements are contained in ch. Trans 277, Wis. Adm. Code.

**2.6.7 Nutrient management.** Application of turf and garden fertilizers on municipally controlled properties (such as parks, athletic fields, golf courses), with pervious surfaces over 5 acres each, in accordance with a site-specific nutrient application schedule based on appropriate soil tests.

**Note:** To assist permittees with this requirement, the Department has developed a technical standard for turf nutrient management. These documents may be found on the Department's Internet site at: https://dnr.wi.gov/topic/stormwater/standards/turf_nutrient.html

**2.6.8 Environmentally sensitive development.** Consideration of environmentally sensitive land development designs for municipal projects, including green infrastructure and low impact development, which shall be designed, installed, and maintained to comply with a water quality requirement under this permit.

**Note:** Additional information on green infrastructure and low impact development may be found on the following USEPA Internet sites:
https://www.epa.gov/green-infrastructure
https://www.epa.gov/nps/urban-runoff-low-impact-development

**2.6.9 Internal training and education.** At a minimum, the permittee shall hold one annual training event for appropriate municipal staff and other personnel involved in implementing each of the elements of the pollution prevention program under this section 2.6. Documentation shall be maintained of the date, the number of people attending the training, the names of each person attending and a summary of their responsibilities, and the content of the training. The permittee shall inform contractors performing any services to implement

section 2.6 of the permit requirements and expectations. The permittee shall also inform their elected officials of the permit requirements and expectations.

**2.7 Storm Water Quality Management**

The permittee shall implement its municipal storm water quality management program. This program shall maintain compliance with the developed urban area performance standards of s. NR 151.13(2)(b)1., Wis. Adm. Code, for those areas of the municipality that were not subject to the post-construction performance standards of ss. NR 151.12 or 151.24, or ss. NR 151.122 through 151.126, or ss. 151.242 through 151.246, Wis. Adm. Code. The permittee shall implement the following measurable goals:

**2.7.1** To the maximum extent practicable, implementation and maintenance of all storm water management practices necessary to meet the more restrictive total suspended solids reduction of either of the following:

**a.** The permittee shall maintain all source area controls, structural storm water management facilities, and non-structural storm water BMPs that the permittee implemented on or before July 1, 2011, to achieve a reduction of 20% or more of total suspended solids carried by storm water runoff from existing development to waters of the state. If the permittee removes or modifies a storm water BMP, the permittee shall continue to achieve the reduction by installing, implementing, and maintaining the necessary storm water BMPs to, at a minimum, equal the same level of treatment. All structural storm water management facilities utilized to meet the requirements in section 2.7.1.a shall be inventoried and maintained in accordance with sections 2.6.1 and 2.6.2.

**b.** A 20% reduction in the annual average mass of total suspended solids discharging from the MS4 to surface waters of the state as compared to implementing no storm water management controls. All source area controls, structural storm water management facilities, and non-structural storm water BMPs implemented to achieve the 20% reduction in total suspended solids shall be maintained. If the permittee removes or modifies a storm water BMP, the permittee shall continue to achieve the 20% reduction by installing, implementing, and maintaining the necessary storm water BMPs to equal, at a minimum, the same level of treatment. All structural storm water management facilities utilized to meet the requirements in section 2.7.1.b shall be inventoried and maintained in accordance with sections 2.6.1 and 2.6.2.

**Note:** The total suspended solids reduction requirement applies to storm water runoff from areas of urban land use and is not applicable to agricultural or rural land uses and associated roads. Additional MS4 modeling guidance for modeling the total suspended solids control is available on the Department's Internet site at: https://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html. The permittee may elect to meet the applicable total suspended solids standard above on a watershed or regional basis by working with other permittees to provide regional treatment that collectively meets the standard.

**2.8 Storm Sewer System Map**

The permittee shall maintain its MS4 map. The storm sewer system map shall be updated annually as needed for changes occurring in the permitted area boundaries. The municipal storm sewer system map shall include:

**2.8.1** Identification of waters of the state, name and classification of receiving waters, identification of whether the receiving water is an ORW, ERW or listed as an impaired water under s. 303(d) of the Clean Water Act, storm water drainage basin boundaries for each MS4 outfall, and the municipal separate storm sewer conveyance systems including direction of flow.

**2.8.2** Identification of any known wetlands, endangered or threatened resources, and historical property, as defined in sections 1.6 through 1.8 of this permit, which might be affected.

**2.8.3** Identification of all known MS4 outfalls discharging to waters of the state and other MS4s. Major outfalls shall be uniquely identified.

**2.8.4** Location of any known discharge to the MS4 that has been issued WPDES permit coverage by the Department. A list of WPDES permit holders in the permittee's area may be obtained from the Department.

**2.8.5** Location of municipally owned or operated structural storm water management facilities including detention basins, infiltration basins, and manufactured treatment devices. If the permittee will be taking total suspended solids credit for pollutant removal from privately-owned facilities, they shall be identified.

**2.8.6** Identification of publicly owned parks, recreational areas and other open lands.

**2.8.7** Location of municipal garages, storage areas and other public works facilities.

**2.8.8** Identification of streets.

**2.9 Annual Report**

The permittee shall submit an annual report for each calendar year to the Department by **March 31 of the following year**. The permittee shall invite the municipal governing body, interest groups and the general public to review and comment on the annual report. The annual report shall include:

**2.9.1** The status of implementing the permit requirements, status of meeting measurable program goals and compliance with permit schedules.

**2.9.2** A fiscal analysis which includes the annual expenditures and budget for the reporting year, and the budget for the next year.

**2.9.3** A summary of the number and nature of inspections and enforcement actions conducted to ensure compliance with the required ordinances.

**2.9.4** Identification of any known water quality improvements or degradation in the receiving water to which the permittee's MS4 discharges. Where degradation is identified, identify why and what actions are being taken to improve the water quality of the receiving water.

**2.9.5** An evaluation of program compliance, the appropriateness of identified BMPs, and progress towards achieving identified measurable goals. Any program changes made as a result of this evaluation shall be identified and described in the annual report. For any identified deficiencies towards achieving the requirements under section 2 of this permit or lack of progress towards meeting a measurable goal, the permittee shall initiate program changes to improve their effectiveness.

**2.9.6** If applicable, notice that the permittee is relying on another municipality or entity to satisfy any of the permit requirements and a description of the arrangement where a permit requirement is being met in this manner.

**2.9.7** A duly authorized representative of the permittee shall sign and certify the annual report and include a statement or resolution that the permittee's governing body or delegated representatives have reviewed or been apprised of the content of the annual report.

**2.9.8.** The annual report and other required reports, and permit compliance documents shall be submitted electronically through the Department's electronic reporting system.

**Note:** The Department's electronic reporting system is Internet-based and available at: https://dnr.wi.gov/permits/water/. Municipal storm water permit eReporting information and user support tools can be found at: https://dnr.wi.gov/topic/stormwater/municipal/eReporting.html

**2.10 Cooperation**

The permittee may, by written agreement, implement this permit with another municipality or contract with another entity to perform one or more of the conditions of this permit. The permittee is ultimately responsible for compliance with the conditions of this permit. The permittee may rely on another municipality or contract with another entity to satisfy a condition of this permit if all of the following are met:

**2.10.1** The other municipality or entity implements the required control measure or permit requirement.

**2.10.2** A particular control measure, or component thereof, is at least as stringent as the corresponding permit requirement.

**2.10.3** The other municipality or entity agrees to implement a control measure or permit requirement on the permittee's behalf. This shall be shown by formal written agreement, signed by both parties' authorized representatives. The agreement shall be explicit as to which specific permit conditions are being covered by which municipality or other entity. Copies of current agreements shall be submitted with the annual report or to the Department upon request.

**Note:** If a county is implementing and enforcing adequate storm water ordinances within a town, the town would then not have to adopt its own ordinance. However, the town, as the permittee, is still expected to evaluate how the county is implementing and enforcing the ordinance in the town's permitted area, to verify the county is meeting the permit condition. Another example, if another entity agrees to implement the permit condition of long-term maintenance inspections, the permittee must

evaluate that the entity is completing inspections as agree upon. The permittee should not assume that another entity is implementing a permit condition as required because the permittee remains responsible for compliance with the conditions of this permit.

**2.11 Amendments**

The permittee shall amend a program required under this permit as soon as possible if the permittee becomes aware that it does not meet a requirement of this permit. The permittee shall amend its program if notified by the Department that a program or procedure is insufficient or ineffective in meeting a requirement of this permit. The Department notice to the permittee may include a deadline for amending and implementing the amendment.

**2.12 Reapplication for Permit Coverage**

To remain covered after the expiration date of this permit, pursuant to s. NR 216.09, Wis. Adm. Code, the permittee shall reapply to the Department at least 180 days prior to the expiration date of this permit for continued coverage under a reissued version of this permit.

## 3. COMPLIANCE SCHEDULE

The permittee shall comply with the specific permit conditions contained in sections 1 and 2 according to the schedule in this section 3 and Table 4. The permittee shall begin implementing any updates to its storm water management programs no later than March 31, 2021. Required reports and permit compliance documents shall be submitted electronically through the Department's electronic reporting system.

**Note:** The Department's electronic reporting system is Internet-based and available at: https://dnr.wi.gov/permits/water/. Municipal storm water permit eReporting information and user support tools can be found at: https://dnr.wi.gov/topic/stormwater/municipal/eReporting.html

### 3.1 Impaired Waterbodies and Total Maximum Daily Loads

**3.1.1** The permittee shall determine whether any part of its MS4 discharges to an impaired waterbody as required under section 1.5.1 of this permit **by March 31 of each odd-numbered year**.

**3.1.2** If the permittee is subject to TMDL requirements under section 1.5 of this permit, the permittee shall submit information to the Department in accordance with the schedule as required in the applicable appendix of this permit.

### 3.2 Public Outreach and Education

The permittee shall submit to the Department the public education and outreach program developed for the term of this permit as required under section 2.1 of this permit by **March 31, 2021**.

### 3.3 Public Involvement and Participation

The permittee shall submit to the Department the public involvement and participation program developed for the term of this permit as required under section 2.2 of this permit by **March 31, 2021**.

### 3.4 Illicit Discharge Detection and Elimination

The permittee shall submit to the Department the illicit discharge detection and elimination program developed for the term of this permit as required under section 2.3.2 to 2.3.6 of this permit by **March 31, 2021**.

### 3.5 Construction Site Pollutant Control

The permittee shall submit to the Department the construction site pollutant control program developed for the term of this permit as required under sections 2.4.2 to 2.4.4 of this permit by **March 31, 2021**.

### 3.6 Post-Construction Storm Water Management

The permittee shall submit to the Department the post-construction storm water management program developed for the term of this permit as required under sections 2.5.2 to 2.5.4 of this permit by **March 31, 2021**.

**3.7 Pollution Prevention**

**3.7.1** The permittee shall submit to the Department the municipal storm water management facility inventory as required under section 2.6.1 of this permit by **March 31, 2021**. Include with the annual report submittal via the Department's electronic reporting system. When the inventory is updated, it shall be submitted by **March 31 of each year** to the Department.

**3.7.2** The permittee shall submit to the Department the maintenance plan for municipal storm water management facilities as required under section 2.6.2 of this permit by **March 31, 2021**.

**3.7.3** The permittee shall update SWPPPs for municipally owned properties as needed as required under section 2.6.3 of this permit. When a SWPPP is updated, it shall be submitted by **March 31 of each year** to the Department.

**3.8 Storm Water Quality Management**

The permittee shall report compliance with the developed urban area performance standards as required under section 2.7 of this permit by **March 31 of each year**.

**3.9 Storm Sewer System Map**

The permittee shall update the storm sewer system map as needed as required under section 2.8 of this permit. When the MS4 map is updated, it shall be submitted by **March 31 of each year** to the Department.

**3.10 Annual Report**

The permittee shall submit to the Department an annual report as required under section 2.9 of this permit for each calendar year by **March 31 of the following year**. The annual report and other required reports, and permit compliance documents shall be submitted electronically through the Department's electronic reporting system.

**Table 4: Compliance Schedule for Permit Requirements**

| PERMIT SECTION | ACTIVITY | COMPLIANCE DATE | COMMENTS |
|---|---|---|---|
| Section 1.5.1 | Identify discharges to an impaired waterbody | By March 31 of each odd-numbered year thereafter | All permittees |
| Section 1.5.2 | Total maximum daily load implementation | See applicable Appendix. | Applies to a permittee with an MS4 discharge of a pollutant of concern to a waterbody subject to an USEPA approved TMDL that assigns the permittee a wasteload allocation. |
| Section 2.1 | Public Education and Outreach – Submit public education and outreach program for the permit term with annual report | March 31, 2021 | All permittees |
| Section 2.2 | Public Involvement and Participation – Submit public involvement and participation program for the permit term with annual report | March 31, 2021 | All permittees |
| Section 2.3.2 to 2.3.6 | Illicit Discharge Detection and Elimination – Submit illicit discharge detection and elimination program for the permit term with annual report | March 31, 2021 | All permittees |
| Section 2.4.2 to 2.4.4 | Construction Site Pollutant Control – Submit construction site pollutant control program for the permit term with annual report | March 31, 2021 | All permittees |
| Section 2.5.2 to 2.5.4 | Post-Construction Storm Water Management – Submit post-construction storm water management program for the permit term with annual report | March 31, 2021 | All permittees |
| Section 2.6 | Pollution Prevention – Section 2.6.1, submit the municipal storm water management facility inventory with annual report | March 31, 2021, and annually thereafter (if updates) | All permittees |
| | Pollution Prevention – Section 2.6.2, submit the maintenance plan for municipal storm water management facilities with annual report | March 31, 2021 | All permittees |
| | Pollution Prevention – Section 2.6.3, submit SWPPPs for municipally owned properties with annual report | March 31 of each year reporting on previous calendar year (if updates) | All permittees |

| | | | |
|---|---|---|---|
| Section 2.7 | Storm Water Quality Management – Report TSS percent reduction | March 31 of each year reporting on previous calendar year | All permittees |
| Section 2.8 | Storm sewer system map - Submit map with annual report | March 31 of each year reporting on previous calendar year (if updates) | All permittees |
| Section 2.9 | Submit Annual Report | March 31 of each year reporting on previous calendar year | All permittees |

**4. GENERAL CONDITIONS**

The conditions in s. NR 205.07(1) and (3), Wis. Adm. Code, are incorporated by reference in this permit. The permittee shall be responsible for meeting these requirements, except for s. NR 205.07(1)(n), Wis. Adm. Code, which does not apply to facilities covered under general permits. Some of these requirements are outlined below. Requirements not specifically outlined below can be found in s. NR 205.07(1) and (3), Wis. Adm. Code.

**4.1 Duty to Comply:** The permittee shall comply with all conditions of the permit. Any act of noncompliance with this permit is a violation of this permit and is grounds for enforcement action or withdrawal of permit coverage under this permit and issuance of an individual permit. If the permittee files a request for an individual WPDES permit or a notification of planned changes or anticipated noncompliance, this action by itself does not relieve the permittee of any permit condition.

**4.2 Enforcement Action:** The Department is authorized under s. 283.89 and 283.91, Wis. Stats., to utilize citations or referrals to the Wisconsin Department of Justice to enforce the conditions of this permit. Violation of a condition of this permit is subject to a fine of up to $10,000 per day of the violation.

**4.3 Compliance Schedules:** Reports of compliance or noncompliance with interim and final requirements contained in any compliance schedule of the permit shall be submitted in writing within 14 days after the scheduled due date, except that progress reports shall be submitted in writing on or before each schedule date for each report. Any report of noncompliance shall include the cause of noncompliance, a description of remedial actions taken, and an estimate of the effect of the noncompliance on the permittee's ability to meet the remaining scheduled due dates.

**4.4 Noncompliance**

**4.4.1** Upon becoming aware of any permit noncompliance that may endanger public health or the environment, the permittee shall report this information by a telephone call to the Department regional storm water specialist within 24 hours. A written report describing the noncompliance shall be submitted to the Department regional storm water specialist within 5 days after the permittee became aware of the noncompliance. The Department may waive the written report on a case-by-case basis based on the oral report received within 24 hours. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

**4.4.2** Reports of any other noncompliance not covered under General Conditions sections 3.3, 3.4.1, or 3.6. shall be submitted with the annual report. The reports shall contain all the information listed in General Conditions section 3.4.1.

**4.5 Duty to Mitigate:** The permittee shall take all reasonable steps to minimize or prevent any adverse impact on the waters of the state resulting from noncompliance with the permit.

**4.6 Spill Reporting:** The permittee shall immediately notify the Department, in accordance with s. 292.11(2)(a), Wis. Stats., which requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the DNR immediately of any discharge not

authorized by the permit. The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call the DNR's 24-hour HOTLINE at 1-800-943-0003.

**Note:** For details on state and federal reportable quantities, visit:
https://dnr.wi.gov/topic/Spills/define.html

**4.7 Proper Operation and Maintenance:** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the municipality to achieve compliance with the conditions of the permit and the storm water management plan. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with conditions of this permit.

**4.8 Bypass**: The permittee may temporarily bypass a storm water treatment facility if necessary for human safety or maintenance to assure efficient operation. A bypass shall comply with the general storm water discharge limitations in Section 1.9 of this permit. Notification of the Department is not required for these types of bypasses. Any other bypass is prohibited.

**Note:** A discharge from a storm water treatment facility that exceeds the operational design capacity of the facility is not considered a bypass.

**4.9 Duty to Halt or Reduce Activity:** Upon failure or impairment of storm water management practices identified in the storm water management program, the permittee shall, to the extent practicable and necessary to maintain permit compliance, modify or curtail operations until the storm water management practices are restored or an alternative method of storm water pollution control is provided.

**4.10 Removed Substances:** Solids, sludges, filter backwash or other pollutants removed from or resulting from treatment or control of storm water shall be stored and disposed of in a manner to prevent any pollutant from the materials from entering the waters of the state, and to comply with all applicable federal, state, and local regulations.

**4.11 Additional Monitoring:** If a permittee monitors any pollutant more frequently than required by the permit, the results of that monitoring shall be reported to the Department in the annual report.

**4.12 Inspection and Entry:** The permittee shall allow authorized representatives of the Department, upon the presentation of credentials, to:

**4.12.1** Enter upon the municipal premises where a regulated facility or activity is located or conducted, or where records are required to be maintained under the conditions of the permit;

**4.12.2** Have access to and copy, at reasonable times, any records that are required under the conditions of the permit;

**4.12.3** Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under the permit; and

**4.12.4** Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

**4.13 Duty to Provide Information**: The permittee shall furnish the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, terminating, suspending revoking or reissuing the permit or to determine compliance with the permit. The permittee shall give advance notice to the Department of any planned changes to the storm water management program which may result in noncompliance with permit requirements. The permittee shall also furnish the Department, upon request, copies of records required to be kept by the permittee.

**4.14 Property Rights:** The permit does not convey any property rights of any sort, or any exclusive privilege. The permit does not authorize any injury or damage to private property or an invasion of personal rights, or any infringement of federal, state or local laws or regulations.

**4.15 Other Information:** Where the permittee becomes aware that it failed to submit any relevant facts in applying for permit coverage or submitted incorrect information in any plan or report sent to the Department, it shall promptly submit such facts or correct information to the Department.

**4.16 Records Retention:** The permittee shall retain records of all monitoring information, copies of all reports required by the permit, and records of all data used to complete the notice of intent for a period of at least 5 years from the date of the sample, measurement, report or application. The permittee shall retain records documenting implementation of the minimum control measures in sections 2.1 through 2.6 of this permit for a period of at least 5 years from the date the record was generated.

**4.17 Permit Actions:** Under s. 283.35, Wis. Stats., the Department may withdraw a permittee from coverage under this general permit and issue an individual permit for the municipality if: (a) The municipality is a significant contributor of pollution; (b) The municipality is not in compliance with the terms and conditions of the general permit; (c) A change occurs in the availability of demonstrated technology or practices for the control or abatement of pollutants from the municipality; (d) Effluent limitations or standards are promulgated for a point source covered by the general permit after the issuance of that permit; or (e) A water quality management plan containing requirements applicable to the municipality is approved. In addition, as provided in s. 283.53, Wis. Stats., after notice and opportunity for a hearing this permit may be suspended, modified or revoked, in whole or in part, for cause. If the permittee files a request for a permit modification, termination, suspension, revocation and reissuance, or submits a notification of planned changes or anticipated noncompliance, this action by itself does not relieve the permittee of any permit condition.

**4.18 Signatory Requirements:** All applications, reports or information submitted to the Department shall be signed by a ranking elected official, or other person authorized by those responsible for the overall operation of the MS4 and storm water management program activities regulated by the permit. The representative shall certify that the information was gathered and prepared under his or her supervision and, based on report from the people directly under supervision that, to the best of his or her knowledge, the information is true, accurate, and complete.

**4.19 Attainment of Water Quality Standards after Authorization:** At any time after authorization, the Department may determine that the discharge of storm water from a permittee's MS4 may cause, have

the reasonable potential to cause, or contribute to an excursion of any applicable water quality standard. If such determination is made, the Department may require the permittee to do one of the following:

**4.19.1** Develop and implement an action plan to address the identified water quality concern to the satisfaction of the Department.

**4.19.2** Submit valid and verifiable data and information that are representative of ambient conditions to demonstrate to the Department that the receiving water or groundwater is attaining the water quality standard.

**4.19.3** Submit an application to the Department for an individual storm water discharge permit.

**4.20 Continuation of the Expired General Permit:** The Department's goal is to reissue this general permit prior to its expiration date. However, in accordance with s. NR 216.09, Wis. Adm. Code, a permittee shall reapply to the Department at least 180 days prior to the expiration date for continued coverage under this permit after its expiration. If the permit is not reissued by the time the existing permit expires, the existing permit remains in effect.

**4.21 Need to Halt or Reduce Activity not a Defense:** It is not a defense for a permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

**5. DEFINITIONS USED IN THIS PERMIT**

Definitions for some of the terms found in this permit are as follows:

**5.1 Department** means the Wisconsin Department of Natural Resources.

**5.2 Development** means residential, commercial, industrial and institutional land uses and associated roads.

**5.3 Erosion** means the process by which the land's surface is worn away by the action of wind, water, ice or gravity.

**5.4 Hazardous substance** means any substance or combination of substances including any waste of a solid, semisolid, liquid or gaseous form which may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or which may pose a substantial present or potential hazard to human health or the environment because of its quantity, concentration or physical, chemical or infectious characteristics. This term includes, but is not limited to, substances which are toxic, corrosive, flammable, irritants, strong sensitizers or explosives as determined by the Department.

**5.5 Illicit connection** means any man-made conveyance connecting an illicit discharge to a municipal separate storm sewer system.

**5.6 Illicit discharge** means any discharge to a municipal separate storm sewer system that is not composed entirely of storm water except discharges authorized by a WPDES permit or other discharge not requiring a WPDES permit such as landscape irrigation, individual residential car washing, fire fighting, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, flows from riparian habitats and wetlands, and similar discharges. However, the occurrence of a discharge listed above may be considered an illicit discharge on a case-by-case basis if the permittee or the Department identifies it as a significant source of a pollutant to waters of the state.

**5.7 Impaired water** means a waterbody impaired in whole or in part and listed by the Department pursuant to 33 USC § 1313(d)(1)(A) and 40 CFR 130.7, for not meeting a water quality standard, including a water quality standard for a specific substance or the waterbody's designated use.

**5.8 Infiltration** means the entry and movement of precipitation or runoff into or through soil.

**5.9 Jurisdiction** means the area where the permittee has authority to enforce its ordinances or otherwise has authority to exercise control over a particular activity of concern.

**5.10 Land disturbing construction activity** means any man-made alteration of the land surface resulting in a change in the topography or existing vegetative or non-vegetative soil cover that may result in storm water runoff and lead to increased soil erosion and movement of sediment into waters of the state. Land disturbing construction activity includes clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities.

**5.11 Maximum Extent Practicable** has the meaning given it in s. NR 151.002(25), Wis. Adm. Code.

**5.12 Major outfall** means a municipal separate storm sewer outfall that meets one of the following criteria:

**5.12.1** A single pipe with an inside diameter of 36 inches or more, or from an equivalent conveyance (cross sectional area of 1,018 square inches) which is associated with a drainage area of more than 50 acres.

**5.12.2** A municipal separate storm sewer system that receives storm water runoff from lands zoned for industrial activity that is associated with a drainage area of more than 2 acres or from other lands with 2 or more acres of industrial activity, but not land zoned for industrial activity that does not have any industrial activity present.

**5.13 Municipality** means any city, town, village, county, county utility district, town sanitary district, town utility district, school district or metropolitan sewage district or any other public entity created pursuant to law and having authority to collect, treat or dispose of sewage, industrial wastes, storm water or other wastes.

**5.14 Municipal Separate Storm Sewer System or MS4** means a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains, which meets all of the following criteria:

**5.14.1** Owned or operated by a municipality.

**5.14.2** Designed or used for collecting or conveying storm water.

**5.14.3** Which is not a combined sewer conveying both sanitary and storm water.

**5.14.4** Which is not part of a publicly owned wastewater treatment works that provides secondary or more stringent treatment.

**5.15 New MS4 discharge of a pollutant** means an MS4 discharge that would first occur after the permittee's original date of initial coverage under an MS4 permit to a surface water to which the MS4 did not previously discharge storm water, and does not include an increase in an MS4's discharge to a surface water to which the MS4 discharged on or before coverage under this permit.

**5.16 Outfall** means the point at which storm water is discharged to waters of the state or to a storm sewer (e.g., leaves one municipality and enters another).

**5.17 Permittee** means a person who has applied for and received WPDES permit coverage for storm water discharge. For the purposes of this permit, permittee is the owner or operator of a municipal separate storm sewer system authorized to discharge storm water into waters of the state.

**5.18 Permitted area** means the areas of land under the jurisdiction of the permittee that drains into a municipal separate storm sewer system, which is regulated under a permit issued pursuant to subch. I of NR 216, Wis. Adm. Code.

**5.19 Pollutants of concern** means a pollutant that is causing impairment of a waterbody.

**5.20 Reach** means a specific stream segment, lake or reservoir as identified in a TMDL.

**5.21 Reachshed** means the drainage area contributing runoff to a given reach.

**5.22 Redevelopment** means areas where development is replacing older development.

**5.23 Riparian landowners** are the owners of lands bordering lakes and rivers.

**5.24 Sediment** means settleable solid material that is transported by runoff, suspended within runoff or deposited by runoff away from its original location.

**5.25 Start Date** is the date of permit coverage under this permit, which is specified in the Department letter authorizing coverage.

**5.26 Storm water management practice** means structural or non-structural measures, practices, techniques or devices employed to avoid or minimize soil, sediment or pollutants carried in runoff to waters of the state.

**5.27 Storm Water Pollution Prevention Plan or SWPPP** refers to the development of a site-specific plan that describes the measures and controls that will be used to prevent and/or minimize pollution of storm water.

**5.28 Structural storm water management facilities** are engineered and constructed systems that are designed to provide storm water quality control such as wet detention ponds, constructed wetlands, infiltration basins and grassed swales.

**5.29 Total maximum daily load** or **TMDL** means the amount of pollutants specified as a function of one or more water quality parameters, that can be discharged per day into a water quality limited segment and still ensure attainment of the applicable water quality standard.

**5.30 Urbanized area** means a place and the adjacent densely settled surrounding territory that together have a minimum population of 50,000 people, as determined by the U.S. bureau of the census based on the latest decennial federal census.

**5.31 Wasteload Allocation** or **WLA** means the allocation resulting from the process of distributing or apportioning the total maximum load to each individual point source discharge.

**5.32 Waters of the State** has the meaning given it in s. 283.01(20), Wis. Stats.

**5.33 WPDES permit** means a Wisconsin Pollutant Discharge Elimination System permit issued pursuant to ch. 283, Wis. Stats.

# Appendix A: MS4 Permittees Subject to a TMDL Approved Prior to May 1, 2014 including Applicable Updates

## A.1 Applicability and Structure of Appendix.

**A.1.1 Applicability.** In accordance with section 1.5.2.a, this Appendix A applies to permittees subject to a total maximum daily load (TMDL) approved by the United States Environmental Protection Agency (USEPA) prior to May 1, 2014, that includes the following:

- "Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Rock River Basin," approved by USEPA September 2011
- "Total Maximum Daily Load and Watershed Management Plan for Total Phosphorus and Total Suspended Solids in the Lower Fox River Basin and Lower Green Bay," approved by USEPA May 2012
- "Lake St. Croix Nutrient Total Maximum Daily Load," approved by USEPA August 2012
- "Phosphorus Total Maximum Daily Loads (TMDLs) Tainter Lake and Lake Menomin, Dunn County Wisconsin," approved by USEPA September 2012

In addition to the TMDLs listed above, Appendix A also applies to the following:

- "Beaver Dam Lake Total Maximum Daily Load for Total Phosphorus," approved by USEPA August 2018

  **Note**: The Beaver Dam Lake TMDL updates allocations from the Rock River Basin TMDL for the City of Beaver Dam and provides higher allocations, lower percent reductions, than those contained in the Rock River Basin TMDL approved in September 2011.

**Note:** If the MS4 area extends into or discharges to other basins with a USEPA approved TMDL, a permittee could be subject to more than one TMDL and thus the requirements under Appendices B and/or C.

**A.1.2 Structure of Appendix.** This appendix is structured to provide permittees with several compliance options. Section A.2 defines full TMDL compliance while sections A.3, A.4, and A.5 provide different compliance options. Section A.3 applies to permittees that submitted a plan meeting the requirements contained in sections 1.5.4.4 and 1.5.4.5 of WDPES Permit No. WI-S050075-2 or WI-S050181-1 and received Department concurrence regarding the plan. Section A.3 also applies to permittees that are participating in an approved adaptive management plan. Section A.4 details requirements for permittees that can comply with the TMDL during this permit term. Section A.5 applies to permittees who have not been able to utilize sections A.3 or A.4. Section A.5 contains two compliance tracks; permittees may choose between the requirements stipulated under section A.5.2 or meet the requirements under section A.5.3. Section A.6 outlines reporting requirements.

## A.2 Full TMDL Compliance.

**A.2.1** USEPA is allowing the Department to evaluate MS4 compliance with TMDL Wasteload Allocations (WLAs) using a percent reduction framework consistent with Wisconsin's storm

water program. For consistency with existing storm water program requirements, demonstration of TMDL compliance will use the percent reduction measured from the no runoff management controls (no-controls) condition. The percent reduction from no-controls, for each pollutant of concern and reachshed, necessary to meet the TMDL WLAs for the USEPA approved TMDLs are listed in Tables A1-A4. The no-controls modeling condition means taking no (zero) credit for existing storm water control measures that reduce the discharge of pollutants. Existing practices can then be applied and counted toward meeting the TMDL reductions.

**A.2.2** TMDLs may assign a percent reduction for one or more reachsheds for each pollutant of concern (i.e., total suspended solids (TSS) and total phosphorus (TP)). Full TMDL compliance is achieved by the permittee provided all of the following conditions are met:

**a.** By October 31, 2023, the permittee submits the necessary data and documentation to the Department that demonstrates that the permittee meets the percent reductions stipulated in Tables A1-A4 for each reachshed that the MS4 discharges to and for each pollutant of concern.

**b.** The documentation summitted by the permittee includes the policies, procedures, and regulatory mechanisms that the permittee will employ to ensure that storm water controls and management measures will continue to be operated and maintained so that their pollutant removal efficiency continues to be met.

**c.** Based upon the data and documentation and any necessary subsequent information requested by the Department, the permittee receives written concurrence from the Department by April 30, 2024, that the permittee has achieved full TMDL compliance.

**A.3 Implementation of TMDL Compliance Plan or Participation in an Approved Adaptive Management Plan.**

**A.3.1** If the permittee submitted a TMDL Implementation Plan meeting the requirements contained in sections 1.5.4.4 and 1.5.4.5 of WDPES Permit No. WI-S050075-2 or WI-S050181-1 and has received Department concurrence regarding the plan, the permittee shall implement the plan as its TMDL Compliance Plan.

**A.3.2** In accordance with s. 283.13(7), Wis. Stats., and s. NR 217.18, Wis. Adm. Code, if by the effective date of this permit the permittee has chosen to participate in an Adaptive Management project that has been approved by the Department the permittee shall continue to participate in the implementation of the Adaptive Management project.

**A.4 Compliance During the Term of This Permit.** If the permittee determines that it can meet the requirements stipulated in section A.2.2 by October 31, 2023, the permittee shall meet all the following:

**A.4.1** By March 31, 2020, the permittee shall notify the Department if compliance will be achieved by October 31, 2023.

**A.4.2** Consistent with the reporting requirements contained in section A.6, the permittee shall submit written verification that it is has met the applicable requirements contained in section A.2.2.

**A.5 Compliance Over Multiple Permit Terms.** If the permittee cannot meet the requirements stipulated under sections A.3 or A.4, the permittee shall demonstrate continued progress towards compliance with the requirements contained in section A.2.2. During the term of this permit, the following are required:

**A.5.1** By March 31, 2020, if the permittee determines that the applicable requirements contained in section A.2.2 will not be achieved by October 31, 2023, then the permittee shall notify the Department in writing which reachsheds and pollutants of concern are not in compliance with the requirements contained in section A.2.2.

**A.5.2** By October 31, 2021, the permittee shall submit a TMDL Implementation Plan to the Department identifying and describing the actions that the permittee shall undertake, including a proposed schedule and milestones, to achieve the following by the end of the term of this permit:

**a.** A level of reduction that achieves at least 20% of the remaining reduction needed beyond the current 20% TSS reduction required under s. NR 151.13 (2)(b)1.b., Wis. Adm. Code, to achieve full compliance in sediment or TSS.

**b.** A level of reduction that achieves at least 10% of the remaining reduction needed beyond 15% TP reduction to achieve full compliance in TP.

**Note:** The reductions stipulated under section A.5.2 are interim compliance targets set for this permit term. Future permit reduction targets may taper off or vary between municipalities based on individual plans as it is expected that municipalities will rely more on reductions obtained through redevelopment.

**Note:** Unlike full compliance as outlined in section A.2.2, compliance with the reductions stipulated under sections A.5.2.a and A.5.2.b can be achieved utilizing an averaged reduction calculated from individual reductions achieved in one or multiple reachsheds and spanning the entire MS4 area that is impacted by the TMDL.

**Note:** Reductions obtained through a permittee's participation in a water quality trading project, in accordance with s. 283.84, Wis. Stats., and that has been reviewed and approved by the Department, may be counted toward credit in meeting the requirements stipulated under sections A.5.2.a and A.5.2.b. Additional information on water quality trading is available from the Department's Internet site at:
https://dnr.wi.gov/topic/surfacewater/waterqualitytrading.html

**Note: Example calculation to meet section A.5.2.a for total suspended solids (TSS)**
"Municipality A" has modeled a no-controls TSS load of 50 tons/year for Reachshed 2 and 100 tons/ year for Reachshed 3.

***Determine Calculated Wasteload Allocation***
"Municipality A" has area in Rock River TMDL Reachsheds 2 and 3. From Table A.1, the TMDL requires the following reductions from no controls which under section A.2 must ultimately achieve a mass reduction as follows:

| TMDL Reachshed | Modeled TSS from No-Controls (tons/yr) | TMDL TSS Reduction from No-Controls | Ultimate Mass Reduction Required for Full TMDL Compliance (tons/yr) | Calculated Wasteload Allocation (tons/yr) |
|---|---|---|---|---|
| 2 | 50 | 40.6% | 50*0.406 = 20.3 | 50-20.3 = 29.7 |
| 3 | 100 | 55.6% | 100*0.556 = 55.6 | 100-55.6 = 44.4 |

***Determine Minimum Control Required under Section NR 151.13(2)(b)1.b., Wis. Adm. Code***

| TMDL Reachshed | No Controls TSS (tons/yr) | NR 151 Required Reduction (tons/yr) | NR 151 Allowable Load (tons/yr) |
|---|---|---|---|
| 2 | 50 | 50*0.20 = 10 | 50-10 = 40 |
| 3 | 100 | 100*0.20 = 20 | 100-20 = 80 |
| Total | | 30.0 | |

***Calculate 20% Additional Reduction from Section NR 151.13(2)(b)1.b., Wis. Adm. Code***
Under section A.5.2.a, "Municipality A" must achieve an additional 20% reduction from the current 20% TSS reduction required under s. 151.13 (2)(b)1.b., Wis. Adm. Code. As shown below, "Municipality A" needs to achieve a 20% reduction of the remaining 45.9 tons results in "Municipality A" needing to achieve an additional 9.18 tons/year in reduction.

| Reachshed | NR 151 Allowable Load (tons/yr) | Calculated Wasteload Allocation (tons/yr) | Additional Reduction from NR 151 (tons/yr) | 20% Additional Reduction from NR 151 (tons/yr) |
|---|---|---|---|---|
| 2 | 40 | 29.7 | 40-29.7 = 10.3 | 10.3*0.2 = 2.06 |
| 3 | 80 | 44.4 | 80-44.4 = 35.6 | 35.6*0.2 = 7.12 |
| Total | | | 45.9 | 9.18 |

***Load reduction at the end of permit term***
At the end of the permit term, "Municipality A" should demonstrate a minimum reduction from no controls of 39.18 (30 tons plus 9.18 tons). "Municipality A" has the flexibility to decide how much of that reduction is provided in TMDL Reachshed 2 and/or 3 over the next permit term. "Municipality A" will still require additional reductions in each reachshed over subsequent permit terms to reach the calculated wasteload allocation of 29.7 tons in TMDL Reachshed 2 and 44.4 tons in TMDL Reachshed 3.

***The calculation process is similar for total phosphorus (TP).***

**A.5.3** If the permittee determines by October 31, 2021, that it is unable to achieve the reductions stipulated under sections A.5.2.a and A.5.2.b, the permittee shall meet the following requirements by October 31, 2023:

**Note:** The permittee may optimize deployment of resources between the requirements listed below to maximize reductions for the least cost. In some cases, permittees may already be meeting these requirements.

**a.** Pursuant to the permittee's authority under s. 281.33(6)(a)2., Wis. Stats., the permittee shall create or revise and promulgate a municipal storm water management ordinance applicable to redevelopment that requires compliance with post-construction storm water management performance standards that are stricter than the uniform statewide standards established by the Department. When reporting to the Department under section A.6.3, the permittee shall include a justification for the level of pollutant reduction in the ordinance with an assessment of the progress it achieves towards full compliance with the TMDL. The redevelopment reductions may be adjusted to account for other storm water control measures that may exist. The permittee may also establish TP reduction levels for redevelopment projects.

**Note:** The permittee may enact an ordinance that is municipal-wide, targets individual TMDL reachsheds, or designated areas within the permitted MS4, balancing required TMDL reductions, parcel size, and the impact of other treatment options. Increasing redevelopment reductions is one tool in moving toward TMDL compliance.

**b.** The permittee shall create or revise a municipal ordinance that requires the development and implementation of a maintenance plan for all privately-owned storm water treatment facilities for which the permittee takes a TSS and/or TP reduction credit. The permittee shall develop and implement procedures and measures to verify and track that the storm water treatment facilities are inspected on a regular schedule and maintained in the intended working condition in accordance with the plans. The permittee shall require that maintenance agreements be recorded with the appropriate property records that obligates the current and future owners to implement the maintenance plans.

**c.** The permittee shall revise or promulgate a municipal ordinance that requires the submittal of record drawings for storm water management facility that the permittee takes a TSS and/or TP reduction credit. The permittee shall require submittal of the record drawing prior to close-out of the local permit or upon final approval and shall maintain appropriate records and tracking of the plans.

**d.** If the pollutant of concern is TP, the permittee shall implement, expand, or optimize a municipal leaf collection program coupled with street cleaning to serve areas where municipal leaf collection is not currently provided within the MS4 but for which a phosphorus reduction has been assigned and additional reductions could be achieved.

**Note:** The Department's "Interim Municipal Phosphorus Reduction Credit for Leaf Management Programs" guidance document includes recommendations on how the permittee's municipal leaf collection program should be designed and implemented.

The guidance is available from the Department's Internet site at:
https://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html

**e.** Within the MS4 permitted area, the permittee shall inventory the condition of the conveyance systems and outfalls. Where erosion or scour is occurring, the permittee shall develop a schedule to stabilize the identified areas over a 5-year period.

**f.** The permittee shall install at least one new structural BMP or enhance one or more existing structural BMPs to reduce a pollutant of concern discharged via storm water runoff to an impaired waterbody for which a WLA has been assigned to the permittee. The permittee shall develop and implement a maintenance plan for each new structural BMP.

**g.** The permittee shall conduct an analysis of the current municipal street cleaning program, to determine if additional pollutant loading reductions can be achieved. The permittee shall evaluate optimizing sweeping frequency, targeting of critical areas and time periods, and instituting parking restrictions. If a pollutant reduction can be achieved through optimizing the existing street cleaning program, the permittee shall adopt the optimized program the next calendar year or provide a written explanation to the Department explaining why the optimize street cleaning program is not feasible and provide alternative options to achieve similar pollutant reductions.

**A.6 Reporting Requirements.** For the term of this permit, the permittee shall meet the following reporting requirements:

**A.6.1 Compliance Determination Reporting.** The permittee shall submit the information requested in this appendix in accordance with the following schedule:

**a.** By March 31, 2020, for sections A.4.1 and A.5.1.

**b.** By October 31, 2021, for section A.5.2.

**c.** By October 31, 2023, for sections A.2.2.a and A.5.3.

**A.6.2 Annual Reporting.** For compliance options outlined under sections A.3, A.4, and A.5, the permittee shall include a description and the status of progress toward implementing the identified actions and activities in their MS4 annual reports due by March 31 of each year.

**A.6.3 Final Documentation.** Except for permittees complying with a Department approved adaptive management plan under section A.3.2, by October 31, 2023, the permittee shall submit documentation to the Department to verify that the permittee has completed all actions required under this appendix including the following:

**a.** An updated storm sewer system map that identifies:

**(1)** The current municipal boundary. For a permittee that is not a city or village, identify the permitted area.

**Note:** The permitted area for towns, counties and non-traditional MS4s pertains to the area within an urbanized area or the area served by its storm sewer system, such as a university campus.

**(2)** The TMDL reachshed boundaries within the municipal boundary, and the area of each TMDL reachshed in acres within the municipal boundary.

**(3)** The MS4 drainage boundary associated with each TMDL reachshed, and the area in acres of the MS4 drainage boundary associated with each TMDL reachshed.

**b.** The permittee shall submit an updated tabular summary that includes the following for each MS4 drainage boundary associated with each TMDL reachshed as identified under section A.6.3.a and for each pollutant of concern:

**(1)** The permittee's percent reduction needed to comply with its TMDL WLA from the no-controls modeling condition.

**(2)** The modeled MS4 annual average pollutant load without any storm water control measures.

**(3)** The modeled MS4 annual average pollutant load with existing storm water control measures.

**(4)** The percent reduction in pollutant load achieved calculated from the no-controls condition determined under section A.6.3.a(2) and the existing controls condition determined under section A.6.3.a(3).

**(5)** The existing storm water control measures, including the type of measure, area treated in acres, the pollutant load reduction efficiency, and confirmation of the permittee's authority for long-term maintenance of each practice.

**c.** If the updated tabular summary required under section A.6.3.b shows that the permittee is not achieving the requirements stipulated in section A.2, the permittee shall submit an updated written TMDL Implementation Plan to the Department that describes how the permittee will make progress toward achieving compliance. The TMDL Implementation Plan shall include the following information:

**(1)** A list of management options and an implementation schedule that over the next permit term achieves, to the maximum extent practicable, an additional 20% reduction in sediment or TSS and an additional 10% reduction in TP. The percent reductions shall be applied to the difference measured from loading conditions at the end of this permit to the total reductions listed in Tables A1-A4. The reductions can be achieved utilizing an averaged reduction calculated from individual reductions achieved in one or multiple reachsheds and spanning the entire MS4 area impacted by a TMDL.

**Note:** Reductions that occur through stricter redevelopment standards or through water quality trading can be counted toward meeting the reduction requirements under this section.

**Note:** Unlike full compliance as outlined in section A.2.2, interim compliance under this section can be based on an average reduction measured across the MS4 area impacted by a TMDL.

**(2)** Recommendations and options with supporting analysis for storm water control measures that will be installed or implemented in future permit terms to achieve the requirements, to the maximum extent possible, stipulated in section A.2.

**(3)** A proposed schedule for implementation of the recommendations and options identified under section A.6.3.c(1). The proposed schedule may extend into future permit terms.

**(4)** A cost effectiveness analysis for implementation of the recommendations and options identified under section A.6.3.c(1).

**Table A1: Rock River Basin TMDL Load Reductions Necessary to Meet TMDL Wasteload Allocations by TMDL Reachshed**

| Reachshed Number (TMDL Subbasin) | Waterbody Name | County | TSS % Reduction from No-controls | TP % Reduction from No-controls |
|---|---|---|---|---|
| 2 | South Branch Rock River | Dodge, Fond du Lac, Green Lake | 40.6 | 48.2 |
| 3 | South Branch Rock River | Dodge, Fond du Lac | 55.6 | 86.9 |
| 20 | Rock River | Dodge, Jefferson, Washington, Waukesha | 40.0 | 37.2 |
| 21 | Rock River | Dodge, Jefferson, Washington, Waukesha | 40.0 | 34.3 |
| 23 | Oconomowoc River | Washington, Waukesha | 46.6 | 35.8 |
| 24 | Mason Creek | Dodge, Washington, Waukesha | 47.2 | 35.0 |
| 25 | Oconomowoc River | Jefferson, Waukesha | 59.2 | 73.7 |
| 26 | Battle Creek | Waukesha | 57.4 | 52.6 |
| 27 | Oconomowoc River | Jefferson, Waukesha | 40.0 | 27.0 |
| 28 | Rock River | Dodge, Jefferson | 40.0 | 27.7 |
| 29 | Rock River | Dodge, Jefferson | 44.2 | 64.2 |
| 30 | Johnson Creek | Jefferson | 40.0 | 27.0 |
| 33 | Mill Creek, Beaver Dam Lake | Columbia, Dodge | 45.4 | 48.2 |
| 34 | Beaver Dam River | Columbia | 58.6 | 86.1 |
| 37 | Park Creek | Columbia | 72.4 | 75.2 |
| 39 | Shaw Brook | Columbia | 40.0 | 27.0 |
| 45 | Maunesha River | Columbia | 44.8 | 36.5 |
| 51 | Crawfish River | Columbia | 40.0 | 37.2 |
| 54 | Rock River | Columbia, Dodge, Jefferson | 43.6 | 71.5 |
| 55 | Bark River | Waukesha | 65.8 | 76.6 |
| 56 | Bark River | Jefferson, Waukesha | 40.0 | 40.9 |

| Reachshed Number (TMDL Subbasin) | Waterbody Name | County | TSS % Reduction from No-controls | TP % Reduction from No-controls |
|---|---|---|---|---|
| 59 | Steel Brook, Scuppernong River, Bark River | Jefferson, Walworth, Rock | 49.0 | 66.4 |
| 60 | Rock River | Jefferson, Rock | 40.6 | 48.2 |
| 61 | Rock River | Dane, Rock | 41.2 | 31.4 |
| 62 | Pheasant Branch Creek | Dane | 82.0 | 78.1 |
| 63 | Spring (Dorn) Creek | Dane | 46.6 | 37.2 |
| 64 | Yahara River, Lake Mendota, Lake Monona | Dane, Columbia | 73.0 | 61.3 |
| 65 | Nine Springs Creek | Dane | 67.6 | 62.8 |
| 66 | Yahara River, Lake Waubesa, Lake Kegonsa | Dane | 62.2 | 54.0 |
| 67 | Yahara River | Dane | 40.0 | 27.0 |
| 68 | Yahara River | Dane, Rock | 50.8 | 65.0 |
| 69 | Yahara River | Dane, Rock | 52.6 | 79.6 |
| 70 | Rock River | Rock | 40.6 | 27.7 |
| 71 | Rock River | Rock | 58.6 | 48.2 |
| 72 | Blackhawk Creek | Rock, Walworth | 40.0 | 27.0 |
| 73 | Blackhawk Creek | Rock | 69.4 | 64.2 |
| 74 | Rock River | Rock | 52.0 | 39.4 |
| 75 | Markham Creek | Rock | 51.4 | 38.0 |
| 76 | Rock River | Rock | 57.4 | 81.8 |
| 78 | Bass Creek | Rock | 40.0 | 29.9 |
| 79 | Rock River | Rock | 62.2 | 66.4 |
| 80* | Turtle Creek | Rock, Walworth | 55.0 | 62.8 |
| 81 | Turtle Creek | Rock, Walworth | 44.2 | 41.6 |
| 83 | Lake Koshkonong | Dane, Jefferson, Rock | 55.0 | 54.0 |

**Note:** *MS4 Reachshed 80 reductions are based on Non-Point Source annual average reductions as TMDL had not assigned a separate MS4 reduction for MS4s in this reach.

**Table A2: Lower Fox River Basin and Lower Green Bay TMDL Load Reductions Necessary to Meet TMDL Wasteload Allocations by TMDL Reachshed**

| Reachshed Name (Subbasin) | County | Subbasin ID | TSS % Reduction from No-controls | TP % Reduction from No-controls |
|---|---|---|---|---|
| Lower Green Bay | Brown | LFS7 & LFS8 | 52% | 41% |
| Lower Fox River Main Stem | Brown, Outagamie, Winnebago | LFM | 72% | 41% |
| East River | Brown, Calumet | LF01 | 52% | 41% |
| Baird Creek | Brown | LF01 | 52% | 41% |
| Bower Creek | Brown | LF01 | 52% | 41% |
| Dutchman Creek | Brown | LF02 | 52% | 41% |
| Ashwaubenon Creek | Brown | LF02 | 52% | 41% |
| Apple Creek | Brown, Outagamie | LF02 | 52% | 41% |
| Plum Creek | Brown, Calumet | LF03 | 52% | 41% |
| Kankapot Creek | Calumet, Outagamie | LF03 | 52% | 41% |
| Garners Creek | Outagamie | LF03 | 60% | 69% |
| Mud Creek | Outagamie, Winnebago | LF04 | 43% | 48% |
| Neenah Slough | Winnebago | LF06 | 52% | 41% |
| Duck Creek | Brown, Outagamie | LF05 | 52% | 41% |
| Trout Creek | Brown | LF05 | 52% | 41% |

**Note:** % TSS reduction from No Controls = 20 + [0.80 x (% TSS Control Lower Fox TMDL Report)
% TP reduction from No Controls = 15 + [0.85 x (% TP Control Lower Fox TMDL Report)

**Table A3: Lake St. Croix Nutrient TMDL Load Reductions Necessary to Meet TMDL Wasteload Allocations by TMDL Reachshed**

| Waterbody Name | County | WBIC | MS4 TP % Reduction from No Controls |
|---|---|---|---|
| Lake St. Croix | St. Croix, Pierce | 2601500 | 46.0 |

**Table A4: Red Cedar River (Tainter Lake, Menomin Lake) TMDL Load Reductions Necessary to Meet TMDL Wasteload Allocations by TMDL Reachshed**

| Waterbody Name | County | WBIC | MS4 TP % Reduction from No Controls* |
|---|---|---|---|
| Tainter Lake | Dunn | 2068000 | $\frac{Load_{2025\ No\ Controls} - 1700\frac{lbs}{yr}}{Load_{2025\ No\ Controls}}$ |
| Lake Menomin | Dunn | 2065900 | 39.2 |

**Note: ***The TMDL allocations and necessary reduction are calculated using the 2025 projected MS4 build out area. The 2025 area modeled in a No Controls condition compared against the WLA written in the TMDL yields the percent reduction.

## Appendix B: MS4 Permittees Subject to Milwaukee River Basin TMDL

**B.1 Applicability.** In accordance with section 1.5.2.b, this Appendix B applies to permittees subject to a total maximum daily load (TMDL) approved by the United States Environmental Protection Agency (USEPA) that includes the following:

- "Total Maximum Daily Loads for Total Phosphorus, Total Suspended Solids, and Fecal Coliform Milwaukee River Basin, Wisconsin," approved by USEPA March 2018

**Note:** If the MS4 area extends into or discharges to other basins with a USEPA approved TMDL, a permittee could be subject to more than one TMDL and thus the requirements under Appendices A and/or C.

**B.2 Full TMDL Compliance for Total Suspended Solids (TSS) and Total Phosphorus (TP) WLAs.**

**B.2.1** USEPA is allowing the Department to evaluate MS4 compliance with TMDL Wasteload Allocations (WLAs) using a percent reduction framework consistent with Wisconsin's storm water program. For consistency with existing storm water program requirements, TMDL compliance will use the percent reduction basis from the no runoff management controls (no-controls) condition. The percent reduction from no-controls, for TSS and TP for each reachshed, necessary to meet the TMDL WLAs for the USEPA approved TMDLs are listed on Table B1. The no-controls modeling condition means taking no (zero) credit for existing storm water control measures that reduce the discharge of pollutants. Existing practices can then be applied and counted toward meeting the TMDL reductions.

**B.2.2** TMDLs may assign a percent reduction for one or more reachsheds for each pollutant of concern (i.e., total suspended solids (TSS) and total phosphorus (TP)). Full TMDL compliance is achieved by the permittee provided all of the following conditions are met:

**a.** By October 31, 2023, the permittee submits the necessary data and documentation to the Department that demonstrates that the permittee meets the percent reductions stipulated in Table B1 for each reachshed that the MS4 discharges to and for each pollutant of concern.

**b.** The documentation summitted by the permittee includes the policies, procedures, and regulatory mechanisms that the permittee ill employ to ensure that storm water controls and management measures will continue to be operated and maintained so that their pollutant removal efficiency continues to be met.

**c.** Based upon the data and documentation and any necessary subsequent information requested by the Department, the permittee receives written concurrence from the Department by April 30, 2024, that the permittee has achieved full TMDL compliance.

**B.3 Participation in an Approved Adaptive Management Plan for Total Suspended Solids (TSS) and Total Phosphorus (TP) WLAs.** In accordance with s. 283.13(7), Wis. Stats., and s. NR 217.18, Wis. Adm. Code, if the permittee chooses to participate in an Adaptive Management project, the permittee shall submit the plan to the Department by March 31, 2022 for approval.

**Note:** Information on adaptive management is available from the Department's Internet site at: https://dnr.wi.gov/topic/SurfaceWater/AdaptiveManagement.html

**B.4 TMDL Implementation Plan for Total Suspended Solids (TSS) and Total Phosphorus (TP) WLAs.** If the permittee has chosen not to participate in an adaptive management plan as stipulated in section B.3, the permittee shall perform the following activities:

**B.4.1** By March 31, 2022, the permittee shall determine if the applicable requirements contained in section B.2.2 will be achieved during the term of this permit. The permittee shall notify the Department which reachsheds and pollutants of concern are not in compliance with the requirements contained in section B.2.2 with the tabular summary created under section B.4.2(b) and develop a TMDL Implementation Plan per section B.4.2(c).

**B.4.2** The permittee shall develop and submit the following documentation to meet the requirements stipulated in section B.2.2:

**a.** By March 31, 2020, an updated storm sewer system map that identifies:

**(1)** The current municipal boundary. For a permittee that is not a city or village, identify the permitted area.

**Note:** The permitted area for towns, counties and non-traditional MS4s pertains to the area within an urbanized area or the area served by its storm sewer system, such as a university campus.

**(2)** The TMDL reachshed boundaries within the municipal boundary, and the area of each TMDL reachshed in acres within the municipal boundary.

**(3)** The MS4 drainage boundary associated with each TMDL reachshed, and the area in acres of the MS4 drainage boundary associated with each TMDL reachshed.

**(4)** Identification of areas on a map and the acreage of those areas within the municipal boundary that the permittee believes should be excluded from its analysis to show compliance with the TMDL WLA. In addition, the permittee shall provide an explanation of why these areas should not be its responsibility.

**Note:** An example of an area within a municipal boundary that may not be subject to a TMDL WLA for the permittee is an area that does not drain through the permittee's MS4.

**(5)** Flow paths of storm water through the storm sewer system.

**(6)** The location and associated drainage basin of structural BMPs the MS4 uses for TSS and TP treatment.

**b.** By March 31, 2022, the permittee shall submit a tabular summary that includes the following for each MS4 drainage boundary associated with each TMDL reachshed as identified under section B.4.2.a(2) and for each pollutant of concern listed in Table B1:

**(1)** The permittee's percent reduction needed to comply with its TSS and TP WLA from the no-controls modeling condition. The no-controls modeling condition means taking no (zero) credit for storm water control measures that reduce the discharge of pollutants.

**Note:** This model run is comparable to the no-controls condition modeled for the developed urban area performance standard of s. NR 151.13, Wis. Adm. Code.

**(2)** The modeled annual average pollutant load without any storm water control measures for each reachshed which the MS4 discharge to.

**(3)** The modeled MS4 annual average pollutant load with existing and current storm water control measures for each reachshed which the MS4 discharges to.

**(4)** The percent reduction in pollutant load achieved calculated from the no-controls condition determined under section B.4.2.b(2) and the existing controls condition determined under section B.4.2.b(3).

**(5)** The existing storm water control measures including the type of measure, area treated in acres, the pollutant load reduction efficiency, and confirmation of the permittee's authority for long-term maintenance of each practice.

**c.** By March 31, 2022, if the tabular summary required under section B.4.2.b shows that the permittee is not achieving the applicable percent reductions needed to comply with section B.2.2, then the permittee shall submit a written TMDL Implementation Plan to the Department that describes how the permittee will make progress toward achieving compliance. The plan shall include the following information:

**(1)** Recommendations and options for storm water control measures that will be considered to reduce the discharge of each pollutant of concern. At a minimum, the following shall be evaluated: all post-construction BMPs for which the Department has a technical standard, optimizing or retrofitting all existing public and private storm water control practices, regional practices, optimization or improvements to existing BMPs, incorporation of storm water control for all road reconstruction projects, more restrictive post-construction ordinances, updated development and redevelopment standards.

**(2)** A proposed schedule for implementation of the alternatives identified under section B.4.2.c(1). The proposed schedule may extend beyond the expiration date of this permit. The schedule should aim to achieve, to the maximum extent practicable, a level of reduction that achieves at least 20% of the remaining reduction needed beyond baseline to achieve full compliance in TSS and a level of reduction that achieves at least 10% of the remaining reduction needed

beyond baseline to achieve full compliance in TP over the next permit term. The reductions can be achieved utilizing an averaged reduction calculated from individual reductions achieved in one or multiple reachsheds and spanning the entire MS4 area impacted by a TMDL.

**Note:** The reductions stipulated under B.4.2.c(2) are interim compliance targets set as a planning target for the next permit term. Future permit reduction targets may tapper off or vary between municipalities based on individual plans as it is expected that municipalities will rely more on reductions obtained through redevelopment.

**(3)** A cost effectiveness analysis for implementation of the recommendations and options identified under section B.4.2.c(1).

**Note:** The Department has developed the guidance document "TMDL Guidance for MS4 Permits: Planning, Implementation, and Modeling Guidance." The guidance is available on the Department's Internet site: https://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html, and is available to assist a permittee with complying with the requirements of section B.4.

**Note:** Reductions obtained through a permittee's participation in a water quality trading project, in accordance with s. 283.84, Wis. Stats., and that has been reviewed and approved by the Department, can be counted toward credit in meeting the requirements stipulated under section B.4.2.c(2). Additional information on water quality trading is available from the Department's Internet site at: https://dnr.wi.gov/topic/surfacewater/waterqualitytrading.html

**B.4.3 TMDL Compliance During the Term of This Permit for Total Suspended Solids (TSS) and Total Phosphorus (TP) WLAs.** If the permittee has chosen not to participate in an adaptive management plan as stipulated in section B.3, the permittee shall select and implement a minimum of three of the activities listed below, in addition to the planning requirements contained in section B.4.2, by October 31, 2023:

**Note:** The permittee may optimize deployment of resources between the requirements listed below to maximize reductions for the least cost. In some cases, permittees may already be meeting these requirements.

**a.** Pursuant to the permittee's authority under s. 281.33(6)(a)2., Wis. Stats., the permittee shall create or revise and promulgate a municipal storm water management ordinance applicable to redevelopment that requires compliance with post-construction storm water management performance standards that are stricter than the uniform statewide standards established by the Department. When reporting to the Department under section B.6.3, the permittee shall include a justification for the level of pollutant reduction in the ordinance with an assessment of the progress it achieves towards full compliance with the TMDL. The redevelopment TSS reduction may be adjusted to account for other storm water controls measures that may exist. The permittee may also establish TP reduction levels for redevelopment projects.

**Note:** The permittee may enact an ordinance that is municipal wide, targets individual TMDL reachsheds, or designated areas within the permitted MS4 balancing required TMDL reductions, parcel size, and the impact of other treatment options. Increasing redevelopment reductions is one tool in moving toward TMDL compliance.

**b.** The permittee shall create or revise a municipal ordinance that requires the development and implementation of a maintenance plan for all privately-owned storm water treatment facilities for which the permittee takes a TSS and/or TP reduction credit. The permittee shall develop and implement procedures and measures to verify and track that the storm water treatment facilities are inspected on a regular schedule and maintained in the intended working condition in accordance with the plans. The permittee shall require that maintenance agreements be recorded with the appropriate property records that obligates the current and future owners to implement the maintenance plans.

**c.** The permittee shall revise or promulgate a municipal ordinance that requires the submittal of record drawings for which the permittee takes a TSS and/or TP reduction credit. The permittee shall require submittal of the record drawing prior to close-out of the local permit or upon final approval and shall maintain appropriate records and tracking of the plans.

**d.** If the pollutant of concern is TP, implement, expand, or optimize a municipal leaf collection program coupled with street cleaning to serve areas where municipal leaf collection is not currently provided within the MS4 but for which a phosphorus WLA has been assigned and additional reductions could be achieved.

**Note:** The Department's "Interim Municipal Phosphorus Reduction Credit for Leaf Management Programs" guidance document includes recommendations on how the permittee's municipal leaf collection program should be designed and implemented. The guidance is available from the Department's Internet site at: https://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html

**e.** Within the MS4 permitted area, the permittee shall inventory the condition of the conveyance systems and outfalls. Where erosion or scour is occurring, the permittee shall develop a schedule to stabilize the identified areas.

**f.** Install one new structural BMP or enhance one existing structural BMPs to reduce a pollutant of concern discharged via storm water runoff to an impaired waterbody for which a WLA has been assigned to the permittee. The permittee shall develop and implement a maintenance plan for each new structural BMP.

**Note:** This option can be counted each time the permittee installs or enhances a structural BMP to satisfy the required activities. A permittee could meet the requirement if they solely chose this option and installed or enhanced three BMPs.

**g.** Permittee shall conduct an analysis of the current municipal street cleaning program, to determine if additional pollutant loading reductions can be achieved. The permittee shall evaluate optimizing sweeping frequency, targeting of critical areas and time

periods, and instituting parking restrictions. If a pollutant reduction can be achieved through optimizing the existing street cleaning program, the permittee shall adopt the optimized program the next calendar year or provide a written explanation to the Department explaining why the optimize street cleaning program is not feasible and provide alternative options to achieve similar pollutant reductions.

**Note:** The permittee may optimize deployment of resources between the requirements listed above to maximize reductions for the least cost; for example, only increase street sweeping where structural practices do not already exist to treat the runoff for the area.

**B.5 TMDL Compliance and Implementation for Bacteria WLAs.** This section applies to all permittees with a bacteria WLA specified in the Milwaukee River Basin TMDL Final Report dated March 19, 2018. The permittee shall do all of the following:

**B.5.1** As part of its program to address illicit discharges under section 2.3 of this permit, by March 31, 2021, the permittee shall begin to conduct ongoing public education and outreach activities specifically to increase awareness of bacterial pollution problems, potential sources, proper pet waste management, and the impacts of urban wildlife and pests.

**B.5.2** In addition to complying with the requirements in section 2.3 of this permit, the permittee shall comply with the following:

**a.** By March 31, 2022, the permittee shall develop and submit to the Department an inventory of bacteria sources and a map indicating the locations of the potential sources of fecal coliform and *E. coli* entering its MS4. The inventory shall be in a tabular format and include a label code, the name of the source, the physical address or location description of the source, and the ownership of the source (i.e., public or private). The map shall be to scale, identify all municipal streets, and indicate the locations of the sources using the label codes. The permittee shall consider the variation in flow conditions in its identification of potential sources. The inventory and map shall include the following potential sources of bacteria:

- Known or suspected leaking or failing septic systems.
- Sanitary sewer overflow locations.
- Livestock and domesticated animals housed or raised within the MS4 permitted area and discharging to the MS4, but not including household pets.
- Zoos, kennels, animal breeders, pet stores, and dog training facilities.
- Waste hauling, storage, and transfer facilities.
- Areas that attract congregations of nuisance urban birds and wildlife.
- Known or suspected properties with inadequate food or organic waste handling or storage.
- Composting sites or facilities.
- Known or suspected areas with improper human sanitation use.
- Any other source that the permittee or the Department has a reason to believe is discharging bacteria to the MS4.

**b.** By October 31, 2023, the permittee shall develop and submit to the Department a bacteria source elimination plan. The plan shall consist of a strategy and prioritization

scheme to eliminate each source of bacteria identified under section B.5.2.2. The plan shall include the BMPs to be used, cost estimates, sources of funding, and a schedule to eliminate the sources. BMPs identified in the plan may be structural, non-structural, targeted outreach, and/or additional ordinances, but the plan shall include the rationale for using each BMP, the reason for selected a BMP over another, and the expected outcome from implementing each BMP.

**Note:** While the TMDL allocations in the Milwaukee River Basin TMDL are expressed only in terms of fecal coliform, both fecal coliform and *E. coli* have been listed as sources of recreational use impairments that the TMDL was completed to address.

**B.5.3** By March 31, 2023, the permittee shall adopt local ordinances to address the requirements for proper pet waste management, the restrictions on feeding of urban wildlife that are potential sources of bacteria entering the MS4, the requirements for property owners to cooperate with identifying and eliminating illicit sanitary sewerage cross-connections with the MS4, and the requirements for property owners to address other potential sources of bacteria that may enter the MS4 (e.g., refuse management, pest control).

**B.6 Reporting Requirements.** For the term of this permit, the permittee shall meet the following reporting requirements:

**B.6.1 Compliance Determination Reporting.** The permittee shall submit the information requested in this appendix in accordance with the following schedule:

**a.** By March 31, 2020, for section B.4.2.a.

**b.** By March 31, 2021, for sections B.5.1.

**c.** By March 31, 2022, for sections B.4.1, B.4.2.b, and B.5.2.a.

**d.** By March 31, 2023, for section B.5.3.

**e.** By October 31, 2023, for section B.2.2.a, B.4.3, and B.5.2.b.

**B.6.2 Annual Reporting.** For requirements outlined under sections B.3, B.4, and B.5 the permittee shall include a description and the status of progress toward implementing the identified actions and activities in their MS4 annual reports due by March 31 of each year.

**B.6.3 Final Documentation.** By October 31, 2023, the permittee shall submit documentation to the Department to verify that the permittee has completed all actions required under this appendix including submittal of the TMDL Implementation Plan required under section B.4 and documentation that the three activities selected under section B.4.3 have been completed.

**Table B1: Milwaukee River Basin TMDL Load Reductions Necessary to Meet TMDL Wasteload Allocations by TMDL Reachshed**

**Kinnickinnic River Basin:**

| Reachshed (TMDL Subbasin) | Waterbody Name | Waterbody Extents | TSS % Reduction from No-controls | TP % Reduction from No-controls |
|---|---|---|---|---|
| KK-1 | Lyons Park Creek | Entire Length | 78.4% | 68.1% |
| KK-2 | Kinnickinnic River | From Wilson Park Creek to Lyons Park Creek | 77.6% | 68.1% |
| KK-3 | South 43rd St. Ditch | Entire Length | 76.8% | 78.7% |
| KK-4 | Edgerton Channel, Wilson Park Creek, Villa Mann Creek | Entire Length | 84.0% | 89.4% |
| KK-5 | Holmes Avenue Creek | Entire Length | 80.0% | 78.7% |
| KK-6 | Cherokee Park Creek | Entire Length | 77.6% | 69.0% |
| KK-7 | Kinnickinnic River | Estuary to Wilson Park Creek | 75.2% | 45.0% |

**Menomonee River Basin:**

| Reachshed (TMDL Subbasin) | Waterbody Name | Waterbody Extents | TSS % Reduction from No-controls | TP % Reduction from No-controls |
|---|---|---|---|---|
| MN-1 | Menomonee River | From Nor-X-Way Channel to Headwaters | 66.4% | 63.6% |
| MN-2 | Goldendale Creek | Entire Length | 63.2% | 47.7% |
| MN-3 | West Branch Menomonee River | Entire Length | 65.6% | 60.1% |
| MN-4 | Willow Creek | Entire Length | 64.0% | 51.2% |
| MN-5 | Nor-X-Way Channel | Entire Length | 70.4% | 72.5% |
| MN-6 | Menomonee River and Dretzka Park Creek | From Little Menomonee River to Nor-X-Way Channel | 73.6% | 69.0% |
| MN-7 | Lilly Creek | Entire Length | 70.4% | 64.5% |
| MN-8 | Butler Ditch | Entire Length | 69.6% | 58.3% |
| MN-9 | Little Menomonee River | Entire Length | 70.4% | 64.5% |
| MN-10 | Menomonee River | From Underwood Creek to Little Menomonee River | 67.2% | 31.7% |
| MN-11 | Underwood Creek and Dousman Ditch | From South Branch Underwood Creek to Headwaters | 72.0% | 62.7% |

| Reachshed (TMDL Subbasin) | Waterbody Name | Waterbody Extents | TSS % Reduction from No-controls | TP % Reduction from No-controls |
|---|---|---|---|---|
| MN-12 | Underwood Creek | From Menomonee River to South Branch Underwood Creek | 80.0% | 76.1% |
| MN-13 | South Branch Underwood Creek | Entire Length | 76.8% | 69.8% |
| MN-14 | Menomonee River | From Honey Creek to Underwood Creek | 64.8% | 49.4% |
| MN-15 | Honey Creek | Entire Length | 73.6% | 67.2% |
| MN-16 | Menomonee River | From Estuary to Honey Creek | 72.0% | 49.4% |

**Milwaukee River Basin:**

| Reachshed (TMDL Subbasin) | Waterbody Name | Waterbody Extents | TSS % Reduction from No-controls | TP % Reduction from No-controls |
|---|---|---|---|---|
| MI-1 | Upper Milwaukee River | From Campbellsport to Headwaters | ** | ** |
| MI-2 | Upper Milwaukee River | From Kewaskum To Campbellsport and Auburn | 73.6% | 71.6% |
| MI-3 | West Branch Milwaukee River | Entire Length | 77.6% | 48.6% |
| MI-4 | Kewaskum Creek | Entire Length | 76.8% | 55.7% |
| MI-5 | Watercress Creek and East Branch Milwaukee River | Entire Length | 73.6% | 51.2% |
| MI-6 | Quass Creek and Milwaukee River | Near West Bend | 73.6% | 86.7% |
| MI-7 | Myra Creek and Milwaukee River | From North Branch Milwaukee River to West Bend | 79.2% | 67.2% |
| MI-8 | North Branch Milwaukee River | from Adell Tributary to Headwaters | ** | ** |
| MI-9 | Adell Tributary | Entire Length | ** | ** |
| MI-10 | Chambers Creek, Batabia Creek, and North Branch Milwaukee River | Near Sherman | ** | ** |
| MI-11 | Melius Creek | Entire Length | ** | ** |
| MI-12 | Mink Creek | Entire Length | ** | ** |

| Reachshed (TMDL Subbasin) | Waterbody Name | Waterbody Extents | TSS % Reduction from No-controls | TP % Reduction from No-controls |
|---|---|---|---|---|
| MI-13 | Stony Creek, Wallace Creek, and North Branch Milwaukee River | Near Farmington | 74.4% | 46.8% |
| MI-14 | Silver Creek | Entire Length | ** | ** |
| MI-15 | Milwaukee River | Near Fredonia | ** | ** |
| MI-16 | Milwaukee River | Near Saukville | 75.2% | 77.8% |
| MI-17 | Milwaukee River | From Cedar Creek to Saukville | 76.0% | 83.1% |
| MI-18 | Cedar Creek | From Jackson Creek to Headwaters | 76.8% | 71.6% |
| MI-19 | Lehner Creek | Entire Length | 77.6% | 61.0% |
| MI-20 | Jackson Creek | Entire Length | 80.8% | 77.8% |
| MI-21 | Little Cedar Creek | Entire Length | 80.8% | 77.8% |
| MI-22 | Cedar Creek | Near Jackson | 76.8% | 54.8% |
| MI-23 | Evergreen Creek | Near Jackson | 79.2% | 53.0% |
| MI-24 | North Branch Cedar Creek and Cedar Creek | From Milwaukee River to Myra Creek | 73.6% | 79.6% |
| MI-25 | Milwaukee River | From Pigeon Creek to Cedar Creek | 81.6% | 43.2% |
| MI-26 | Pigeon Creek | Entire Length | 90.4% | 88.5% |
| MI-27 | Milwaukee River | From Lincoln Creek to Pigeon Creek | 72.8% | 53.9% |
| MI-28 | Beaver Creek | Entire Length | 72.8% | 88.5% |
| MI-29 | South Branch Creek | Entire Length | 71.2% | 87.6% |
| MI-30 | Indian Creek | Entire Length | 65.6% | 76.1% |
| MI-31 | Lincoln Creek | Entire Length | 71.2% | 85.8% |
| MI-32 | Milwaukee River | From Estuary to Lincoln Creek | 58.4% | 23.7% |

**Note:** **The TMDL did not assign a percent reduction for these reachsheds because modeling indicated that there is no direct MS4 discharge to this subbasin. If more detailed analysis conducted by the permittee indicates the presence of an MS4 discharge, contact your DNR storm water engineer or specialist for more information on how best to proceed.

# Appendix C: MS4 Permittees Subject to the Wisconsin River Basin TMDL or a TMDL Approved After May 1, 2019

**C.1 Applicability.** In accordance with section 1.5.2.c, this Appendix C applies to permittees subject to a total maximum daily load (TMDL) approved by the United States Environmental Protection Agency (USEPA) that includes the following:

- "Total Maximum Daily Loads for Total Phosphorus in the Wisconsin River Basin," approved by USEPA April 2019

  **Note:** The Wisconsin River Basin TMDL has two sets of allocations. Table J-4 of Appendix J of the TMDL report lists the allocations and corresponding percent reductions based on current water quality criteria and Table K-4 of Appendix K of the TMDL report lists the allocations and corresponding percent reductions based on recommended site-specific criteria. Both tables provide the percent reductions measured from no-controls and the TMDL baseline. Under this permit term, the allocations listed in Appendix J of the TMDL report apply. If the recommended site-specific criteria are approved by USEPA, the allocations and percent reductions listed in Appendix K of the TMDL report will become applicable. However, permittees may use the allocations from either Appendix J or Appendix K of the TMDL report for planning purposes under sections C.3 and C.4 below.

- A TMDL approved by the USEPA on or after May 1, 2019

**Note**: If the MS4 area extends into or discharges to other basins with a USEPA approved TMDL, a permittee could be subject to more than one TMDL and thus the requirements under Appendices A and/or B.

**C.2 Full TMDL Compliance.**

**C.2.1** USEPA is allowing the Department to evaluate MS4 compliance with TMDL Wasteload Allocations (WLA) using a percent reduction framework consistent with Wisconsin's storm water program. For consistency with existing storm water program requirements, TMDL compliance will use the percent reduction measured from the no runoff management controls (no-controls) condition. The percent reduction from no-controls, for each pollutant of concern and reachshed, necessary to meet the TMDL WLAs for the USEPA approved TMDLs are listed in the approved TMDLs. The no-controls modeling condition means taking no (zero) credit for existing storm water control measures that reduce the discharge of pollutants. Existing practices can then be applied and counted toward meeting the TMDL reduction reductions.

**C.2.2** TMDLs may assign a percent reduction for one or more reachsheds for each pollutant of concern (i.e., total suspended solids (TSS) and total phosphorus (TP)). Full TMDL compliance is achieved by the permittee provided all of the following conditions are met:

**a.** The permittee submits the necessary data and documentation to the Department that demonstrates that the permittee meets the percent reductions stipulated in the USEPA approved TMDL for each reachshed that the MS4 discharges to and for each pollutant of concern.

**b.** The documentation summitted by the permittee includes the policies, procedures, and regulatory mechanisms that the permittee ill employ to ensure that storm water controls and management measures will continue to be operated and maintained so that their pollutant removal efficiency continues to be met.

**c.** Based upon the data and documentation and any necessary subsequent information requested by the Department, the permittee receives written concurrence from the Department that the permittee has achieved full TMDL compliance.

**C.3 Participation in an approved Adaptive Management Plan.** In accordance with s. 283.13(7), Wis. Stats., and s. NR 217.18, Wis. Adm. Code, if the permittee has chosen to participate in an Adaptive Management project that has been approved by the Department the permittee shall continue to participate in the implementation of the Adaptive Management project.

**Note:** Information on adaptive management is available from the Department's Internet site at: https://dnr.wi.gov/topic/SurfaceWater/AdaptiveManagement.html

**C.4 TMDL Implementation Plan.** If the permittee is not participating in a Department approved adaptive management plan as stipulated in section C.3, a permittee with MS4s discharging to TMDL reachsheds shall do all the following to demonstrate progress towards achieving the TMDL reductions stipulated in section C.2.2 and shall submit the following documentation:

**C.4.1** Within 36 months of the approval date of the TMDL, an updated storm sewer system map that identifies:

**a.** The current municipal boundary. For a permittee that is not a city or village, identify the permitted area.

**Note:** The permitted area for towns, counties and non-traditional MS4s pertains to the area within an urbanized area or the area served by its storm sewer system, such as a university campus.

**b.** The TMDL reachshed boundaries within the municipal boundary, and the area of each TMDL reachshed in acres within the municipal boundary.

**c.** The MS4 drainage boundary associated with each TMDL reachshed, and the area in acres of the MS4 drainage boundary associated with each TMDL reachshed.

**d.** Identification of areas on a map and the acreage of those areas within the municipal boundary that the permittee believes should be excluded from its analysis to show compliance with the TMDL WLA. In addition, the permittee shall provide an explanation of why these areas should not be its responsibility.

**Note:** An example of an area within a municipal boundary that may not be subject to a TMDL WLA for the permittee is an area that does not drain through the permittee's MS4.

**e.** Flow paths of storm water through the storm sewer system.

**f.** The location and associated drainage basin of structural BMPs the MS4 uses for TSS and TP treatment.

**C.4.2** Within 36 months of the approval date of the TMDL, the permittee shall submit a tabular summary that includes the following for each MS4 drainage boundary associated with each TMDL reachshed as identified under section C.4.1 and for each TMDL WLA:

**a.** The permittee's percent reduction needed to comply with its TMDL WLA from the no-controls modeling condition. The no-controls modeling condition means taking no (zero) credit for storm water control measures that reduce the discharge of pollutants.

**b.** The modeled annual average pollutant load without any storm water control measures for each subbasin which the MS4 discharges to as previously identified in section C.4.1.

**c.** The modeled annual average pollutant load with existing storm water control measures for each subbasin with the MS4 discharges to as previously identified in section C.4.1.

**d.** The percent reduction in pollutant load achieved from the no-controls condition and the existing controls condition.

**e.** The existing storm water control measures including the type of measure, area treated in acres, the pollutant load reduction efficiency, and documentation of the permittee's authority for long-term maintenance of each practice.

**f.** If applicable, the remaining pollutant load reduction for each pollutant of concern and reachshed to meet the TMDL reduction goals.

**C.4.3** Within 48 months of the approval date of the TMDL, if the tabular summary required under section C.4.2 shows that the permittee is not achieving the applicable percent reductions needed to comply with its TMDL WLA for each TMDL reachshed, then the permittee shall submit a written TMDL Implementation Plan to the Department that describes how the permittee will make progress toward achieving compliance with the TMDL WLA. The plan shall include the following information:

**a.** Recommendations and options for storm water control measures that will be considered to reduce the discharge of each pollutant of concern. At a minimum, the following shall be evaluated: all post-construction BMPs for which the Department has a technical standard, optimizing or retrofitting all existing public and private storm water control practices, regional practices, optimization or improvements to existing BMPs, incorporation of storm water control for all road reconstruction projects, more restrictive post-construction ordinances, updated development and redevelopment standards. Focus should be placed on those areas identified in section C.4.2 without any controls.

**b.** A proposed schedule for implementation of the alternatives identified under section C.4.3.a. The proposed schedule may extend beyond the expiration date of this permit. The schedule should aim to achieve, to the maximum extent practicable, a level of reduction that achieves at least 20% of the remaining reduction needed beyond baseline to achieve full compliance in TSS and a level of reduction that achieves at least 10% of the remaining reduction needed beyond baseline to achieve full compliance in TP over the next permit term. The reductions can be achieved utilizing an averaged reduction calculated from individual reductions achieved in one or multiple reachsheds and spanning the entire MS4 area impacted by a TMDL.

**Note:** The reductions stipulated under C.4.3.b are interim compliance targets set as a planning target for the next permit term. Future permit reduction targets may taper off or vary between municipalities based on individual plans as it is expected that municipalities will rely more on reductions obtained through redevelopment. In many some cases, reductions that occur through redevelopment activities as outlined in section C.4.3.d may provide the most economical and practical method toward eventually achieving the reduction goals.

**c.** A cost effectiveness analysis for implementation of the recommendations and options identified under section C.4.3.a.

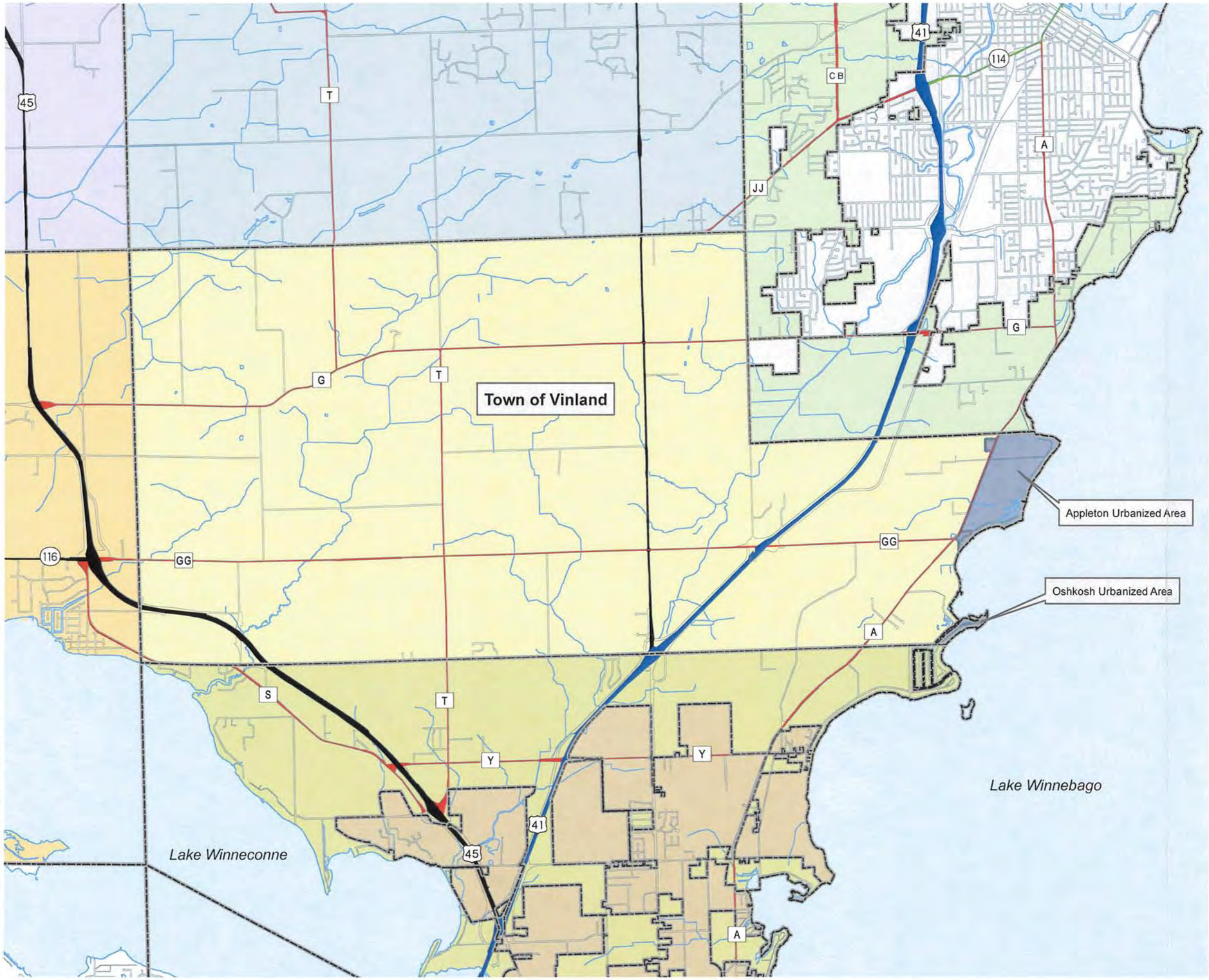
**Note:** The Department has developed the guidance document "TMDL Guidance for MS4 Permits: Planning, Implementation, and Modeling Guidance." The guidance is available on the Department's Internet site: https://dnr.wi.gov/topic/stormwater/standards/ms4_modeling.html, and is available to assist a permittee with complying with the requirements of section C.4.

**Note:** Reductions obtained through a permittee's participation in a water quality trading project, in accordance with s. 283.84, Wis. Stats., and that has been reviewed and approved by the Department, can be counted toward credit in meeting the requirements stipulated under section C.2.2. Additional information on water quality trading is available from the Department's Internet site at: https://dnr.wi.gov/topic/surfacewater/waterqualitytrading.html

**C.5 Annual Reporting.** For requirements outlined under sections C.3 and C.4 the permittee shall include a description and the status of progress toward implementing the identified actions and activities in their MS4 annual reports due by March 31 of each year.

# APPENDIX B

**Figures**




**Municipal Jurisdiction**

- Town of Clayton
- City of Neenah
- Town of Neenah
- City of Oshkosh
- Town of Oshkosh
- Town of Vinland
- Town of Winchester
- Town of Winneconne

**Highway Jurisdiction**

- County Trunk Highway
- Connecting Highway
- State Trunk Highway
- State Freeway

**Other Mapped Features**

- Right-of-Way
- Parcel Line
- Stream
- Surface Water
- Urbanized Area

Sources: Wisconsin Department of Transportation, 2007; and Winnebago County, 2006

Disclaimer: The property lines, right-of-way lines, and other property information on this drawing were developed or obtained as part of the County Geographic Information System or through the County property tax mapping function. McMahon Associates does not guarantee this information to be correct, current, or complete. The property and right-of-way information are only intended for use as a general reference and are not intended or suitable for site-specific uses. Any use to the contrary of the above stated uses is the responsibility of the user and such use is at the user's own risk.

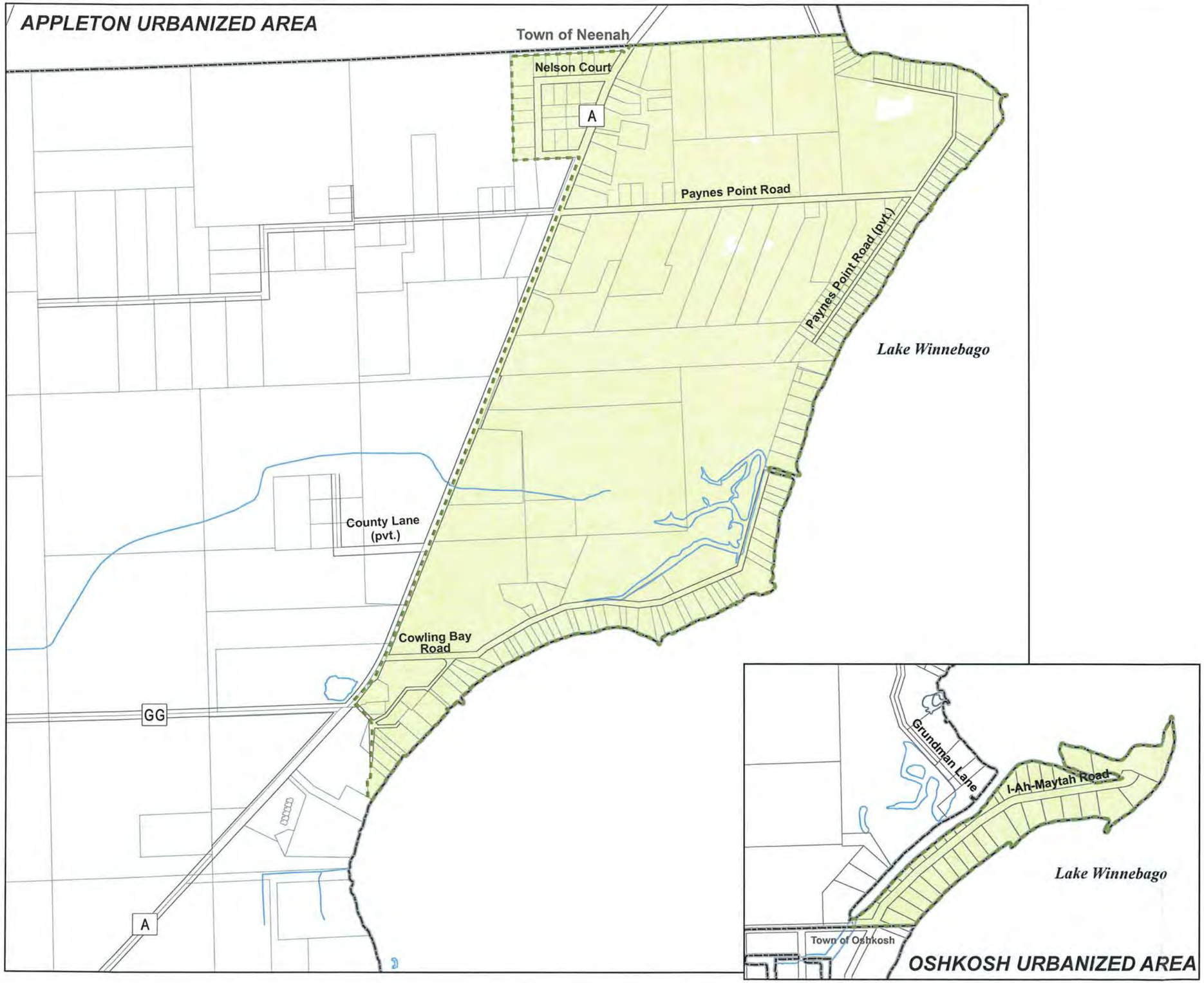
NORTH

0 5,000 10,000 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 1
**MS4 JURISDICTION**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

w:\dwg\V0006\0704251\10\ArcView\mxd\Figure_1_B.mxd July 16, 2008 kpk







Study Area

**Other Mapped Features**

- Municipal Boundary
- Right-of-Way
- Parcel Line
- Stream
- Surface Water

Sources: Winnebago County, 2006.

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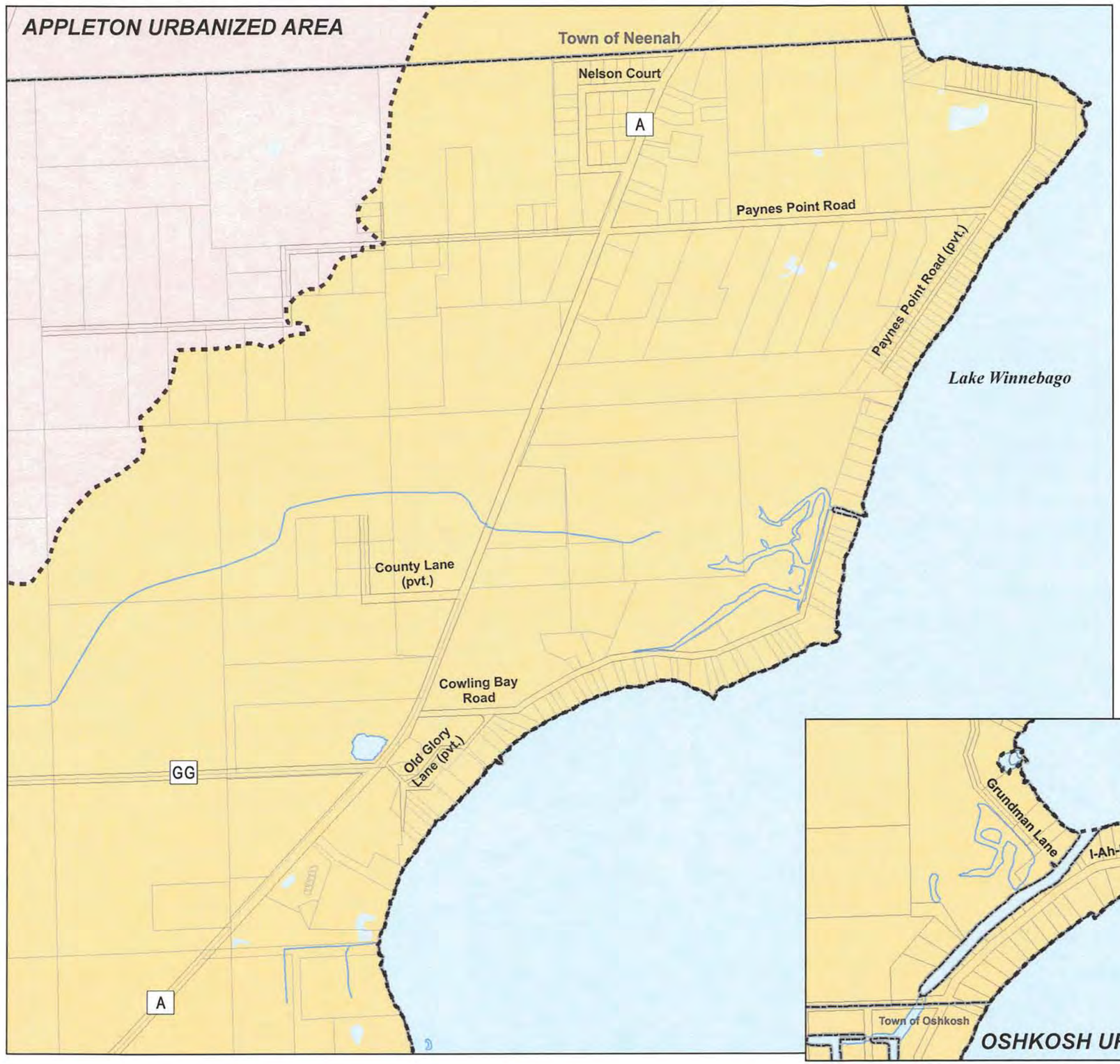
NORTH

0 800 1,600 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 2
**STUDY AREA**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

W:\DWG\V0006\970425\10\ArcView\mxd\Figure_2_B.mxd July 16, 2008 kpk







**Sub-Watersheds**

- Neenah Slough Sub-Watershed
- Lake Winnebago Sub-Watershed

**Other Mapped Features**

- Municipal Boundary
- Right-of-Way
- Parcel Line
- Stream
- Surface Water

Sources: Winnebago County, 2006.

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NORTH

0 800 1,600 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 3
**SUB-WATERSHED**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

W:\DWG\V\0006\07042510\ArcView\mxd\Figure_3_B.mxd September 17, 2008 kpk

APPLETON URBANIZED AREA

Town of Neenah

Nelson Court

A

Paynes Point Road

Paynes Point Road (pvt.)

Lake Winnebago

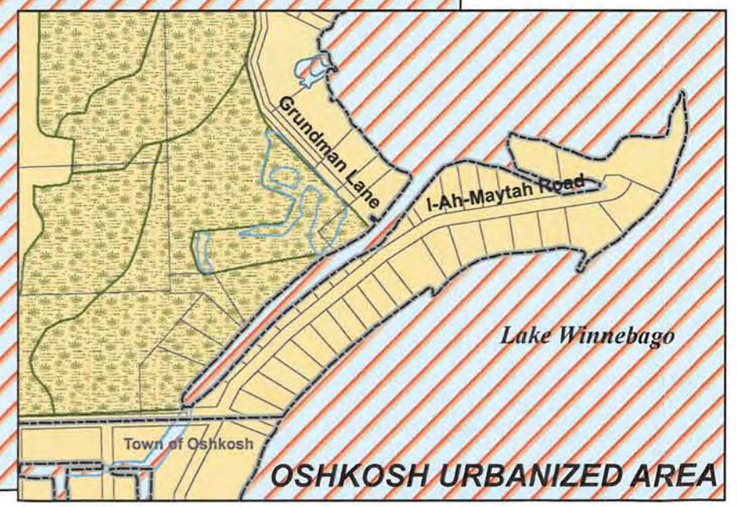
County Lane (pvt.)

Cowling Bay Road

Olg Glory Lane (pvt.)

GG

A




**Natural Resources**

- WDNR Wetland Inventory
- 303(d) Impaired Waters
- Surface Water
- Stream

**Sub-Watersheds**

- Neenah Slough Sub-Watershed
- Lake Winnebago Sub-Watershed

**Other Mapped Features**

- Municipal Boundary
- Right-of-Way
- Parcel Line

Sources: Winnebago County, 2006.

Disclaimer: The property lines, right-of-way lines, and other property information on this drawing were developed or obtained as part of the County Geographic Information System or through the County property tax mapping function. McMahon Associates does not guarantee this information to be correct, current, or complete. The property and right-of-way information are only intended for use as a general reference and are not intended or suitable for site-specific uses. Any use to the contrary of the above stated uses is the responsibility of the user and such use is at the user's own risk.

NORTH

0 800 1,600 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 4
**NATURAL RESOURCES**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

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APPLETON URBANIZED AREA

Town of Neenah

Nelson Court

A

Paynes Point Road

Paynes Point Road (pvt.)

Lake Winnebago

County Lane (pvt.)

Cowling Bay Road

GG

A


**Natural Resources**

- HSG A
- HSG B
- HSG C
- HSG D

**Other Mapped Features**

- Municipal Boundary
- Right-of-Way
- Parcel Line
- Stream
- Surface Water

Sources: Winnebago County, 2006.

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NORTH

0 800 1,600 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 5
**SOILS**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

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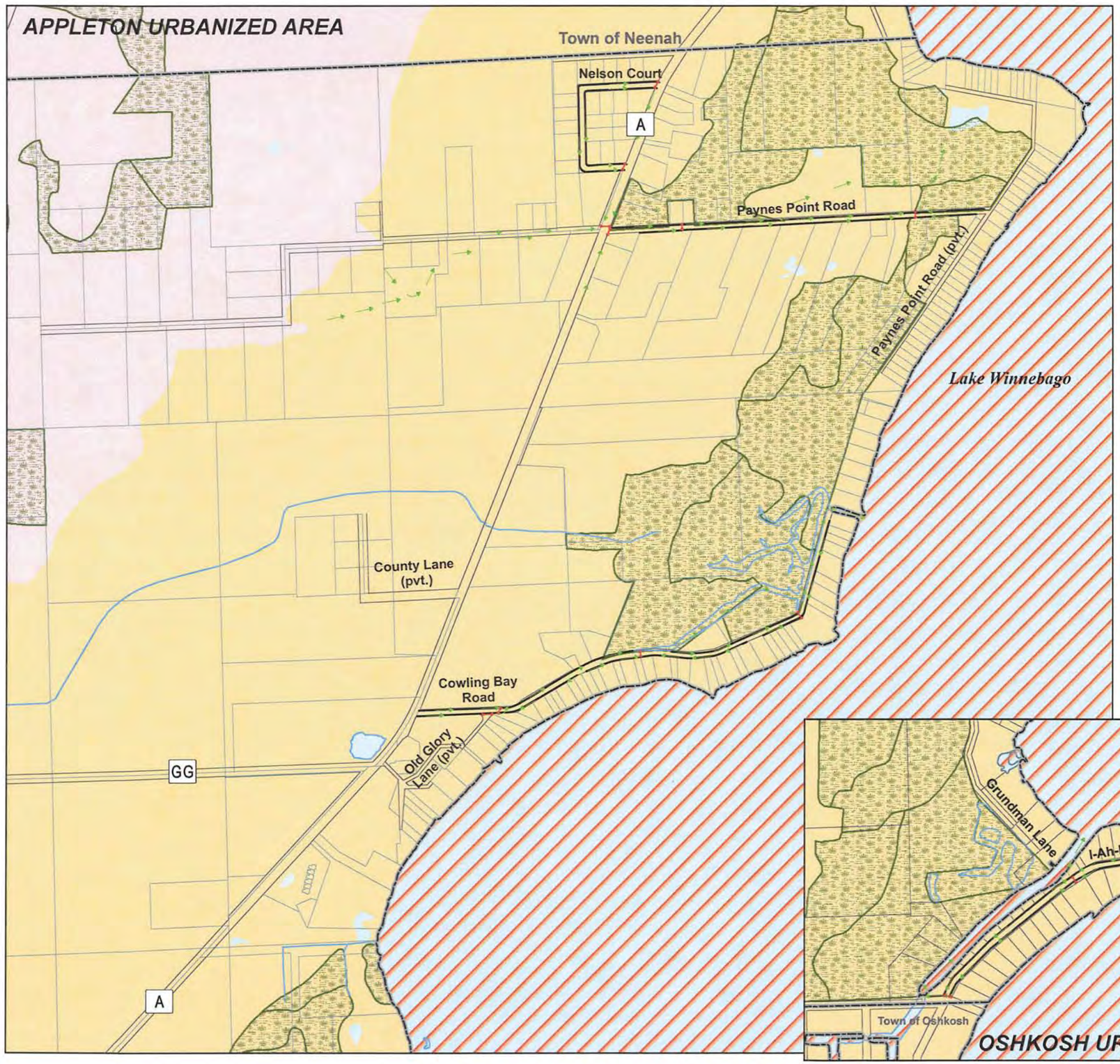





**MS4 Drainage System**

- Bridges and Culverts
- Flow Arrows
- Ditch System

**Sub-Watersheds**

- Neenah Slough Sub-Watershed
- Lake Winnebago Sub-Watershed

**Other Mapped Features**

- Municipal Boundary
- Right-of-Way
- Parcel Line
- Stream
- Surface Water
- 303(d) Impaired Waters

Sources: Winnebago County, 2006.

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NORTH

0 800 1,600 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 6
**MS4 SYSTEM**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

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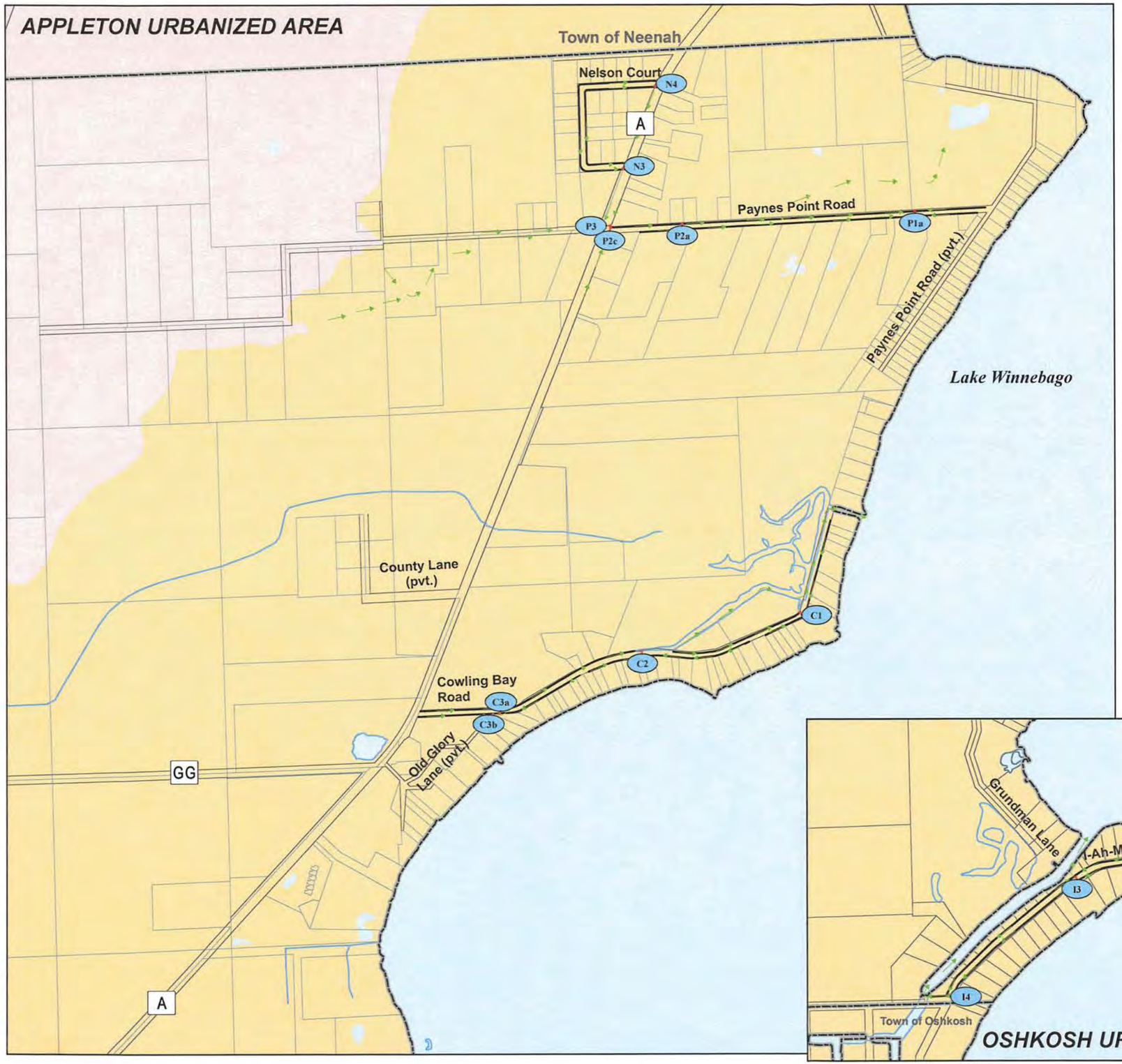


**MS4 Drainage System**

- P1a Bridge and Culvert ID
- Bridges or Culverts
- Flow Arrow
- Ditch System

**Sub-Watersheds**

- Neenah Slough Sub-Watershed
- Lake Winnebago Sub-Watershed

**Other Mapped Features**

- Municipal Boundary
- Right-of-Way
- Parcel Line
- Stream
- Surface Water

Sources: Winnebago County, 2006;
Department of Natural Resources, 2007.



NORTH

0 800 1,600 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 7
**BRIDGES AND CULVERTS**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

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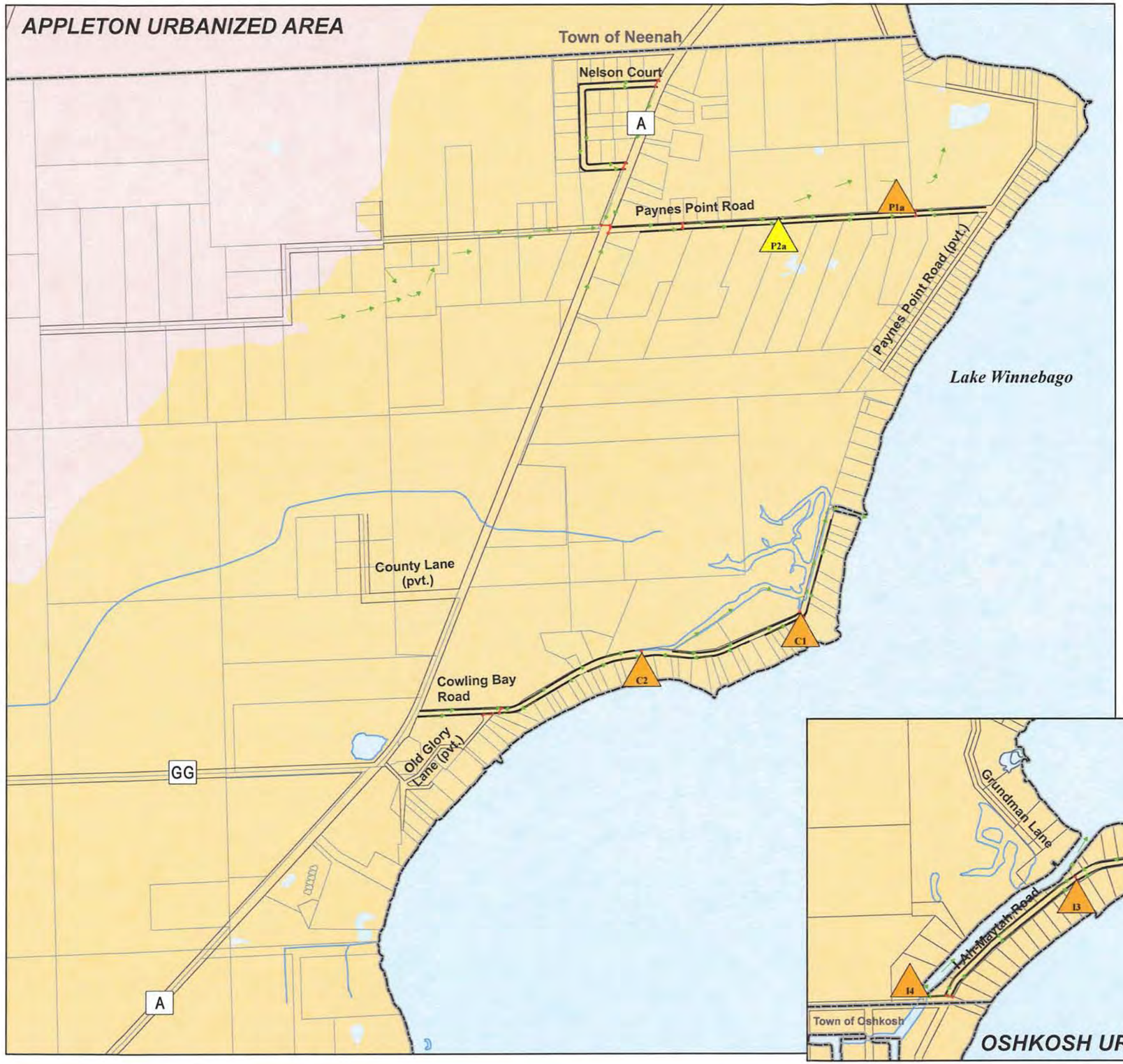





**MS4 Drainage System**

- Major Outfall ID (P2c)
- Minor Outfall ID (P1a)
- Bridges or Culverts
- Flow Arrow
- Ditch System

**Sub-Watersheds**

- Neenah Slough Sub-Watershed
- Lake Winnebago Sub-Watershed

**Other Mapped Features**

- Municipal Boundary
- Right-of-Way
- Parcel Line
- Stream
- Surface Water

Sources: Winnebago County, 2006;
Department of Natural Resources, 2007.

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NORTH

0 800 1,600 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 8
**OUTFALLS**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

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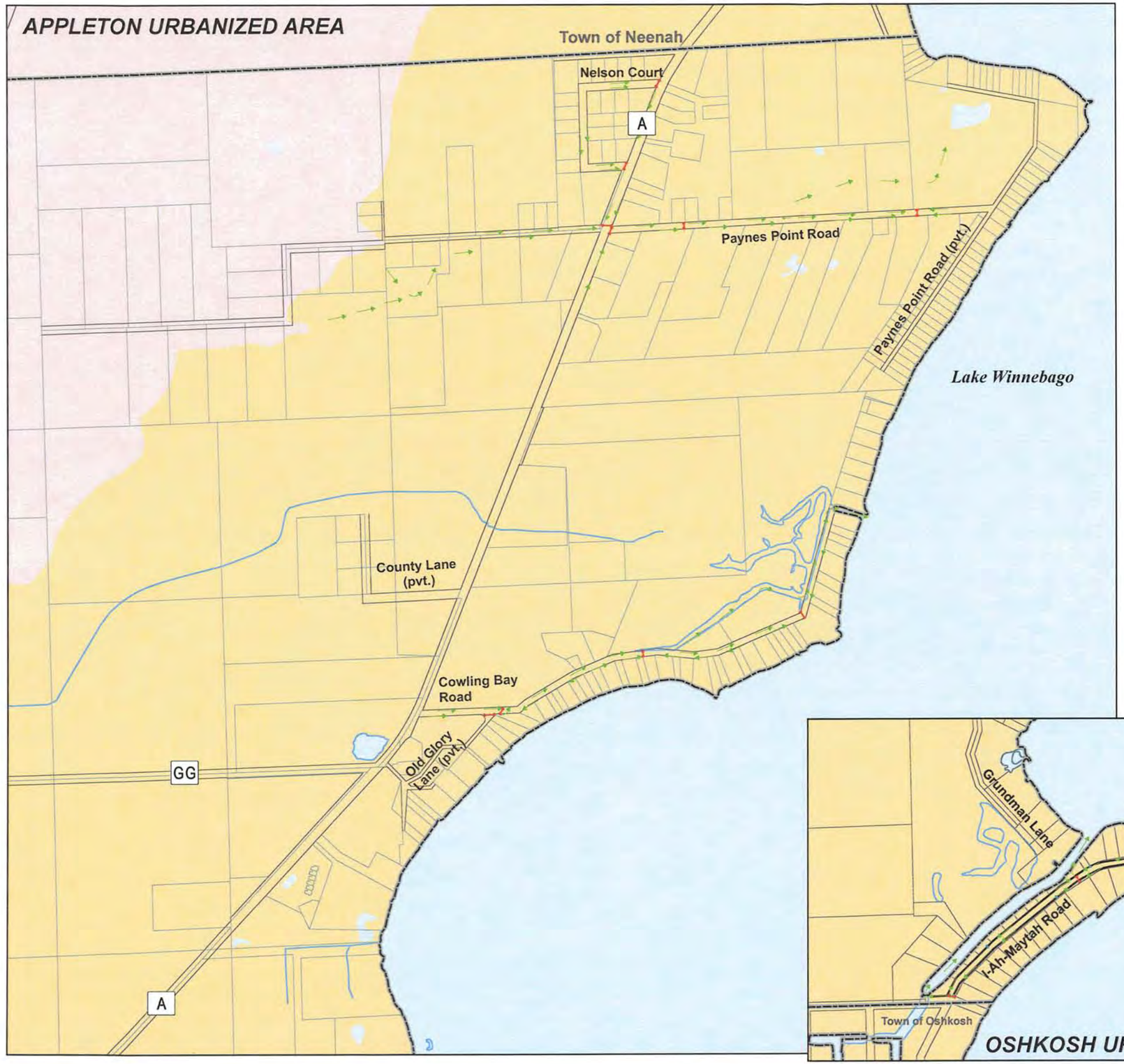





**MS4 Drainage System**

- N2 Structural BMP ID (NA)
- Bridges or Culverts
- Flow Arrow

**Sub-Watersheds**

- Neenah Slough Sub-Watershed
- Lake Winnebago Sub-Watershed

**Other Mapped Features**

- Municipal Boundary
- Right-of-Way
- Parcel Line
- Stream
- Surface Water

Sources: Winnebago County, 2006; Department of Natural Resources, 2007.

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NORTH

0 800 1,600 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 9
**STRUCTURAL BMPs**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

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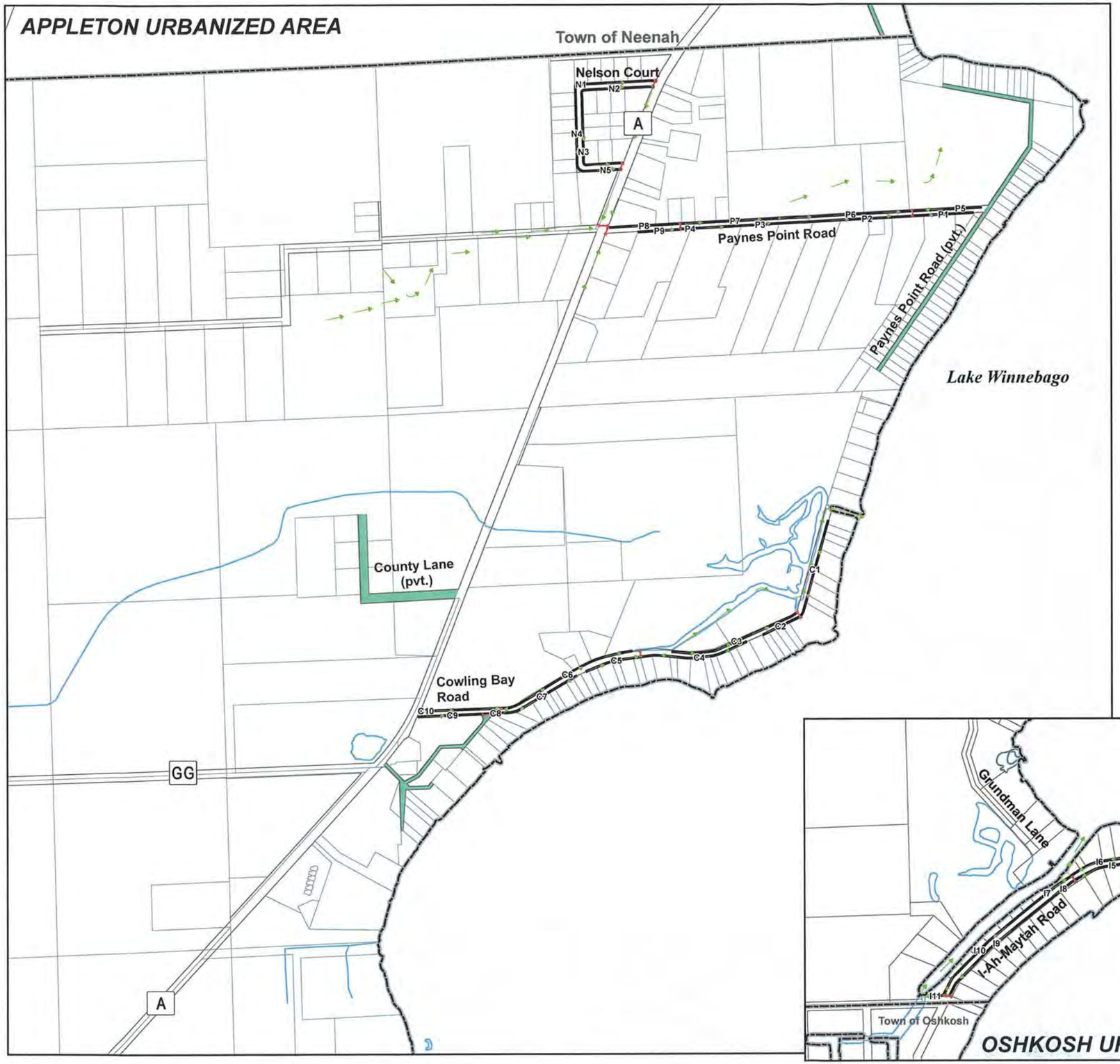


TOWN OF VINLAND est. 1849

**MS4 Drainage System**

- Bridges or Culverts
- Flow Arrow
- Ditch System
- P1 Ditch ID

**Other Mapped Features**

- Private Road
- Municipal Boundary
- Right-of-Way
- Parcel Line
- Stream
- Surface Water

Sources: Winnebago County, 2006.

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NORTH

0 800 1,600 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 10
**SURFACE DRAINAGE**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

W:\DWG\V0006\070425\10\ArcView\mxd\Figure_10_B.mxd January 5, 2009 kpk

## APPLETON URBANIZED AREA

Town of Neenah

N4 Nelson Court
N2
N3
N1
P4
P3
P2b
P2a
P1d
P1c
P1a
P1b
P2c
P1e
Paynes Point Road
Paynes Point Road (pvt.)
Lake Winnebago
County Lane (pvt.)
C1a
C1c
C1b
C2a
C2b
C2c
C3a
C3c
Cowling Bay Road
C3b
C3b2
Old Glory Lane (pvt.)

## OSHKOSH URBANIZED AREA

Grundman Lane
I-Ah-Maytah Road
I1c
I1b
I2c
I2b
I2a
I1a
I3c
I3a
I3d
I3b
I4a
I4b
Lake Winnebago
Town of Oshkosh

**Mapped Features***

- Municipal Boundary
- Right-of-Way
- Parcel Line
- Stream
- Surface Water
- I1c Drainage Area

*No WPDES Industrial Permits or Publically Owned Lands (Beyond ROW) are located within in the Vinland study area.

Sources: Winnebago County, 2006.



NORTH

0 600 1,200 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 11
**DRAINAGE AREAS**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

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**SLAMM Standard Land Uses**

**Residential**
- LDR - Low Density Single Family Residential (0.5 acre to 1.5 acre lots)
- MDR - Medium Density Single Family Residential (0.25 acre to 0.5 acre lots)
- MDRA - Medium Density Single Family Residential w/ Alleys (0.25 acre to 0.5 acre lots)
- HDR - High Density Single Family Residential (0.125 acre lots or smaller)
- HDRA - High Density Single Family Residential w/ Alleys (0.125 acre lots or smaller)
- MFR - Multi-Family Residential (3 or more families, 1-3 story height)
- HRR - High Rise Residential (1.5 acre to 5 acre lots, > 3 story)
- SUBR - Suburban Residential (1.5 acre to 5 acre lots)
- MOBR - Mobile Home or Trailer Park Residential

**Institutional**
- SCHOOL - Public or Private School
- UNIV - University, College, Technical School, etc.
- HOSP - Medical Facilities including Nursing Homes, Hospitals, etc.
- MISC - Miscellaneous Facilities (Churches, Institutional Property)

**Commercial**
- CDNTN - Downtown Commercial and Institutional Areas
- CSTRIP - Strip Commercial Areas (Courthouses, Police Stations, etc.)
- SHCNTR - Shopping Centers (parking lot is 2.5 times building area)
- OFFPRK - Office Parks (non-retail, multi-story, insurance, government)

**Industrial**
- LIGHTI - Light Industrial Areas (storage and distribution of goods for retail or sale)
- MEDI - Medium Industrial Areas (lumber, junk, or auto salvage yard, ag., co-op, oil tank farm, coal and salt storage, slaughter house)
- AIRPRT - Airport Facilities

**Open Space**
- CEM - Cemeteries, including grounds, roads, and buildings)
- PARK - Outdoor Recreational Areas (golf course, arboretums, botanical gardens, municipal playgrounds, and natural areas)
- AGRIC - Agriculture, including limited roads and buildings
- OSUD - Undeveloped Land that is Vegetated with Grass
- WOODS - Undeveloped Land that is Vegetated with Woods
- WETLND - DNR Wetland Inventory Map
- WATER - Waters of the State and Other Open Waters

**Freeways**
- FREE - Limited Access Highways and Interchanges, including vegetated ROW

**Other Mapped Features**
- Streams
- Parcel Lines
- Municipal Boundary/Study Area
- Urban Planning Boundary

NORTH

0 600 1,200 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 12
**EXISTING LAND USE**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

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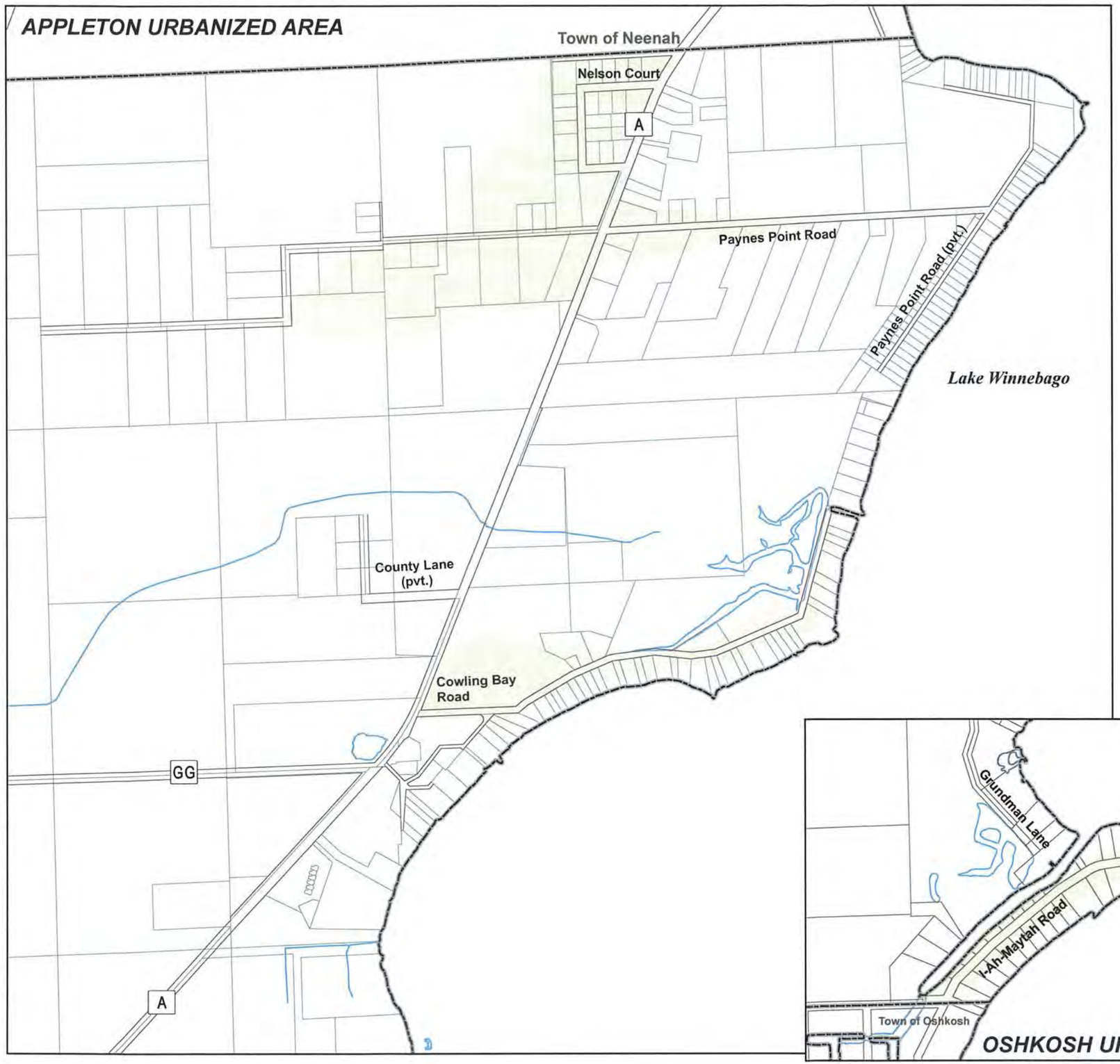





**Surface Drainage**

- Curb and Gutter (NA)
- Grass Swale with a 0.5% Longitudinal Slope
- Grass Swale with a 2.0% Longitudinal Slope (NA)
- Grass Swale with a 4.0% Longitudinal Slope (NA)

**Other Mapped Features**

- Municipal Boundary
- Right-of-Way
- Parcel Line
- Stream
- Surface Water

Sources: Winnebago County, 2006.



NORTH

0 800 1,600 Feet

McMAHON ENGINEERS ARCHITECTS

FIGURE 13
**EXISTING BMPS**
STORM WATER MANAGEMENT PLAN
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

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# APPENDIX C

**Public Education & Outreach**

**DRAFT WEB PAGE**
**TOWN OF VINLAND**

## Stormwater Pollutants

When it rains or snow melts, stormwater runoff flows across the surface of streets, parking lots, driveways, sidewalks, roofs, lawns, and other surfaces. As the water flows, stormwater runoff collects and carries away pollutants such as sediment, fertilizer, pesticides, grass clippings, leaf debris, litter, pet waste, soap, motor oil, and antifreeze. Some pollutants are partially removed by pollutant reduction practices, such as wet detention ponds. Other pollutants are not reduced before discharging into local streams, rivers, and lakes.

## How Can I Help Reduce Stormwater Pollutants?

Stormwater pollution occurs from a wide variety of activities. Each of us can contribute to the problem without fully realizing. You can help reduce pollution by keeping potential pollutants away from storm drains, ditches, and waterways. Actions that landowners and businesses can take to help reduce the amount of stormwater pollutants discharged into local water bodies are described in the following materials:

- Pet Waste — Topic 2 (Good-Dog-Good-Owner.pdf)
- Kids Can Help Too — Topic 3 (Kids-can-help-too.pdf)
- Vehicle Washing — Topic 2 (Vehicle-Maintenance.pdf)
- Lawn Care & Fertilizers — Topic 3 (The-Perfect-Lawn.pdf)
- Leaves & Yard Waste — Topic 3 (Leave-Your-Leaves-on-Land.pdf)
- Residential Infiltration — Topic 5 (The-Perfect-Landscape-7-9-19.pdf)
- Streams & Shorelines — Topic 4 (Restore-Your-Shore-extended-margins.pdf)
- Green Infrastructure — Topic 6 & 8 (Green_Infrastructure_brochure_final.pdf)
- Construction — Topic 6 (Construction-BMPs-Erosion-Sediment-Control.pdf)
- Household Waste — Topic 2 (Household-Hazardous-Waste.pdf)
- Pool / Spa Discharge — Topic 1 (Pool-Spa-Discharge.pdf)
- Power Washing — Topic 1 (Power-Washing.pdf)
- Carpet Cleaning — Topic 1 & 7 (Carpet-Cleaning.pdf)

**Stormwater Pollutants Are Regulated in the Town**

The U.S. Environmental Protection Agency (EPA) and Wisconsin Department of Natural Resources (DNR) require the Town to operate its stormwater system in conformance with the WPDES Municipal Stormwater Discharge Permit. The purpose of the MS4 Permit is to regulate and reduce pollutants discharged into local water bodies. The Town discharges into the Fox River, Neenah Slough, and Lake Winnebago. Each year, the Town submits an annual report to the Wisconsin DNR, which summarizes its permit activities from the prior calendar year. A copy of the Town's most recent MS4 Annual Report is provided below.

- Town's 2020 MS4 Annual Report

In 2012, the EPA approved a Total Maximum Daily Load (TMDL) or "pollution diet" for the Fox River and Neenah Slough. In 2020, the EPA approved a Total Maximum Daily Load (TMDL) or "pollution diet" for Lake Winnebago. The TMDLs require the Town and other local municipalities to develop programs and construct improvements in order to reduce discharges of sediment and phosphorus into these water bodies, with the goal of improving water quality. As part of the process, the Wisconsin DNR requires each regulated municipality to develop a TMDL Action Plan to reduce pollutants in urban stormwater runoff, including the Town. For additional information on Wisconsin's TMDL process and the TMDL reports for the Lower Fox River Basin and Upper Fox River Basin, please visit the following DNR webpage link.

- https://dnr.wisconsin.gov/topic/TMDLs/TMDLReports.html

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# GOOD DOG, GOOD OWNER

## You can be a responsible pet owner and protect our waters.

Your dog brings a lot of joy to your life. Enjoying your four legged friend doesn't need to come at the price of clean water. We can have both. But to make it happen, we all need to think a little differently.

### MORE TO WASTE THAN MEETS THE EYE

Pet waste is not only an unpleasant find on a yard or sidewalk, it carries bacteria that causes beach closings in the summer.

**Pet waste is not only an unpleasant find on yard or sidewalk, it carries bacteria that make beach closing necessary in the summer.**

Campylobacteriosis and salmonellosis are often the cause of the "24-hour bug". They're transferred through fecal material from an infected person or animal.

Toxoplasmosis is carried by a single-cell parasite that lives in infected animal feces (typically cats). In pregnant women, it can pass through the umbilical cord to the unborn fetus, causing serious abnormalities.

### WASTE DISPOSAL

Prevent bacteria in our streams by carrying small plastic bags when walking your dog. Collect droppings, tie a knot in the bag, and dispose of it properly. Do not throw pet waste down the sewer.

At home, pick up pet waste often. Even waste in your backyard can pollute local waterways. You can flush the waste down the toilet, put it in your trash can (be sure to check your local ordinances first!) or bury it in your yard.

Stormwater is rain or snowmelt and water from things people do, like overwatering the lawn. As water makes its way to the storm drain it picks up pollutants like oil from car leaks and bacteria from pet waste. When we choose products carefully and dispose of products properly, we can greatly reduce the amount of pollution that enters our local waters through runoff.

Untreated runoff is the biggest threat to our nation's water quality, according to the U.S. Environmental Protection Agency. Let's make the small, important changes that will reduce that threat and improve water quality and our lives!

**Realize**

What touches the ground enters the water

**Northeast Wisconsin Stormwater Consortium**
P.O. Box 1861 Appleton, WI 54912 | 920.915.5767

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# KIDS CAN HELP TOO!

## There are lots of things kids can do to help keep our rivers and lakes clean.

Have you ever thought about where rain goes after it lands on your house or drive-way? Rain drops roll down your driveway and into the road. Once in the road, rain enters the storm drain - the grates that are in city streets.

Do you know what happens to things that enter the storm drain? Water or any thing else that enters those drains travel through pipes that empty right into our rivers and lakes!

You can help clean up our local rivers and lakes by making sure that only rain goes down the storm drain.

**You can help clean up our local rivers and lakes by making sure that only rain goes down the storm drain!**

### CLEAN UP AFTER YOUR PET!

Pet waste is not only gross to find in yards or on sidewalks, it carries bacteria and germs that cause beach closings in the summer. To keep our waters clean, pick up after your pet often. Even waste in your backyard can pollute local waters. Bring a small plastic bag with you on walks and pick up after your dog.

### HELP WITH THE YARD

Grass clippings and leaves from our yards are causing our lakes and rivers to turn green! You can help by sweeping grass clippings off your driveway and sidewalk back onto your lawn after your mom or dad mows the grass. You can also help your dad and mom rake up the leaves in your yard in the fall!

### GET SOME EXCERCISE

You may have heard that car and trucks can cause air pollution but did you know that driving cars and trucks can also affect water? Oil, grease and dirt that fall from our vehicles when we are driving are washed into storm drains and into our rivers and lakes. One way to help clean up water is to drive less. Instead of asking for a ride, ask your mom or dad if you can walk or bike with them to a friend's house or the park!

**Most importantly, never put anything down the storm drain. The fish and frogs and especially your friends don't like to swim with garbage! Only rain should go into the drain!**

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# VEHICLE MAINTENANCE

## Get where you need to go and minimize the impact on local waters.

We don't think much of jumping in the car and running to the store. You may have heard that air quality is affected by vehicle emissions but have you realized that our quick trips affect our area waters? Read these tips. Help us change one habit at a time so that we can enjoy good fishing, swimming, paddling and waterskiing when our running about is done.

### WASHING

When you wash a car in a driveway or street, wash water flows into the storm sewer system and directly to local rivers - along with dirt, emissions and detergent. You can avoid this by using a commercial car wash, where systems direct wash water to the local wastewater treatment facility and oil, grease, detergent, sand, and grime are removed.

**When you're tempted to put off repairs or the six-month maintenance check, think again. When your car performs better, our waters fare better, too.**

If you must wash your car at home, use biodegradable soap, wash it on your lawn or on other unpaved areas to keep runoff out of storm sewers or ditches, and dispose of leftover washwater in the toilet or sink.

### MAINTENANCE

From time to time, we've all noticed an oily sheen on water in streets and parking lots. It's the result of small leaks, accumulated residues, and fuel overfills from our cars. When a vehicle is maintained, fewer leaks spill onto streets and highways and fewer contaminants enter our streams.

So when you're tempted to put off repairs or the six-month maintenance check, think again. When your car performs better, our waters fare better, too.

### MINDFUL DRIVING

We all know air quality is affected by vehicle emissions. But did you know emissions can also affect water quality? Tiny particles emitted from tail pipes settle on roadways, wash into storm sewer systems, then flow into rivers and streams. Their impact may seem small, but when you consider all the vehicles traveling on our roads, the impact is clear.

Street sweeping can minimize the impact of this pollution but rain and melting snow still carry contaminants to storm sewers. One way we can reduce this pollution is to drive less. Plan trips so you accomplish several things at once. Use public transportation. Even better, walk or ride your bike.

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# THE PERFECT LAWN

## You can create a beautiful outdoor space and protect our waters.

A gorgeous home landscape doesn't need to come at the price of clean lakes and streams. We can have both. But to make it happen, we all need to think a little differently. Read these tips. Post this sheet in your garage near the lawnmower and garden tools. This will help us change one habit at a time, so we have good fishing, swimming, paddling and waterskiing when the work is done.

### MOWING

Mow often, when the grass is 3.5 inches or shorter. Set your mower blade at 2.5 inches and let cuttings fall. Cuttings keep the soil moist and restore nutrients over time. Any mower works, but a mulching mower shreds grass finely, so you don't have to be as careful about grass height.

A healthy, mulched lawn outcompetes weeds for light, nutrients, and water. In areas where it's hot, consider prairie grasses or wild flowers instead of turf grass.

Make an effort not to blow cuttings onto pavement. If you do, sweep them up, then lay them around the roots of shrubs or vegetable plants where they help retain moisture.

If grass gets long and you decide to collect clippings, put them in a pile with other yard waste and let them decompose. Turn the pile now and then, and in 3-6 months you'll have rich organic matter that will make almost anything in your yard grow better.

### FERTILIZING & WEED CONTROL

Chemicals and weed killers are not needed for a healthy lawn, and they're one of the main reasons we have green algae in our lakes and streams.

Think before you buy. Get a soil test so you know if your lawn needs more nutrients. Mulch to keep the lawn healthy, so it can outcompete weeds for light, nutrients and water. If you must fertilize, do it in the fall. Sweep up fertilizer that falls in the street and dispose of it properly—water and fertilizer that go into the street go directly to the river or lake.

### WATERING

When watering is needed, use a sprinkler that shoots low to the ground. Sprinkle soil, not the street. Shape soil so water will sink in, rather than run off. When you mow, mulch cuttings to retain moisture.

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# LEAVE YOUR LEAVES ON LAND

**Fall leaves provide beautiful color on trees, but in local waters they contribute to algal blooms. Leaves are a leading contributor of phosphorus in our waters.**

Properly cleaning up your yard in the fall will help keep our local waters clean too! Read these tips. Post this sheet in your garage near your rakes. Working together to keep leaves out of the storm drain and out of local waters will help keep green on the land and out of the water.

## KEEP YOUR LEAVES ON YOUR PROPERTY

A great way to make sure leaves do not end up in local waters is to keep them on your property!

Mulch leaves in place by making several passes over the leaves with a mulching mower. This will keep leaves on your lawn and provide it with nutrients it needs for healthy grass next spring.

Collect mulched leaves and spread them in garden beds or under shrubs. Leaves provide valuable protection for plants through the winter and also provide nutrients for spring growth.

**Composting is recycling your lawn trimmings and turning them into a valuable resource for your garden or houseplants!**

## COMPOSTING

Composting is recycling your lawn trimmings and turning them into a rich soil, know as compost - a valuable resource for your garden or houseplants.

**Cold composting** requires little maintenance but can take up to 2 years to complete. To create a cold compost pile, mix non-woody yard wastes and let them sit.

**Hot composting** requires regular maintenance such as turning and watering, but can create compost in typically 1-3 months time. To create a hot compost pile, mix equal amounts of high nitrogen “greens” (wet and soft materials such as grass clippings) and high-carbon “browns” (dry and woody materials such as dead leaves) with 10% bulky materials such as wood chips. The mix should remain moist but not wet and should be turned often.

***More information on Composting can be found on the internet.***

## RAKING & COLLECTION

If you decide to collect your leaves for removal from your yard, follow your community leaf collection policies and schedules. Put a tarp over leaf piles between pick-up times to prevent them from blowing away. Remove leaves and debris from the gutters and storm sewer inlets.

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# THE PERFECT LANDSCAPE

## You can create a beautiful outdoor space and protect our waters.

A gorgeous home landscape doesn't need to come at the price of clean lakes and streams. We can have both. But to make it happen, we all need to think a little differently.

### LESS HARD SURFACE

The more concrete or blacktop your property has, the more water will run off the property and into storm drains and ditches. Seventy-five percent more rain water sinks into the ground in a natural versus developed area. Stormwater that flows from developed areas also carries oil, grease, fertilizer, bacteria, exhaust particles, etc. Planning for minimal hard surface on your property makes good sense. Consider the amount of runoff that will be generated by roofs, pavement and sidewalks. Focus on natural plantings to slow water so that it filters into the ground rather than runs off. Where needed, install pavement such as open bricks that allow water to sink into the ground.

**75% more rain water sinks into the ground in a natural vs. developed area.**

Minimizing runoff reduces damage to your property and others down stream. It may also save you money if you live in a city that has a stormwater utility, since storm water utility fees are based on the amount of runoff your property sends to the storm sewer system.

### RAIN GARDENS

Rain gardens are slight depressions in a yard that act as receiving areas for rain water that runs off your roof and downspouts. Rain gardens capture rainwater before it picks up oil, grease, fertilizer, pet waste or other contaminants. Rain gardens replenish groundwater by infiltrating runoff, rather than passing it into the stormwater system. Often they're planted with native plants that thrive on moisture, but can withstand a dry period, too.

### RAIN BARRELS

A rain barrel captures water that flows from a roof through downspouts. Commonly, the rain barrel is a 55-gallon drum designed specifically to hold water without creating a mosquito breeding habitat. A tight fitting lid, seal for the downspout, and filtered overflow valve allow overflow water to move away from the rain barrel.

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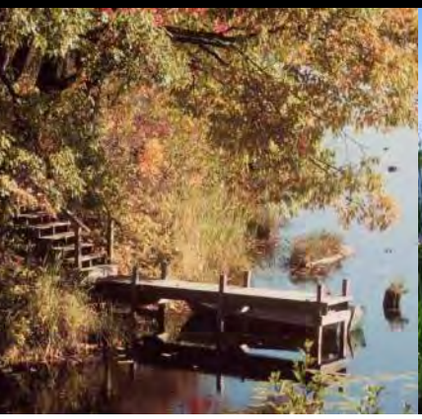

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# Restore Your Shore

## Redefining the "perfect" shoreline will provide beauty and color to the shoreland, increase habitat for wildlife and ultimately increase water quality.

The number of people living near and using Northeast Wisconsin's waters is at an all time high and continues to increase. You may have purchased your water front property because you enjoy fishing, swimming, boating, bird watching or simply unwinding by dangling your feet in the water. As more and more of us buy or build homes on the shores of our lakes and rivers, we threaten the very qualities that brought us there.

### "Perfect Shoreland Lot" - Not so Perfect

Decades of traditional lawn maintenance have led to ideas about what the "perfect shoreland lot" should be. Large lawns mowed all the way to the water's edges and no aquatic vegetation are seen at properties on lakes and rivers across Wisconsin. Creating this "perfect shoreland lot" has led to a serious loss of natural shoreland habitat and poor water quality on thousands of lakes.

To protect our waters and the recreation we enjoy, we must redefine our definition of the perfect shoreland lot and begin to landscape for wildlife and water quality.

### What's the Problem?

Plants that were a natural part of the water's edge prior to development provided more than beauty and color to the shoreland. Plants, both living and dead, provided habitat for wildlife both in and out of the water. Water quality is improved when the plant and animal community on the water's edge thrives. Native plants on the shore and in the water filter pollutants entering the water. By altering the water's edge of our lakes and rivers, we have destroyed habitat, disrupted the natural balance and decreased water quality.

### Bringing "Natural" back to Nature

To protect our waters and the recreation we enjoy we need to redefine our definition of the perfect shoreland lot and begin to landscape for wildlife and water quality. Create a buffer zone, which is a natural strip of vegetation along your property's frontage. The goal of a bufferstrip is to restore the shoreline, both on shore and in the water, with the vegetation that occurred there naturally. This includes, trees, shrubs, wildflowers, shoreline plants, grasses and submersed aquatic vegetation. For more information on shoreland restoration visit our website RenewOurWaters.org.

Northeast Wisconsin Stormwater Consortium
P.O. Box 1861 Appleton, WI 54912 | 920.858.4246

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EPA
United States
Environmental Protection
Agency

# Different SHADES of green

**GREEN INFRASTRUCTURE RESEARCH**
at the U.S. Environmental Protection Agency

## The Problem with Water Runoff

Conventional stormwater infrastructure, or gray infrastructure, is largely designed to move stormwater away from urban areas through pipes and conduit. Runoff from these surfaces can overwhelm sewer systems and end up contaminating local waterways. When stormwater runs off impervious streets, parking lots, sidewalks, and rooftops, it moves pollutants such as motor oil, lawn chemicals, sediments, and pet waste to streams, rivers, and lakes. Runoff flows can also cause erosion and flooding that can damage property, infrastructure, and wildlife habitat. In addition to runoff problems, impervious surfaces also prevent water from penetrating the soil and recharging groundwater supplies.

## What is Green Infrastructure?

Green infrastructure uses plants, soils, landscape design, and engineered techniques to retain, absorb, and reduce polluted stormwater runoff. Green infrastructure prevents or reduces the amount of runoff that flows directly into storm drains and can be a vital tool for cities to address combined sewer overflows and nutrient impairment. It provides many environmental, social, and economic benefits that promote urban livability, such as improved surface water quality, water conservation, and improved aesthetic and property value. EPA is developing innovative tools for communities to use for planning and installing green infrastructure for achieving its many benefits.

## Types of Green Infrastructure Practices

***Permeable Pavements*** are porous paved surfaces that allow rain to infiltrate into soils. Permeable pavements can be constructed from various materials such as pervious concrete, porous asphalt, and permeable interlocking pavers.

***Rain Gardens*** are depressed areas in the landscape, planted with grasses, flowers, and other plants, that collect rain water from a roof, driveway, or street and allows it to infiltrate into the ground. Rain gardens can also help filter out pollutants in runoff and provide food and shelter for butterflies, song birds, and other wildlife. More complex rain gardens with drainage systems and amended soils are often referred to as bioretention cells.

***Bioretention Cells (or Bioswales)*** are depressions that contain vegetation grown in an engineered soil mixture placed above a gravel drainage bed which slow, infiltrate, and filter runoff. They provide storage, infiltration, and evaporation of both direct rainfall and runoff captured from surrounding areas. As linear features, bioretention cells are particularly well suited to being placed along streets and parking lots.

***Vegetative Swales*** are channels or depressed areas with sloping sides covered with grass and other vegetation. They slow down the conveyance of collected runoff and allow it more time to infiltrate the native soil beneath it.

***Infiltration Trenches*** are narrow ditches filled with gravel that intercept runoff from upslope impervious areas. They provide storage volume and additional time for captured runoff to infiltrate the native soil below.

***Green Roofs*** are a variation of a bioretention cell. Green roofs have a soil layer laying atop a special drainage mat material that conveys excess percolated rainfall off of the roof. They contain vegetation that enable rainfall infiltration and evapotranspiration of stored water. Green roofs are particularly cost-effective in dense urban areas where land values are high and on large industrial or office buildings where stormwater management costs are likely to be high.

***Planter Boxes*** are structures with vertical walls and open or closed bottoms filled with gravel, soil, and vegetation that collect and absorb runoff. They are ideal for space-limited sites in dense urban areas.

***Rainwater Harvesting*** systems, such as rain barrels and cisterns, collect and store rainfall for later use. These systems provide a renewable water supply and can slow and reduce runoff. Rainwater harvesting can reduce demands on increasingly limited water supplies in arid regions.

***Rooftop (Downspout) Disconnection*** allows rooftop rainwater to discharge to pervious landscaped areas and lawns instead of directly into storm drains. You can use it to store stormwater and/or allow stormwater to infiltrate into the soil. Downspout disconnection could be especially beneficial to cities with combined sewer systems.

***Urban Tree Canopies*** intercept rain in their leaves and branches, thereby reducing and slowing stormwater runoff.

## Integrating
## Green Infrastructure Practices

***Green Parking*** integrates green infrastructure elements such as permeable pavements and rain gardens into a parking lot design. Such structures manage stormwater on site, mitigate urban heat islands, and create a more pedestrian-accessible environment.

***Green Streets and Alleys*** integrate green infrastructure elements such as bioswales, planter boxes, and trees into street and alley design. Green streets and alleys are designed to store, infiltrate, and evaporate and transpire stormwater while adding aesthetics to landscapes.

## Protecting *Existing Green Spaces*

In addition to green infrastructure practices, communities can also address water quality and flooding impacts of urban stormwater by protecting open spaces and sensitive natural areas within and adjacent to a city while providing recreational opportunities for city residents. Natural areas that should be a focus of these land conservation efforts include riparian areas, wetlands, and steep hillsides.

## *Environmental and Economic* Benefits of Green Infrastructure

Introducing green infrastructure to communities has many environmental and economic benefits. Green infrastructure can be a cost-effective approach to improve water quality and help communities stretch their infrastructure investments further by providing multiple environmental, economic, and community benefits.

*Examples of environmental benefits:*

- Improved water quality and increased water supply
- Reduced flooding
- Improved air quality
- Greater resilience to climate change
- Increased habitat improvement and connectivity
- Healthier communities

*Examples of economic benefits:*

- Increased property values
- Reduced filtration costs
- Infrastructure cost savings
- Reduced private and public costs

# Green Infrastructure Research

EPA's green infrastructure research supports the increased adoption of both constructed and natural green infrastructure into communities.

### *Models and decision support tools*

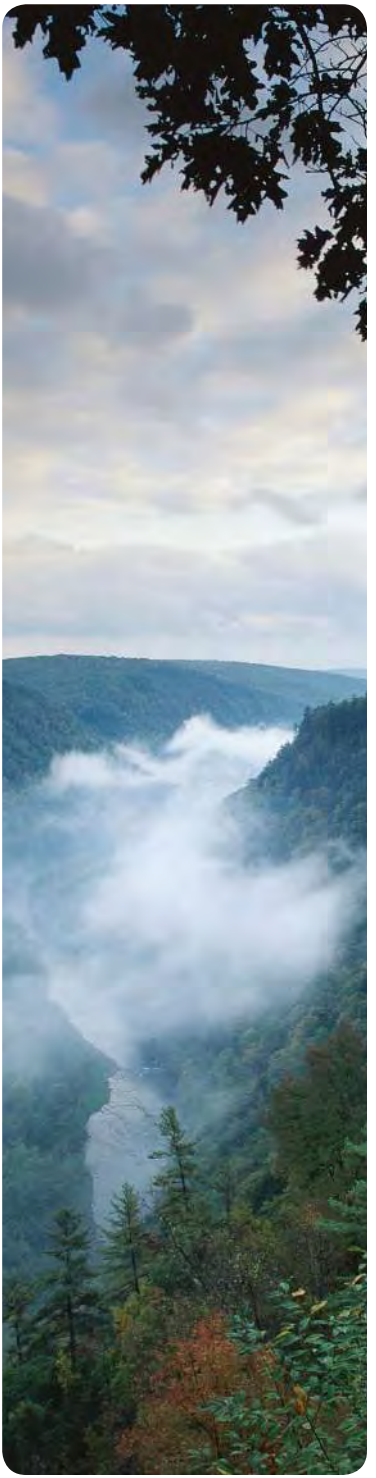
EPA researchers are analyzing and refining existing models and tools designed to increase green infrastructure practices in communities. This research will support decision-makers and allow further inclusion of green infrastructure practices into management plans that support sustainability goals.

### *Impacts of green infrastructure on groundwater resources*

EPA is researching the impacts of green infrastructure on groundwater resources to provide the basis for long-term research on the efficacy of green infrastructure as a best management practice for water resources enhancement, particularly in arid and semiarid regions.

### *Assessment of risks posed to natural wetlands used for wastewater and stormwater management*

EPA is reviewing the impacts of wastewater and stormwater on natural wetlands and riparian areas. This research will help guide decisions by regions, states, tribes, and local municipalities when incorporating green infrastructure with natural wetlands and riparian areas as part of stormwater and wastewater management plans.



## EPA Research *in Action*

### *Urban Soil Assessment*

Sewer system overflows can put cities in violation of the Clean Water Act. EPA researchers developed soil survey assessment protocol to identify the urban imprint on major US soils. The research helps urban planners, land managers, and sewer districts understand the potential for soils to support green infrastructure applications. It provides an overview of urban soils and offers recommendations for how soils can be rehabilitated to support green infrastructure or urban agriculture.

### *Transforming Cleveland's Vacant Lots*

Based on technical guidance from EPA experts, Cleveland, Ohio has incorporated a green infrastructure pilot program into their CSO control plan. This program takes advantage of the city's excess vacant land, turning that land into green spaces that can soak up stormwater and keep excess water out of the sewer system.

The transformation of urban vacant lots into park-like gardens that catch stormwater runoff not only helps remedy the CSO problem, but also improves the social and economic fabric of neighborhoods lacking green spaces.

### *Daylighting Streams to Improve Water Quality*

Researchers compared the effectiveness of buried streams (streams that are paved over or routed into underground pipes during urban development) and open-air or daylighted streams at removing harmful nitrogen. The research

shows daylighted streams are more effective at removing nitrates due to interactions with plants and other organic matter that feed on nitrates. Daylighting streams could prove to be a sustainable method for removing nitrogen and improving water quality.

### *Green Infrastructure at Fort Riley*

Researchers with EPA's Net Zero Program are working with the U.S. Army, U.S. Army Corps of Engineers, Kansas Unified School District 475, and other partners to demonstrate and assess green infrastructure technologies and performance at Fort Riley, an Army base in Kansas. EPA researchers are testing a permeable parking lot at Seitz Elementary School, which is located on Fort Riley. Researchers will measure how much rainwater passes through the pavement, how fast the permeable pavement clogs with debris, and changes in groundwater chemistry. They are also monitoring the school's existing stormwater-capture-use system, which is a set of storage tanks that capture rain runoff. For this part of the study, researchers are measuring the amount of rooftop runoff that is captured and the chemistry of the water stored in the tanks.

### *Cincinnati Green Infrastructure Efforts*

The Lick Run stream in Cincinnati, Ohio is a part of a combined sewer system that spills its polluted mixture into the nearby Mill Creek during storm events. EPA researchers collaborated with the local sewer district to monitor and adjust several green infrastructure early success projects that are designed to reduce the amount of stormwater entering combined sewers and put it to good use elsewhere.

Images above: vacant lot before and after transformation to green space and pervious pavement.

# EPA Models and Tools

EPA is developing innovative tools, technologies, and strategies for communities to manage water resources with green infrastructure to move toward more natural hydrology and increased resilience to future changes such as climate and extreme events.

### *Green Infrastructure Wizard (GIWiz)*

GIWiz is an interactive web application that connects communities to EPA green infrastructure tools and resources. GIWiz provides users with customized reports containing EPA tools and resources they select, direct links, and overview information about each.

### *Watershed Management Optimization Support Tool (WMOST)*

WMOST is a software application designed to facilitate integrated water resource management across wet and dry climate regions. The tool allows water-resource managers and planners to screen a wide range of practices, including low impact development or green infrastructure, across a watershed for cost-effectiveness as well as environmental and economic sustainability.

### *Visualizing Ecosystems for Land Management Assessment (VELMA)*

VELMA is a computer software eco-hydrological model used to quantify the effectiveness of natural and engineered green infrastructure management practices for reducing nonpoint sources of nutrients and contaminants in streams, estuaries, and groundwater.

### *Storm Water Management Model (SWMM)*

SWMM models hydrology and hydraulics to simulate the movement of water through the landscape and into and through sewer systems. A green infrastructure module was added to SWMM in 2010 to simulate the integration of green infrastructure practices, ranging from green roofs to permeable parking lots, into a community's stormwater management plan. SWMM is widely used throughout the world and considered the "gold standard" in the design of urban wet-weather flow pollution abatement approaches, and allows users to include any combination of low impact development/green infrastructure controls to determine their effectiveness in managing stormwater and sewer overflows.

### *SWMM Climate Adjustment Tool (SWMM-CAT)*

SWMM was updated to include a software utility that allows future climate change projections to be incorporated into modeling. SWMM-CAT provides a set of location-specific adjustments derived from World Climate Research Programme global climate change models. SWMM-CAT accepts monthly adjustment factors for climate-related variables that could represent the potential impact of future climate changes.

### *National Stormwater Calculator (SWC)*

SWC is a desktop application that estimates the annual amount of stormwater runoff from a specific location in the United States (including Puerto Rico), based on local soil conditions, land cover, and historic rainfall records. It is used to inform site developers on how well they can meet a desired stormwater retention target with and without the use of green infrastructure. It also allows users to consider how runoff may vary based both on historical weather and potential future climate. SWC is a resource for all Rainwater Management Credits in LEED by the U.S. Green Building Council for all project types in all rating systems.

### *Greening EPA*

EPA has buildings in over 40 locations across the country that are committed to promoting the Agency's mission to protect human health and the natural environment by incorporating sustainability wherever possible. To support this commitment and provide an opportunity for needed research, EPA constructed an experimental parking lot with rain gardens as part of a long-term research project to quantify the effects of different permeable surfaces on stormwater runoff and the ability of rain gardens to accept, store and infiltrate stormwater.

## Additional Information:

**Green Infrastructure Research:**
https://www.epa.gov/water-research/green-infrastructure-research

**Green Infrastructure Overview:**
**https://www.epa.gov/green-infrastructure**

**Greening EPA:**
**https://www.epa.gov/greeningepa**

## Contact:

EPA's Office of Research & Development, Safe and Sustainable Water Resources Research Program, sswr@epa.gov

# Stormwater and the Construction Industry

## Protect Natural Features

Bad

Good

- Minimize clearing.
- Minimize the amount of exposed soil.
- Identify and protect areas where existing vegetation, such as trees, will not be disturbed by construction activity.
- Protect streams, stream buffers, wild woodlands, wetlands, or other sensitive areas from any disturbance or construction activity by fencing or otherwise clearly marking these areas.

## Construction Phasing

Bad

Good

- Sequence construction activities so that the soil is not exposed for long periods of time.
- Schedule or limit grading to small areas.
- Install key sediment control practices before site grading begins.
- Schedule site stabilization activities, such as landscaping, to be completed immediately after the land has been graded to its final contour.

## Vegetative Buffers

Bad

Good

- Protect and install vegetative buffers along waterbodies to slow and filter stormwater runoff.
- Maintain buffers by mowing or replanting periodically to ensure their effectiveness.

## Silt Fencing

Bad

Good

- Inspect and maintain silt fences after each rainstorm.
- Make sure the bottom of the silt fence is buried in the ground.
- Securely attach the material to the stakes.
- Don't place silt fences in the middle of a waterway or use them as a check dam.
- Make sure stormwater is not flowing around the silt fence.

# Maintain your BMPs!

*www.epa.gov/npdes/menuofbmps*

## Site Stabilization

Bad

Good

- Vegetate, mulch, or otherwise stabilize all exposed areas as soon as land alterations have been completed.

## Construction Entrances

Bad

Good

- Remove mud and dirt from the tires of construction vehicles before they enter a paved roadway.
- Properly size entrance BMPs for all anticipated vehicles.
- Make sure that the construction entrance does not become buried in soil.

## Slopes

Bad

Good

- Rough grade or terrace slopes.
- Break up long slopes with sediment barriers, or under drain, or divert stormwater away from slopes.

## Dirt Stockpiles

Bad

Good

- Cover or seed all dirt stockpiles.

## Storm Drain Inlet Protection

Bad

Good

- Use rock or other appropriate material to cover the storm drain inlet to filter out trash and debris.
- Make sure the rock size is appropriate (usually 1 to 2 inches in diameter).
- If you use inlet filters, maintain them regularly.

# Stormwater and the Construction Industry

## *Planning and Implementing Erosion and Sediment Control Practices*

The construction industry is a critical participant in the nation's efforts to protect streams, rivers, lakes, wetlands, and oceans. Through the use of best management practices (BMPs), construction site operators are the key defense against erosion and sedimentation.

As stormwater flows over a construction site, it picks up pollutants like sediment, debris, and chemicals. High volumes of stormwater can also cause stream bank erosion, and destroy downstream aquatic habitat. Preventing soil erosion and sedimentation is an important responsibility at all construction sites.

In addition to the environmental impact, uncontrolled erosion can have a significant financial impact on a construction project. It costs money and time to repair gullies, replace vegetation, clean sediment-clogged storm drains, replace poorly installed BMPs, and mitigate damage to other people's property or to natural resources.

**Best Management Practice (BMP)**
A BMP is a method used to prevent or control stormwater runoff and the discharge of pollutants, including sediment, into local waterbodies. Silt fences, inlet protection, and site-stabilization techniques are typical BMPs on a construction site.

**Operator**
An operator is someone who has control over and the ability to modify construction plans and specifications (e.g. owner, general contractor)

or

Someone who has control over the day-to-day operations at a site (e.g., owner, general contractor) that are necessary to ensure compliance with the permit requirements. It is the responsibility of a construction site owner or operator to contain stormwater runoff and prevent erosion during **all** stages of a project.

There may be more than one person at a site who meets these definitions and must apply for permit coverage. (States may have different definitions of the term "operator.")

### So what's being done about polluted runoff?

The Clean Water Act includes the National Pollutant Discharge Elimination System (NPDES) permitting program. As of January 2003, 44 states and territories are authorized to issue NPDES stormwater permits. If your state isn't authorized to operate the NPDES stormwater permit program, EPA issues the permits. Permits vary from state to state, so contact your state or EPA for specific information. Your permitting authority has specific information on your state's NPDES stormwater permit program. In general, construction permits require construction operators to do all of the following:

- Develop and implement a stormwater pollution prevention plan
- Submit a permit application or notice of intent (NOI)
- Comply with the permit, including maintaining BMPs and inspecting the site

Under the NPDES program, construction activities that disturb 1 or more acres are required to obtain stormwater permit coverage. States have different names for the plans that construction operators must develop, such as

- Stormwater pollution prevention plan
- Erosion and sediment control plan
- Erosion control and stormwater management plan
- Stormwater management plan
- Water pollution control plan
- Pollution prevention plan

This document uses the term "*Plan*."

### I think I need a permit... Where do I start?

All land-disturbing activities, including clearing, grading, and excavation, that disturb **1 or more acres** are required to be covered under a state or EPA-issued NPDES construction stormwater permit **prior to land disturbance**. Permit requirements vary by state. Begin by researching the specific requirements in your state. You might already be subject to local erosion and sediment control requirements, but that doesn't release you from the requirements of the NPDES program at the state or EPA level. Although you must comply with both sets of requirements, in most cases they have been designed to be complementary. Contact your permitting authority to find out exactly what you need to do. A good place to start your search is the Construction Industry Compliance Assistance web site at http://www.envcap.org/cica.

The NPDES permit requirements include small construction activities that are part of a larger common plan of development or sale, such as a single lot within a larger subdivision. For developments with multiple operators, all operators must have permit coverage for their individual parts of the larger development, no matter how large or small each operation happens to be. When there are multiple operators at one site, they're encouraged to develop and share one comprehensive Plan and obtain permit coverage as co-permitees.

**Construction sites that discharge unpermitted stormwater are in violation of the Clean Water Act and may be subject to fines of up to $27,500 a day per violation.**

The **owner or operator** of the construction site is responsible for complying with the requirements of the permit. Responsibilities include developing a Plan, obtaining permit coverage, implementing BMPs, and stabilizing the site at the end of the construction activity.

#### Determine your eligibility

All construction activity that disturbs 1 or more acres of land, as well as activity that disturbs less than 1 acre but is part of a larger common plan of development, must obtain permit coverage.

#### Read and understand your stormwater permit requirements

Get a copy of the permit for construction activities and a permit application (or notice of intent form) from your state or EPA permitting authority.

#### Develop a Plan

Most states do not require you to submit your Plan. However, you do need to keep the Plan on site. If that's impractical, you may post a notice that tells where the Plan is kept so it can be accessed by the permitting authority and other interested parties.

You'll need to post a copy of your completed application on site. Put it in a place where the public can see it so they'll know your site is covered by an NPDES permit!

#### Apply for permit coverage

Once you understand your permit requirements and have developed a Plan, you can submit a stormwater permit application (or notice of intent) to your permitting authority. This must be done before beginning any land disturbance on the site. Some states require a few days of lead time, so check with your permitting authority. Once you've submitted the application, you must satisfy the conditions of the permit.

#### Implement the Plan

Be prepared to implement the BMPs in your Plan before construction begins. Ensure that BMPs are properly maintained, and upgrade and repair them as necessary.

## Developing and Implementing a Plan

You must have a Plan that includes erosion and sediment control and pollution prevention BMPs. These Plans require

- Advance planning and training to ensure proper implementation of the BMPs
- Erosion and sediment control BMPs in place until the area is permanently stabilized
- Pollution prevention BMPs to keep the construction site "clean"
- Regular inspection of the construction site to ensure proper installation and maintenance of BMPs

Fortunately, the practices and measures that must be included in your Plan are already part of the standard operating procedures at many construction sites.

Six steps are associated with developing and implementing a stormwater Plan. There's a wealth of information available on developing pollution prevention plans. Please contact your permitting authority for help in finding additional guidance materials, or visit www.epa.gov/npdes/stormwater. A sample construction plan is available at www.epa.gov/npdes/pubs/sample_swppp.pdf.

### 1. *Site Evaluation and Design Development*

- **Collect site information**
- **Develop site plan design**
- **Prepare pollution prevention site map**

The first step in preparing a Plan is to define the characteristics of the site and the type of construction that will occur. This involves collecting site information, identifying natural features that should be protected, developing a site plan design, describing the nature of the construction activity, and preparing a pollution prevention site map.

### 2. *Assessment*

- **Measure the site area**
- **Determine the drainage areas**
- **Calculate the runoff coefficient**

The next step is assessing the impact the project will have on stormwater runoff. Determine the drainage areas and estimate the runoff amounts and velocities. For more information on calculatng the runoff coefficient, go to www.epa.gov/npdes/pubs/chap02_conguide.pdf, page 11.

### 3. *Control Selection and Plan Design*

- **Review and incorporate state or local requirements**
- **Select erosion and sediment controls**
- **Select other controls**
- **Select stormwater management controls**
- **Indicate the location of controls on the site map**
- **Prepare an inspection and maintenance plan**
- **Coordinate controls with construction activity**
- **Prepare sequence of major activities**

In the third step you'll actually document your procedures to prevent and control polluted stormwater runoff. You must delineate areas that will not be disturbed, including critical natural areas like streamside areas, floodplains, and trees. You must also identify the measures (or BMPs) you'll use to protect these areas.

Phasing your project to minimize the amount of exposed soil at any given time is a highly effective way to prevent erosion. Erosion control measures designed to prevent soil from being mobilized include diversions to route stormwater away from exposed soils and stabilization with vegetation, mulch, and geotextiles. Sedimentation control measures designed to remove sediment from stormwater or prevent it from leaving the site include silt fences, sediment traps, and diversions.

You'll need to select erosion and sediment controls—including stabilization measures for protecting disturbed areas and structural controls for diverting runoff and removing sediment—that are appropriate for your particular site. The appropriateness of the control measures will depend on several factors, but will be influenced most directly by the site characteristics. Some stabilization measures you might consider are temporary seeding, permanent seeding, and mulching. Structural control measures include earth dikes, silt fences, and sediment traps. No single BMP will meet all of the erosion and sedimentation control needs of a construction site. A combination of BMPs is necessary. For more information on the types of BMPs appropriate for your construction site, see the BMP fact sheet series available at www.epa.gov/npdes/menuofbmps.

#### Soil erosion control tips...

- Design the site to infiltrate stormwater into the ground and to keep it out of storm drains. Eliminate or minimize the use of stormwater collection and conveyance systems while maximizing the use of stormwater infiltration and bioretention techniques.
- Minimize the amount of exposed soil on site.
  - To the extent possible, plan the project in stages to minimize the amount of area that is bare and subject to erosion. The less soil exposed, the easier and cheaper it will be to control erosion.
  - Vegetate disturbed areas with permanent or temporary seeding immediately upon reaching final grade.
  - Vegetate or cover stockpiles that will not be used immediately.
- Reduce the velocity of stormwater both onto and away from the project area.
  - Interceptors, diversions, vegetated buffers, and check dams are a few of the BMPs that can be used to slow down stormwater as it travels across and away from the project site.
  - Diversion measures can also be used to direct flow away from exposed areas toward stable portions of the site.
  - Silt fences and other types of perimeter filters should never be used to reduce the velocity of runoff.
- Protect defined channels immediately with measures adequate to handle the storm flows expected.
  - Sod, geotextile, natural fiber, riprap, or other stabilization measures should be used to allow the channels to carry water without causing erosion. Use softer measures like geotextile or vegetation where possible to prevent downstream impacts.
- Keep sediment on site.
  - Place aggregate or stone at construction site vehicle exits to accommodate at least two tire revolutions of large construction vehicles. Much of the dirt on the tires will fall off before the vehicle gets to the street.
  - Regular street sweeping at the construction entrance will prevent dirt from entering storm drains. Do not hose paved areas.
  - Sediment traps and basins are temporary structures and should be used in conjunction with other measures to reduce the amount of erosion.
- Maintaining all BMPs is critical to ensure their effectiveness during the life of the project.
  - Regularly remove collected sediment from silt fences, berms, traps, and other BMPs.
  - Ensure that geotextiles and mulch remain in place until vegetation is well established.
  - Maintain fences that protect sensitive areas, silt fences, diversion structures, and other BMPs.

#### Other BMPs and Activities to Control Polluted Runoff

You'll need to select other controls to address potential pollutant sources on your site. Construction materials, debris, trash, fuel, paint, and stockpiles become pollution sources when it rains. Basic pollution prevention practices can significantly reduce the amount of pollution leaving construction sites. The following are some simple practices that should be included in the Plan and implemented on site:

- Keep potential sources of pollution out of the rain as practicable (e.g., inside a building, covered with plastic or tarps, or sealed tightly in a leak-proof container).
- Clearly identify a protected, lined area for concrete truck washouts. This area should be located away from streams, storm drain inlets, or ditches and should be cleaned out periodically.
- Park, refuel, and maintain vehicles and equipment in one area of the site to minimize the area exposed to possible spills and fuel storage. This area should be well away from streams, storm drain inlets, or ditches. Keep spill kits close by and clean up any spills or leaks immediately, including spills on pavement or earthen surfaces.
- Practice good housekeeping. Keep the construction site free of litter, construction debris, and leaking containers. Keep all waste in one area to minimize cleaning.
- Never hose down paved surfaces to clean dust, debris, or trash. This water could wash directly into storm drains or streams. Sweep up materials and dispose of them in the trash. Never bury trash or debris!
- Dispose of hazardous materials properly.

### 4. *Certification and Notification*

- **Certify the Plan**
- **Submit permit application or notice of intent**

Once the Plan has been developed, an authorized representative must sign it. Now is the time to submit the permit application or notice of intent. Your permit might require that the Plan be kept on site, so be sure to keep it available for the staff implementing the Plan.

***Erosion and sedimentation control practices are only as good as their installation and maintenance.***

### 5. *Implementing and Maintaining a Plan*

- **Implement controls**
- **Inspect and maintain controls**
- **Update/change the Plan**
- **Report releases of hazardous materials**

A Plan describes the practices and activities you'll use to prevent stormwater contamination and meet the NPDES permit requirements. Make sure that the Plan is implemented and that the Plan is updated as necessary to reflect changes on the site.

Erosion and sedimentation control practices are only as good as their installation and maintenance. Train the contractors that will install the BMPs and inspect immediately to ensure that the BMPs have been installed correctly.

Regularly inspect the BMPs (especially before and after rain events) and perform any necessary repairs or maintenance immediately. Many BMPs are designed to handle a limited amount of sediment. If not maintained, they'll become ineffective and a source of sediment pollution.

It's also important to keep records of BMP installation, implementation, and maintenance. Keep track of major grading activities that occur on the site, when construction activities cease (temporarily or permanently), and when a site is temporarily or permanently stabilized.

If construction plans change at any time, or if more appropriate BMPs are chosen for the site, update the Plan accordingly.

### 6. *Completing the Project: Final Stabilization and Termination of the Permit*

- **Final stabilization**
- **Notice of Termination**
- **Record retention**

Many states and EPA require a Notice of Termination (NOT) or other notification signifying that the construction activity is completed. An NOT is required when

- Final stabilization has been achieved on all portions of the site for which the permittee is responsible.
- Another operator has assumed control over all areas of the site that have not been finally stabilized. That operator would need to submit a new permit application to the permitting authority.
- For residential construction only, temporary stabilization of a lot has been completed prior to transference of ownership to the homeowner, with the homeowner being made aware of the need to perform final stabilization.

Permittees must keep a copy of their permit application and their Plan for at least 3 years following final stabilization. This period may be longer depending on state and local requirements.

#### Preconstruction Checklist

- A site description, including
  - Nature of the activity
  - Intended sequence of major construction activities
  - Total area of the site
  - Existing soil type and rainfall runoff data
  - A site map with:
    - Drainage patterns
    - Approximate slopes after major grading
    - Area of soil disturbance
    - Outline of areas which will not be disturbed
    - Location of major structural and nonstructural soil erosion controls
    - Areas where stabilization practices are expected to occur
    - Surface waters
    - Stormwater discharge locations
  - Name of the receiving water(s)
- A description of controls:
  - Erosion and sediment controls, including
    - Stabilization practices for all areas disturbed by construction
    - Structural practices for all drainage/discharge locations
  - Stormwater management controls, including
    - Measures used to control pollutants occurring in stormwater discharges after construction activities are complete
    - Velocity dissipation devices to provide nonerosive flow conditions from the discharge point along the length of any outfall channel
  - Other controls, including
    - Waste disposal practices that prevent discharge of solid materials
    - Measures to minimize offset tracking of sediments by construction vehicles
    - Measures to ensure compliance with state or local waste disposal, sanitary sewer, or septic system regulations
  - Description of the timing during the construction when measures will be implemented
- State or local requirements incorporated into the Plan
- Inspection and maintenance procedures for control measures identified in the Plan
- Contractor certification and Plan certification

#### Implementation Checklist

- Maintain records of construction activities, including
  - Dates when major grading activities occur
  - Dates when construction activities temporarily cease on the site or a portion of the site
  - Dates when construction activities permanently cease on the site or a portion of the site
  - Dates when stabilization measures are completed on the site
- Prepare inspection reports summarizing
  - Name of person conducting BMP inspections
  - Qualifications of person conducting BMP inspections
  - BMPs/areas inspected
  - Observed conditions
  - Necessary changes to the Plan
- Report releases of reportable quantities of oil or hazardous materials
  - Notify the National Response Center at 800-424-8802 immediately
  - Report releases to your permitting authority immediately, or as specified in your permit. You must also provide a written report within 14 days.
  - Modify the Plan to include
    - The date of release
    - Circumstances leading to the release
    - Steps taken to prevent reoccurrence of the release
- Modify Plan as necessary
  - Incorporate requests of the permitting authority to bring the Plan into compliance
  - Address changes in design, construction operation, or maintenance that affect the potential for discharge of pollutants

***An ounce of prevention is worth a pound of cure! It's far more efficient and cost-effective to prevent pollution than it is to try to correct problems later. Installing and maintaining simple BMPs and pollution prevention techniques on site can greatly reduce the potential for stormwater pollution and can also save you money!***

***Visit www.epa.gov/npdes/stormwater for more information.***

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THE YEAR OF CLEAN WATER
Celebration & Commitment

Renew Our Waters

Every choice counts.

# HOUSEHOLD HAZARDOUS WASTE

## Cleaning out the garage and keeping our waters clean

We all have the opportunity - and the responsibility - to dispose of waste materials properly. The rule of thumb is: If you wouldn't dump it in the river, don't let it touch parking lots, soil, or any other place where it can be washed into a stream or storm drain. Post this sheet in your garage storage area as a reminder. This will help us change one habit at a time, so we have good fishing, swimming, paddling and waterskiing when the work is done.

### HARMFUL SUBSTANCES

Certain household chemicals, when not used up properly, become household hazardous waste. These products can contain the same chemicals as strictly regulated industrial wastes. These products include: cleaning products and wash water, food oils and grease, automotive oil, grease and waste fluids, paint, petroleum-based solvents, rodent baits, batteries, herbicides, pesticides, concrete wash water and sidewalk salt.

**If you wouldn't dump it in the river, don't let it touch parking lots, soil or any other place where it can be washed into a stream or storm drain.**

### HANDLE WITH CARE

To avoid the potential risks associated with household wastes, always monitor the use, storage and disposal of products with potentially hazardous substances.

### PROPER DISPOSAL

All of the counties in Northeast Wisconsin have Household Hazardous Waste drop off programs or collection days. Contact your local environmental, health or solid waste agency for instructions on proper use and disposal.

### USING LESS

The quantity of waste from a single household may be small, but that quantity adds up fast considering the number of households in Northeast Wisconsin. Consider reducing your purchase of products that contain hazardous ingredients.

Stormwater is rain or snowmelt and water from things people do, like overwatering the lawn. As water makes its way to the storm drain it picks up pollutants like oil from car leaks and improperly disposed of waste. When we choose products carefully and dispose of products properly, we can reduce the amount of pollution that enters our local waterways through runoff.

Untreated runoff is the biggest threat to our nation's water quality, according to the U.S. Environmental Protection Agency. Let's make the small, important changes that will reduce that threat and improve water quality and our lives!

**Realize**

What touches the ground enters the water

**Northeast Wisconsin Stormwater Consortium**
P.O. Box 1861 Appleton, WI 54912 | 920.915.5767

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# FISH DON'T SWIM IN CHLORINE

## Following a few simple steps will prepare your pool water for entering local waterways.

Taking the time to follow the proper procedures when discharging water from your pool or spa will help keep our local waters a healthy place for fish and other aquatic life.

### DECHLORINATE THE WATER

Water from swimming pools and spas must be dechlorinated prior to discharging water. Let the water in the pool or spa sit for at least one week to reduce the chlorine or bromine level until it is undetectable and water temperature is at air temperature. Measure the pH. It should fall within a range of 6.5 - 8.5 prior to discharge.

### DISCHARGE WATER TO GRASS OR LANDSCAPING

Discharging pool and spa water onto grass or landscaping will allow water to soak into the earth, where the water will be naturally cleansed prior to entering local waterways.

If irrigation on site is not possible, water may be discharged off your property - provided it is directed through a grassed surface prior to entering a curbline gutter or a paved street.

Do not fertilize prior to discharging pool water.

**Discharging water onto grass or landscaping will allow water to soak into the earth.**

### MONITOR THE DISCHARGE

Do not let water discharge onto your neighbor's property. Monitor water as it is discharging to ensure it does not cause erosion or flooding. Discharge the water in a manner that will prevent nuisance conditions (such as creation of odors and fly and mosquito breeding conditions) due to ponding of water for a prolonged period.

### PROTECT LOCAL WATERWAYS

If a pool or spa has been acid washed, the water may not be discharged off the pool/spa owner's property. Water from back flushing pool filters should only be discharged to the sanitary sewer (down a sink or toilet) or on-site septic tank system where it will be treated prior to entering local waters.

Remember it is illegal in all communities to discharge pollutants, including chlorinated pool water, into a storm drain. As a pool or spa owner, you are responsible for following your municipality's ordinance for pool and spa discharge. Contact your municipality for regulations.

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Stormwater is rain or snowmelt and water from things people do, like overwatering the lawn or discharging pool water into the street drain. We can choose products carefully and shape our lawns and pavement so water sinks in. When we do, runoff is reduced, pollutants filter out and streams and groundwater are protected.

Untreated runoff is the biggest threat to our nation's water quality, according to the U.S. Environmental Protection Agency. Let's make the small, important changes that will reduce that threat and improve water quality and our lives!

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# POWER WASHING

## To keep our waters clean keep your dirty water out.

Wash water from power washing activities may contain a large amount of oil, grease, chemicals, dirt and detergents. Disposing of these materials into storm drains causes serious ecological problems and is PROHIBITED by law. You could be given a citation or fined for discharging pollutants to the storm drain system.

### TRY IT DRY

Instead of pressure washing, use dry methods such as mops, brooms, rags or wire brushes to clean pavement, buildings and equipment as much as possible.

Before you start, set up sandbags or other barriers to direct wash water onto grass or gravel.

### PREPARING FOR POWER WASHING

Before you start, set up sandbags or other barriers to direct wash water onto grassy or gravel areas where the water will soak into the ground instead of run off into the road.

### JUST ENOUGH FOR THE JOB

Minimize water by using high pressure, low volume nozzles. Use the minimal amount and least toxic detergents and degreasers you will need to get the job done. Use a mop or rags to clean heavily soiled areas before power washing.

### UNDERSTANDING "BIODEGRADABLE"

"Biodegradable" is a popular marketing term that can be misleading. Because a product is labeled as biodegradable does not mean that it is non-toxic. Some products are more toxic than others, but NONE are harmless to aquatic life. Soapy water entering the storm drain system will impact the aquatic environment in our local lakes, streams and rivers.

### WASHING YOUR VEHICLE

Wash vehicles and equipment on grassy or gravel areas so that the wash water can seep into the ground. If the ground is very dry, wet it first so the wash water soaks in and does not run off into the storm drain.

Stormwater is rain or snowmelt and water from things people do, like overwatering the lawn or letting fertilizer fall into the street drain. We can choose products carefully and shape our lawns and pavement so water sinks in. When we do, runoff is reduced, pollutants filter out and streams and groundwater are protected.

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# CARPET CLEANING

## To keep our waters clean, keep your dirty water out.

Nothing feels better than walking across clean carpet, except maybe wading through clean water on a warm summer day. Unfortunately, far too often dirty wash water from carpet cleaning is dumped down the driveway and finds its way through the storm drain system to our local waters. Disposing of these materials into storm drains causes serious ecological problems and is PROHIBITED by law. By following the tips on this sheet, you can clean your home and keep our local waters clean too.

### DISPOSE OF WASTEWATER PROPERLY

Wash water from carpet, drapery or upholstery cleaning must be discharged to a sink, toilet or other drain connected to the sanitary sewer system. Never discharge to a street, gutter, parking lot, ditch or storm drain. This applies even when you use cleaning products labeled "nontoxic" or "biodegradable." Using biodegradable soap does not lessen its immediate environmental impact - it simply means that the soap will degrade in time.

**Using biodegradable soap does not lessen its immediate environmental impact - it simply means that the soap will degrade in time.**

### FILTER WASTEWATER

Before dumping your dirty water into the sanitary sewer, filter the water to make sure that any fiber or debris does not go down the drain. Debris in the wash water can clog the pipes. Dispose of the filtered material in the garbage, provided that the carpet was not contaminated with hazardous materials.

### HIRING A PROFESSIONAL CLEANER

Check with the carpet cleaner you hire to ensure the used wash water is emptied into a utility sink or other indoor sanitary sewer connection. Just like you, professional cleaners should never dispose of dirty water in a street, gutter, parking lot, ditch or storm drain.

If you contract with a carpet cleaner regularly, arrange an appropriate location for the contractor to discharge wash water such as a utility sink, toilet or sewer outlet.

Stormwater is rain or snowmelt and water from things people do, like washing the car or watering the lawn. As water makes its way to the storm drain it picks up pollutants like oil from car leaks and bacteria from pet waste. When we choose products carefully and dispose of products properly, we can greatly reduce the amount of pollution that enters our local waters through runoff.

Untreated runoff is the biggest threat to our nation's water quality, according to the U.S. Environmental Protection Agency. Let's make the small, important changes that will reduce that threat and improve water quality and our lives!

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# Connecting the Drops

## Realize what touches the ground can enter our waters

## Sweep up Grass Clippings

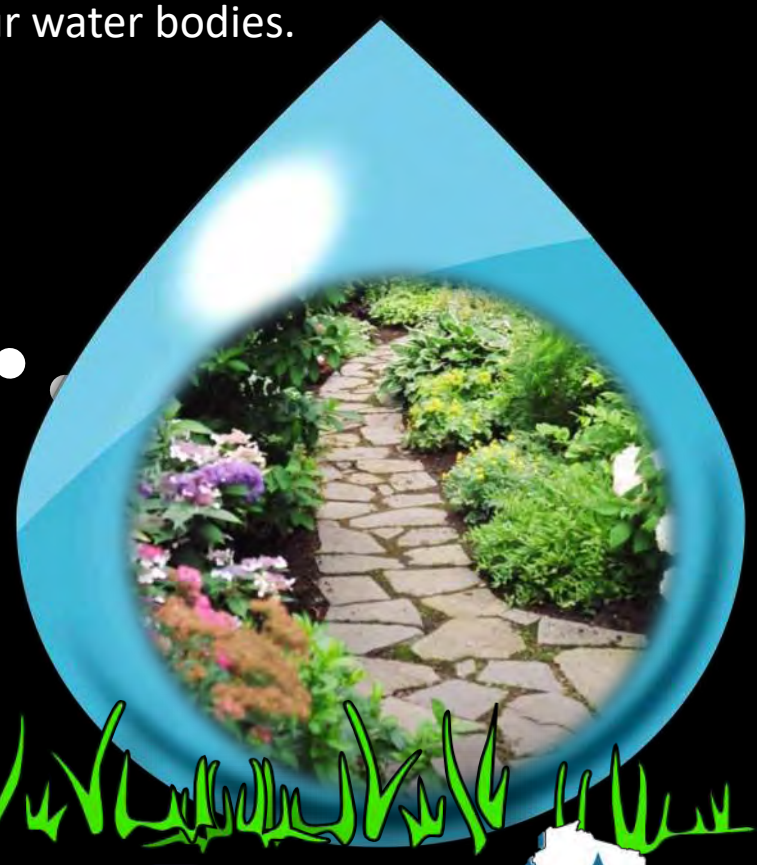
Keep lawn waste out of storm drains to prevent green algae blooms and improve water clarity. Grass clippings can be easily swept back onto the lawn.

## Clean up After your Pet

Pet waste carries bacteria that makes people sick and causes beach closings. Remember to scoop the poop.

## Wash Vehicles on Grass

Washing vehicles in a grassy area or at a car wash facility prevents soapy water and chemicals from our cars from entering our water bodies.



## Let the Water Soak in

Planning for minimal hard surface on your property makes good sense. Focus on natural plantings to slow water so that it filters into the ground rather than runs off.

Fox-Wolf Watershed Alliance

LIKE US ON facebook

For more information, visit:
www.RenewOurWaters.org

FOLLOW US ON Instagram
@Fox_Wolf_Watershed_Alliance

NEWSC

# APPENDIX D

**Public Involvement & Participation**

# Municipal Stormwater Permit

2021 Annual Report Summary to Wisconsin DNR

McMAHON ENGINEERS ARCHITECTS

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# Federal Clean Water Act

US Environmental Protection Agency requires each state to identify water bodies that are not 'fishable or swimmable'

Each state also needs to identify the pollutants causing the water body impairment

McMAHON ENGINEERS ARCHITECTS

2

# Pollutants Causing Impairment

Sediment

Phosphorus

McMAHON ENGINEERS ARCHITECTS

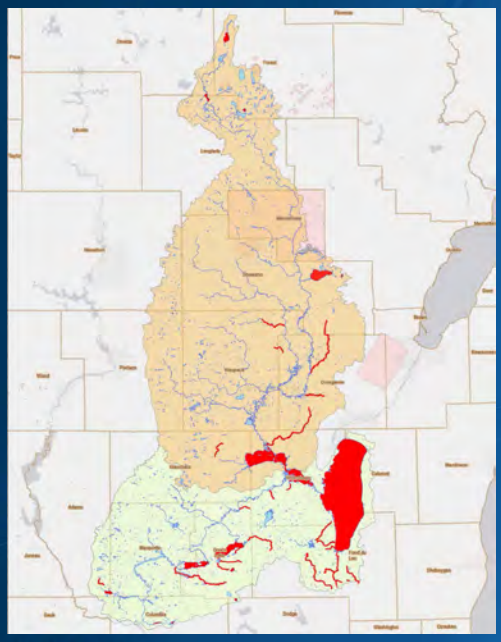
3


# Total Maximum Daily Load (TMDL)

Lower Fox River Basin TMDL for phosphorus and sediment pollutants was approved by US Environmental Protection Agency on May 18, 2012

McMAHON ENGINEERS ARCHITECTS

4



# Total Maximum Daily Load (TMDL)

Upper Fox & Wolf River Basins TMDL for phosphorus and sediment pollutants was approved by US Environmental Protection Agency on February 27, 2020

McMAHON ENGINEERS ARCHITECTS

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# Municipal Stormwater Permit

- Town received its initial Municipal Stormwater Permit from Wisconsin DNR in late 2006
- Wisconsin DNR renewed the Town's Municipal Stormwater Permit in 2019
- TMDL phosphorus and sediment allocations implemented thru Municipal Stormwater Permit

McMAHON ENGINEERS ARCHITECTS

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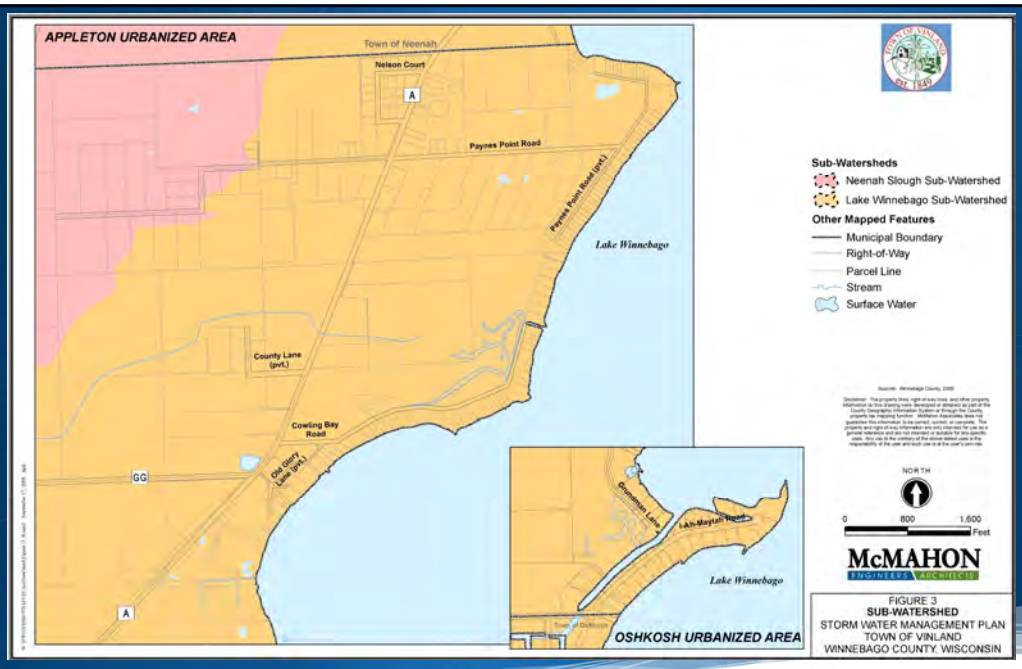
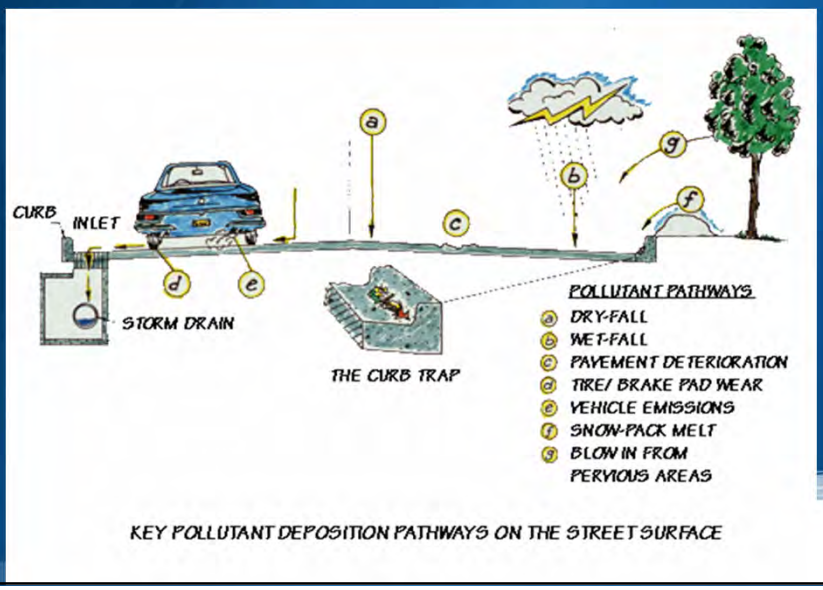



7

# Stormwater Pollutant Pathways




KEY POLLUTANT DEPOSITION PATHWAYS ON THE STREET SURFACE

8

# Permit Requirements

- Public Education
- Public Involvement
- Illicit Discharge Detection & Elimination
- Construction Site Pollutant Control
- Post-Construction Stormwater Management
- Municipal Pollution Prevention
- Stormwater Quality Management

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# Public Education

**Required: 4 Topics, 4 Delivery Mechanisms (One Active)**

| Measurable Goals | 2020 | 2021 |
|---|---|---|
| 1. Passive: Town Website (# hits) | | |
| 2. Passive: Brochures (# distributed / taken) | | |
| 3. Passive: Newsletter (# distributed each issue) | | |
| 4. Passive: Posters or Signs (# of posters / signs) | | |
| 5. Passive: Radio or TV (# of ads) | | |
| 6. Passive: Social Media (# of posts) | | |
| 7. Active: School Presentations / Exhibiting (# events, # attendees) | | |
| 8. Active: Training Events (# events, # participants) | | |
| 9. Active: Town Meetings / Bus Tours (# events, # attendees) | | |
| 10. Active: Volunteer Events (# events, # participants) | | |

10

# Public Involvement

| Measurable Goals | 2020 | 2021 |
|---|---|---|
| 1. Public/Landowner Meetings (# meetings when stormwater was discussed). | | |
| 2. Public Meetings (# meetings when stormwater ordinance was discussed). | | |
| 3. Public Meetings (# attendees for MS4 Annual Report presentation). | | |
| 4. Volunteer Events (# participants). | | |

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# Illicit Discharges

| Measurable Goals | 2020 | 2021 |
|---|---|---|
| 1. Number of total MS4 outfalls. | | |
| 2. Number of MS4 outfalls evaluated during routine ongoing field screening. | | |
| 3. From routine field screening, number of confirmed illicit discharges. | | |
| 4. Number of illicit discharge complaints received. | | |
| 5. From complaints received, number of confirmed illicit discharges. | | |
| 6. Number of identified illicit discharges eliminated during reporting year. | | |
| 7. Number of verbal Warning Notices issued. | | |
| 8. Number of written Warning Notices issued. | | |
| 9. Number of Notices of Violation issued. | | |
| 10. Number of Civil Penalties / Citations issued. | | |

12

# Construction Sites

| Measurable Goals | 2020 | 2021 |
|---|---|---|
| 1. Number of total active construction sites (> 1 acre) during reporting year. | | |
| 2. Number of constructions sites (> 1 acre) issued a permit. | | |
| 3. Number of construction site inspections performed by Town rep. | | |
| 4. Number of sites with no enforcement authority. | | |
| 5. Number of verbal Warning Notices issued. | | |
| 6. Number of written Warning Notices issued. | | |
| 7. Number of Notices of Violation issued. | | |
| 8. Number of Stop Work Orders issued. | | |
| 9. Number of Civil Penalties / Citations issued. | | |
| 10. Number of Forfeitures of Deposit (cash escrow, bond, letter of credit, etc.). | | |

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# Post-Construction Sites

| Measurable Goals | 2020 | 2021 |
|---|---|---|
| 1. Number of sites that received approval for a new structural stormwater facility. | | |
| 2. Number of privately owned stormwater facilities inspected. | | |
| 3. Number of sites with no enforcement authority. | | |
| 4. Number of verbal Warning Notices issued. | | |
| 5. Number of written Warning Notices issued. | | |
| 6. Number of Notices of Violation issued. | | |
| 7. Number of Civil Penalties / Citations issued. | | |
| 8. Number of Forfeitures of Deposit (cash escrow, bond, letter of credit, etc.). | | |
| 9. Number of sites with completed stormwater facility maintenance. | | |
| 10. Number of sites that Town performed maintenance & billed landowner. | | |

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# Pollution Prevention

| Measurable Goals | 2020 | 2021 |
|---|---|---|
| 1. Number of Town operated structural stormwater facilities. | | |
| 2. Number of new Town operated stormwater facilities installed. | | |
| 3. Number of Town operated stormwater facilities inspected. | | |
| 4. Of Town facilities inspected, number requiring maintenance. | | |
| 5. Number of Town properties required to have a SWPPP. | | |
| 6. Number of inspections of Town properties with a SWPPP. | | |
| 7. Frequency of street sweeping completed (March 29 to November 25). | | |
| 8. Tons of street sweeping waste collected. | | |
| 9. Number of catch basin sumps cleaned (March 29 to November 25). | | |
| 10. Tons of catch basin waste collected. | | |

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# Pollution Prevention

| Measurable Goals | 2020 | 2021 |
|---|---|---|
| 11. If collection is offered, frequency of curbside leaf collection. | | |
| 12. Number of lane-miles for snow and ice control. | | |
| 13. Tons of salt applied (October to March). | | |
| 14. Tons of sand applied (October to March). | | |
| 15. Tons of salt / sand mix applied (October to March). | | |
| 16. Gallons of brine applied (October to March). | | |
| 17. Gallons of chem-melt applied (October to March). | | |
| 18. Gallons of beet juice applied (October to March). | | |
| 19. Gallons of pre-wetting compound applied (October to March). | | |
| 20. Number of Town employees trained during reporting year. | | |

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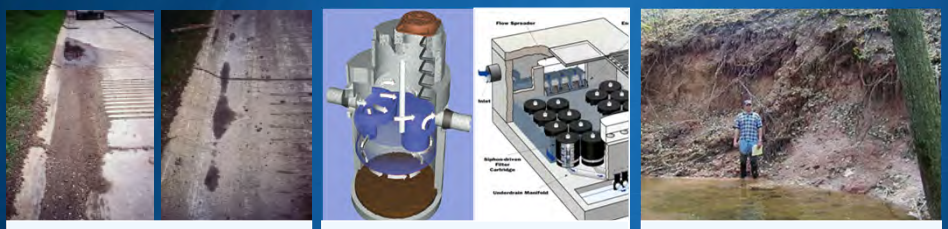
# Best Management Practices



Street Sweeping | Proprietary Devices | Stream Stabilization

Grass Swales / Filters | Biofilters / Rain Gardens | Wetlands / Wet Ponds

McMAHON ENGINEERS ARCHITECTS

TOWN OF VINLAND

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Thank You for inviting us to present today!

# Questions?

THE McMAHON Way
• FOR OVER 100 YEARS •
Values. Culture. Relationships

18

# APPENDIX E

**Illicit Discharge Detection & Elimination**

6085 County Road T
Oshkosh, WI 54904
Phone: 920.235.6953

# INFORMATION SUBMITTED BY THE PUBLIC

| **Complaint Submitted By:** | | |
|---|---|---|
| Name: ☐ Anonymous | | Date: |
| Address: | | |
| Telephone: | E-Mail: | |
| Should we contact you? ☐ Yes ☐ No | | |
| **Location of Complaint:** | | |
| Site Name (Project): | | Construction Site ID No: |
| Address / Location: | | |
| Landowner Name: | | |

**Description of Complaint:** (check all that apply)

| | |
|---|---|
| ☐ Automobiles (fluid leak, car washing) | ☐ Storm Water Management (flooding, pond maintenance) |
| ☐ Pet Waste | ☐ Illicit Discharge (spill / hazardous material) |
| ☐ Household Hazardous Waste (dumping) | ☐ Illicit Discharge (improper waste disposal) |
| ☐ Household Practices (garbage, recycling) | ☐ Illicit Discharge (dry weather flow / discharge) |
| ☐ Fertilizers & Pesticides | ☐ Illicit Discharge (illegal plumbing connection) |
| ☐ Leaves & Grass Clippings | ☐ Illicit Discharge (failing lateral / septic system) |
| ☐ Stream & Shoreline Management (erosion) | ☐ Street Sweeping / Catch Basin Cleaning |
| ☐ Residential (downspouts, sump pump) | ☐ Municipal Road Salt & Other Deicers |
| ☐ Construction Site Erosion Control | ☐ Other: _____ |

Describe complaint:

**Description of Follow-Up Actions:**

Describe follow-up actions:

# FEE SCHEDULE

For The

# ILLICIT DISCHARGE DETECTION & ELIMINATION PROGRAM
# TOWN OF VINLAND, WISCONSIN

**Forfeitures / Fines:**

Forfeitures / fines for the illicit discharge detection and elimination program vary from a minimum of **$25** to a maximum of **$500** for each day of non-compliance and each occurance. Issuance of a forfeiture / fine will depend on if the violator is non-responsive or if the violation is blatant, intentional, repetitive or severe. The forfeitures / fines are as follows:

| Notice of Violation | Home Owner | Other |
|---|---|---|
| Failure to properly dispose of a pollutant or illicit discharge | **$50** | **$500** |
| Failure to take reasonable actions to eliminate an illicit discharge | **$50** | **$500** |
| Failure to take reasonable actions to locate an undocumented drain | **$30** | **$300** |
| Failure to implement WPDES Industrial Discharge Permit | **n/a** | **$500** |
| Failure to allow reasonable access for inspecting or sampling | **$50** | **$500** |
| Failure to install, maintain or calibrate monitoring equipment | **n/a** | **$500** |
| Failure to install or maintain non-structural and structural BMPs | **n/a** | **$500** |
| Failure to notify Village of a spill or release of hazardous substance | **$25** | **$250** |
| Failure to take reasonable actions to prevent or contain a spill or release of a hazardous substance | **$50** | **$500** |

Mandatory training workshops and/or community service projects (e.g. stream cleanup, highway cleanup, etc.) could also be used to encourage behavior change if a violation is blatant, intentional, non-responsive, repetitive, or severe.

# Chapter 351

# STORMWATER MANAGEMENT

**GENERAL REFERENCES**

**Subdivision of land — See Ch. 361.**

ARTICLE I
**Illicit Discharge Control**
**[Adopted 7-7-2009 (Title 15, Ch. 2, of the 2004 Code)]**

## § 351-1. Surface water drainage regulations; administration.

A. Surface water drainage matters in the Town of Vinland shall be administered by the Winnebago County Land and Water Conservation Department (herein referred to as "LWCD"). The LWCD reviews and comments on said drainage plans.

B. The LWCD or an agent thereof will in writing certify that each drainage plan is in compliance before the Town of Vinland Building Inspector will issue an occupancy permit.

C. This section applies to residential and agricultural development in the Town of Vinland.

D. Commercial and industrial applies to Winnebago County Planning and Zoning Department.

## § 351-2. Illicit discharge control.

A. Purpose. The purpose of this article is to provide for health, safety and general welfare of the citizens of the Town of Vinland and protect waters of the state through the regulation of illicit discharges to the municipal separate storm sewer system as required by federal and state law. This article establishes methods of controlling the discharge of pollutants into the municipal separate storm sewer system owned or operated by the Town of Vinland in order to comply with the requirements of the Clean Water Act, § 281.33, Wis. Stats., and Wisconsin Pollutant Discharge Elimination System Municipal Stormwater Discharge Permit Program under Ch. NR 216, Wis. Adm. Code. The objectives of this article are:

   (1) To regulate the contribution of pollutants to the municipal separate storm sewer system associated with discharges from any user of the municipal separate storm sewer system.

   (2) To prohibit illicit connections and discharges to the municipal separate storm sewer system.

   (3) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this article.

B. Definitions. For the purpose of this article, the following definitions are applicable:

   AUTHORIZED AGENCY — Employees or designees of the director or directors of the municipal agency or agencies of the Town of Vinland designated to administer or enforce this article.

   ILLICIT CONNECTION — Any drain or conveyance, whether on the surface or subsurface, which allows the discharge of sanitary waste to the municipal separate storm sewer system and any connections to the municipal separate storm sewer system from indoor drains and sinks.

ILLICIT DISCHARGE — Any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges authorized by a WPDES permit or other discharges not requiring a WPDES permit.

MUNICIPAL SEPARATE STORM SEWER SYSTEM or MS4 — A conveyance or system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains, which meets the following criteria:

(1) Owned or operated by the Town of Vinland.

(2) Designed or used for collecting or conveying stormwater.

(3) Which is not a combined sewer conveying both sanitary wastewater and stormwater.

(4) Which is not part of publicly owned wastewater treatment works that provides secondary or more stringent treatment.

NONSTORMWATER DISCHARGE — Any discharge to the municipal separate stormwater system that is not composed entirely of stormwater.

STORMWATER — Surface runoff and drainage of rainfall and snow or ice melt.

WATERS OF THE STATE — Those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin; all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within the state or under its jurisdiction, except those waters which are entirely confined and retained completely upon the property of a person.

## § 351-3. Applicability.

This article shall apply to all discharges to the MS4 and to all activities that can reasonably be expected to result in a discharge to the MS4.

## § 351-4. Responsibility for administration.

The Town of Vinland shall administer, implement and enforce the provisions of this article. Any powers granted or duties imposed by this article upon the authorized agency may be delegated by the Town Board to persons or entities acting in the beneficial interest of or in the employ of the Town.

## § 351-5. Ultimate responsibility.

The standards set forth herein and promulgated to this article are minimum standards. Therefore, this article does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution nor unauthorized discharges.

## § 351-6. Discharge prohibitions.

A. Prohibition of illicit discharges. No person shall discharge or cause to be discharged into the MS4 or waters of the state any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation

of applicable water quality standards, other than stormwater. The commencement, conduct or continuance of any illicit discharge to the MS4 is prohibited. The following nonstormwater discharges or flows are generally not considered illicit discharges if done so in a nonpolluting manner: waterline flushing, landscape irrigation, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air-conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool water, street wash water and firefighting.

B. Prohibition of illicit connections.

(1) The construction, use maintenance or continued existence of illicit connections to the MS4 is prohibited.

(2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(3) A person is considered to be in violation of this article if the person connects a line conveying sanitary waste to the MS4 or allows such a connection to continue.

## § 351-7. Monitoring of discharges; access to facilities.

The authorized agency shall be permitted to enter and inspect facilities subject to regulation under this article as often as may be necessary to determine compliance with this article. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized agency.

## § 351-8. Notification of spills.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illicit discharges or pollutants discharging into stormwater, the MS4 or a water of the state, said person shall take all necessary steps to ensure the discovery, containment and cleanup of such release. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of nonhazardous materials, said person shall notify the authorized agency in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the authorized agency within three business days of the phone notice.

## § 351-9. Violations and penalties.

A. Violations. It shall be unlawful for any person to violate any provision of this article. Each and every day during which the violation continues shall constitute a separate offense. The Town may institute appropriate action or proceedings to

enjoin violations of this article.

B. Penalties. Any person who fails to comply with the provisions of this article shall, upon conviction thereof, be punishable as set forth in § 1-4, General penalty, of the Code, including payment of the Town's reasonable and actual attorney's fees and disbursements incurred in the prosecution of such violations.[1]

1. **Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. II).**

# Technical Reference Guide

## Illicit Discharge Detection & Elimination

Prepared for the
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

AUGUST 18, 2021

McMAHON ASSOCIATES, INC.
1445 McMAHON DRIVE NEENAH, WI 54956 Mailing: PO BOX 1025 NEENAH, WI 54957-1025 PH 920.751.4200 MCMGRP.COM
McM. No. N0003-09-21-00293 /NAV:PTK:car

# Technical Reference Guide

## Illicit Discharge Detection & Elimination

PREPARED FOR THE
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

AUGUST 18, 2021
McM. No. N0003-09-21-00293

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## Illicit Discharge Detection & Elimination

PREPARED FOR THE
TOWN OF VINLAND
WINNEBAGO COUNTY, WISCONSIN

AUGUST 18, 2021
McM. No. N0003-09-21-00293

## 1. INTRODUCTION

The Town of Vinland has developed an illicit discharge detection and elimination program to remove illicit connections and discharges from the municipal separate storm sewer system (MS4). A thorough awareness of the MS4 system is important to the success of an illicit discharge program. Awareness allows the MS4 operator to locate problem areas, find the source, and eliminate the discharge.

Potential sources of illicit discharge include illegal business discharges, boat and marina discharges, overflows from sanitary sewer systems, illegal plumbing connections, illegal dumping of waste materials, and spills associated with roadway accidents and industrial activity. Illicit discharges can contribute high levels of pollutants, toxins, oil, grease, solvents, nutrients, viruses, and bacteria to receiving waterbodies. Pollutant levels from illicit discharges are concentrated and may be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

Discharges or flows that are NOT considered illicit discharges include water line flushing, landscape irrigation, diverted stream flows, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, firefighting, and discharges authorized under a WPDES permit unless identified by the Town as a significant source of pollutants to waters of the state.

The policies and procedures described herein have been developed to assist with implementation of the illicit discharge detection and elimination program. The policies and procedures include the following major components:

- On-Going Field Screening
- Routine Inspections
- Responding to Illicit Discharges
- Enforcement Actions
- Information Submitted by the Public

## 2. ON-GOING OUTFALL FIELD SCREENING

This section describes policies and procedures for conducting ongoing field screening of outfalls during dry weather periods. Table E-1 provides a basic overview of the field screening components. The Town Board is responsible for coordinating and performing the ongoing field screening. The Town Board may rely on the Town's Contracted Consulting Engineer to perform the on-going field screening on an as-needed basis.

The Town's WPDES Permit requires ongoing field screening is to be performed at 100% of major outfalls at least once during the permit term. In addition, the Town's WPDES Permit requires annual on-going field screening of minor outfalls is to be performed during the permit term. The Town plans to perform on-going field screening of outfalls as follows:

- Each major outfall is to be screened at least once every 5 years. A major outfall designated as potential, suspect, or obvious for illicit discharge within the prior 5 years is considered a "priority" major outfall. The Town plans to conduct field screening once a year for "priority" major outfalls. Major outfalls not designated as potential, suspect, or obvious for illicit discharge within the prior 5 years will be screened once every 5 years.

- Each minor outfall is to be screened once every 5 years. A minor outfall designated as potential, suspect, or obvious for illicit discharge within the prior 3 years is considered a "priority" minor outfall. The Town plans to conduct field screening once a year for "priority" minor outfalls. Minor outfalls not designated as potential, suspect, or obvious for illicit discharge within the prior 3 years will be screened once every 5 years.

Ongoing field screening is performed at outfalls identified on the Town's MS4 map and within the Town's developed urban area jurisdiction. The field screening crew should wait at least 48-hours following a rainfall event, to minimize the chance of runoff affecting field screening observations. The field crew may need to wait more than 48-hours if a detention pond is located upslope of an outfall. Some wet detention ponds will discharge runoff for 72 to 120-hours after a rainfall event. The best time of year for conducting field screening of outfalls is during dry seasons, when groundwater levels are low. Dry periods typically occur in June, July, August, September, and October, but dense vegetation will be present during these months. Dense vegetation can make finding outfalls difficult, so it may be preferred, though not required, that certain outfalls be field

screened during 'leaf off' conditions. The most likely months that will meet these criteria are October, November, December, January, and February.

Basic equipment and supplies needed for the ongoing field screening are summarized in Table E-2. Necessary equipment and supplies include Outfall Field Screening Worksheets (electronic or hard copy), GPS unit, camera, stopwatch, tape measure, waders, and a copy of the MS4 map (electronic or hard copy). Field crews should also be equipped with basic safety equipment, including cellular phones, surgical gloves, and first aid kits. For safety reasons, the field crew should include two people. The field crew should have a basic understanding of illicit discharges and of these policies and procedures.

The field crew should review the MS4 map prior to conducting the outfall field screening. The MS4 map should identify outfalls, storm sewer and drainage system connectivity and WPDES permits. The WPDES permits identify those sites with permitted dry weather discharges and dewatering operations. Having an awareness of these dry weather discharges will be helpful during the field screening process. A plan for systematically screening the outfalls should be developed before beginning the screening process.

Typical outfall types that will be encountered include storm sewers, culverts and drainage ditches located along rivers, streams, lakes, and wetlands. Field screening points shall, where possible, be located downslope of any source of suspected illicit activity. Field screening points shall be located, where practicable, at the farthest manhole or other accessible location downslope in the system. Safety of personnel, accessibility of the location, and screening effectiveness shall be considered in making these determinations.

Outfall field screening activities are to be documented. An Outfall Field Screening Worksheet should be completed for each screened outfall. Refer to Figure E-1 for a sample hard copy worksheet. Paper copies of the worksheet can be used during field screening. An electronic version of this worksheet is preferred for ease of recordkeeping and compiling field data. The screening worksheet includes the following major sections:

Section 1 - Background Data

The first section of the worksheet is used to record basic data about the field screening, including date, time, field crew members, GPS coordinates, outfall ID, and current and past weather conditions. In addition to recording basic data, the field crew should also photograph and physically mark the outfall with an ID number. The photograph number or identifier should be recorded. GPS coordinates help field crews confirm outfall locations during future field screenings.

Section 2 - Outfall Description

This section is used to document basic characteristics of the outfall, including type, material, dimensions and whether there is flow present. If no flow is observed at the outfall, the crew can

skip Sections 3 and 4 of the worksheet. If flow is observed, Sections 3 and 4 of the worksheet are used to characterize the flow.

Section 3 – Quantitative Characteristics for Flowing Outfalls

This section is used to record direct measurements of flowing outfalls. Commercially available probes and test strips can be used for measurement of temperature, pH, ammonia, and other parameters. When probes and test strips are used, measurements should be taken from a sample bottle that contains captured flow from the outfall. For some parameters, it may be necessary to send samples to a laboratory for analysis. All samples should be clearly labeled with the date, outfall ID, sample number, sample location, and Town name. As indicated in Table E-6, the following indicator parameters MUST be documented as part of the field analysis and sampling, in accordance with the Town's WPDES permit:

- Flow rate, pH, total chlorine, total copper, total phenol, and detergents; or
- Flow rate, detergent, ammonia, potassium, and fluoride.

Flow rate can be measured using one of two suggested methods. The first method records the time it takes to fill a container of known volume (i.e., 1-liter sample bottle). The second method measures velocity of flow and multiplies it by the estimated cross-sectional area of flow. The second method is preferred for large diameter pipes where containers are too small to effectively capture the flow.

To use the second method for measuring flow rate, the field crew measures and marks a fixed flow length, drops a lightweight item (i.e., leaf, ping pong ball, etc.) into the discharge, and records the time it takes the item to travel across the fixed length of flow. The velocity and flow rate are calculated as:

- Velocity (ft/sec) = Length of Flow (ft) / Time of Travel (sec)
- Flow Rate (cf/sec) = Cross Sectional Area (sf) x Velocity (ft/sec)

Section 4 – Physical Indicators for Flowing Outfalls

In this section, the field crew records sensory indicators associated with a flowing outfall. Sensory indicators are detected by smell or sight and do not require measurement equipment. The following sensory indicators MUST be documented, in accordance with the Town's WPDES permit:

- Odor, color, turbidity, floatables (oil sheen, surface scum, suds), and any other relevant cold-weather indicators regarding the potential presence of illicit discharges or dumping.

The observer uses the worksheet to indicate whether a sensory indicator is present, and if so, ranks the severity on a scale. Severity rankings for the five sensory indicators are summarized in Table E-3. **Odor** should be monitored directly from the outfall by the field crew. The crew should reach a consensus on whether odor is detected and the severity, since smell is a very subjective indicator.

**Color and turbidity** are best measured by collecting a sample in a clear bottle and holding it up to the light. A visual assessment of the discharge color and its intensity can often help identify industrial discharges. Turbidity, which is a measure of the cloudiness of the water, is also estimated visually. Color and turbidity are not the same indicator. Color is the tint or intensity of the color observed, while turbidity is a measure of how easily light can penetrate through the sample.

The presence of **floatables** (oil sheen, surface scum, suds) is determined visually.

Ice can be used as a **cold-weather indicator** of illicit discharge when it forms in pipes, ditches and streams during the winter months, because most discharges are warm and can cause melting patterns at the outfall. Significant ice melting at an outfall or within a wet pond may indicate warm water from sewage or an industrial discharge. Groundwater or sump pump discharges may be warm enough to cause melting, so other indicators should be used in concert with ice melting observations. Other indicators to check for are discolored ice at the outfall and the formation of "rime ice", which forms when steam freezes. This crystalline formation is a good indicator of sewage or other hot discharges that would cause steam to form.

Section 5 – Physical Indicators for Both Flowing & Non-Flowing Outfalls

The purpose of this section is to document physical indicators found at both flowing and non-flowing outfalls that may reveal the impact of a past discharge. Physical indicators include outfall damage, outfall deposits or stains, abnormal vegetation growth, poor pool quality, and benthic (aquatic bottom dwelling organism) growth on pipe surfaces. These conditions can indicate that an intermittent or transitory discharge has occurred in the past, even though the pipe is not currently flowing.

Section 6 – Overall Outfall Designation

This section allows the field crew to designate the illicit discharge severity of the outfall based on the number and severity of discharge indicators identified in the previous sections of the worksheet. Using the descriptions provided in Table E-4, the illicit discharge is designated as unlikely, potential, suspect, or obvious.

Section 7 – Data Collection

In Section 7, the field crew records whether samples were collected for further analysis in a laboratory and whether the sample was taken from a pool downstream from the outfall or directly from the outfall. All samples should be clearly labeled with the date, outfall ID, sample number, sample location, and Town name. Indicate whether an intermittent flow trap was used to pool the discharge for sampling. If samples were collected for further analysis, the field crew should make arrangements for sending or delivering the samples to a laboratory the same day.

Section 8 – Any Non-Illicit Discharge Concerns

The last section of the worksheet is used to document any conditions at or near the outfall which require attention, including pipe failure, bank erosion, dumping, graffiti, or other maintenance or repair needs. Only items that are NOT related to illicit discharge should be recorded in this section.

The next step in the ongoing field screening of outfalls is to compile, organize and interpret data. The conditions observed and documented during field screening provide valuable information that can be used to determine the extent of illicit discharge problems in the MS4. It is important to compile and organize the data as soon as possible. Whether electronic or hard copy worksheets, a well-organized approach begins with effective management of the Outfall Field Screening Worksheets.

Major outfall designation data can be used to characterize the extent of illicit discharge problems in sub-watersheds and in the community. This characterization involves evaluation of the total number of outfalls designated as having potential, suspected or obvious illicit discharge potential. Based on this evaluation, the Town can assess whether illicit discharge problems are minimal, clustered in a specific area or areas, or severe. Characterizing the extent of illicit discharge problems will allow the Town to focus efforts on eliminating illicit discharges from the MS4.

All outfall screening is to be documented as part of the Town's illicit discharge program.

## 3. ROUTINE INSPECTIONS

In addition to the on-going field screening of outfalls, the Town plans to search for illicit discharges, illegal connections, and sanitary leakage by conducting routine plumbing and septic system inspections. The Town Building Inspector is responsible for performing the routine plumbing inspections. Winnebago County is responsible for coordinating the routine sanitary inspections.

Table E-5 provides a basic overview of the routine inspections.

Routine Plumbing Inspections:

The Town Building Inspector conducts routine plumbing inspections when a building permit is issued, a building changes ownership, or a water meter or battery is changed. At a minimum, the goal is to inspect residential plumbing systems once every 10 years. The purpose of the routine plumbing inspections is to locate illegal connections and cross-connections. Examples of illegal plumbing connections include a washing machine discharging to the building's sump pump, a garage floor drain directly connected to the building's storm lateral, a building's sanitary lateral cross-connected to the MS4, and lack of adequate cross-connection prevention devices.

Routine Septic System Inspections:

The Town relies on Winnebago County to inspect septic systems. The County requires that private septic system owners to hire a licensed septic company once every ± 3 years for a routine inspection. The inspection is typically performed when the septic tank is pumped out. The purpose of the routine septic system inspections is to identify failing septic systems and illegal connections to waters of the state or the MS4. Failing septic systems and illegal connections can result in illicit surface or subsurface discharges to the MS4.

## 4. RESPONDING TO ILLICIT DISCHARGES

This section describes policies and procedures for responding to known or suspected illicit discharges. The Town Board or Town's Contracted Consulting Engineer (if performing screening) is responsible for coordinating the response to known or suspected illicit discharges and spills. The procedures include investigating the source of an illicit discharge or spill, responding to spills, preventing and containing spills, notifying the Department of Natural Resources (DNR) of spills that may discharge into waters of the state, eliminating sanitary leakage into the MS4, notifying the DNR of dye testing, and notifying adjacent municipalities of illicit discharges that may enter their MS4 system.

There are two primary ways an illicit discharge or spill can be discovered:

- Illicit discharge discovered during field screening of outfalls and routine inspections; or
- Third party reporting. Third party reporting includes reports to the Town of a known or suspected illicit discharge or spill by the general public. This also includes known or suspected illicit discharges or spills discovered by municipal staff as part of their everyday operating procedures (not related to ongoing or on-going field screening of outfalls).

During field screening of outfalls, chemical test results are compared to recommended benchmark levels provided by the Wisconsin DNR. The recommended benchmark levels, along with potential illicit and non-illicit sources, are summarized in Table E-6. If chemical test results exceed action levels or at least two physical indicators are noted, the Town Board or Town's Contracted Consulting Engineer is notified. The Town Board or Town's Contracted Consulting Engineer then instructs field crews whether to further investigate to attempt to locate a source of the illicit discharge.

The Town must respond as soon as possible. Once the source of an illicit discharge or spill is identified, the offending discharger will be contacted and directed to correct the problem. Refer to Section 4, "Enforcement Actions". If an illicit connection cannot be eliminated in 30 days, the Town must contact the DNR to discuss appropriate action and timeframe for removal.

Investigating the Source of an Illicit Discharge or Spill:

Once an illicit discharge is found, a combination of methods is used to isolate its specific source. This section describes the following investigative methods: Drainage System Investigation, Drainage Area Investigation, and On-Site Investigation.

- *Drainage System Investigation:*

  This method involves progressive inspection and sampling along storm sewers and drainage ditches. The purpose of the investigation is to narrow the discharge to an isolated pipe or ditch segment within the drainage system. The simplest method is to start at the outfall and move up the system, inspecting storm sewer manholes and culverts along the way. The field crew should progressively move through the system until indicators reveal that the discharge is no longer present. As shown in Figure E-2, the goal is to isolate the discharge between two storm manholes or two culverts.

  Drainage system investigations include both visual observations and indicator sampling. Visual observations made during manhole and culvert inspections include presence of flow, odor, color, turbidity, floatables, and deposits or staining. Deposits or staining may be indicators of an intermittent discharge. If dry weather flow is observed, the field crew should collect a sample, and then analyze the sample in the field using commercially available test strips and kits. Indicator parameters that are required in the Town's WPDES permit, and other recommended parameters are summarized in Table E-7.

  Field crews must follow established safety and operational procedures when conducting manhole and culvert inspections. Established safety and operational procedures may include, but are not limited to properly diverting traffic, wearing safety vest/apparel, following proper procedures for removing manhole covers, using a gas monitor, and following proper procedures for confined space entry (if necessary).

  All drainage system inspections should be documented as part of the Town's illicit discharge detection and elimination program.

- *Drainage Area Investigation:*

  A basic visual survey or analysis of the drainage area for the problem outfall can be useful when investigating the source of an illicit discharge or spill. The field crew can simply walk or drive around the drainage area trying to identify a potential discharger or generating site. Drainage area investigations are most useful in tracing discharges from commercial or industrial sources. This method is not particularly useful in tracing sewage discharges. The field crew should use drainage area investigations in concert with visual observations and indicator sampling at manholes. For example, if the crew observes a thick, sudsy, fragrant discharge (consistent with wash water) at the outfall, they should check the drainage area for a laundromat. Other analytical tools include searching portions of the drainage area with high population density, high traffic density, older infrastructure age, and historic problems.

All drainage area investigations should be documented as part of the Town's illicit discharge detection and elimination program.

- *On-Site Investigation:*

  On-site investigations are used to pinpoint the exact source or connection producing a discharge within the MS4. The basic approaches to on-site investigations are dye testing, smoke testing and televising. Depending on conditions, the field crew may use one or more of these approaches. These approaches are most effective in locating direct discharges to the storm sewer and are not very effective at locating indirect discharges. The field crew must take appropriate steps related to safety and proper notification prior to conducting dye testing, smoke testing and televising. Table E-8 summarizes the three basic approaches.

  All on-site investigations should be documented as part of the Town's illicit discharge detection and elimination program.

<u>Responding to Spills:</u>

In the case of a spill being reported to the Town by the general public or by its own municipal staff, the person receiving the report should take in as much information as possible from the person reporting the spill. This information will be helpful in establishing the severity of the incident and how to respond. At a minimum, the following information should be requested:

- Date and time of spill
- Location of spill (street address, municipality)
- Property owner's (or responsible party's) name and address
- Type and amount of substance (known or suspected)
- Actions taken to stop or contain spill (if any)

The first priority is to determine if there is any fire, explosion, safety hazard to life and health, or a need to evacuate the building or area. All reports of spills should be referred immediately to the Fire Department, either via the direct line or the 911 Emergency System. For spills involving a petroleum sheen or highly suspicious material, the 911 Emergency System should be contacted immediately. Contact information for all parties that may be involved in responding to and / or cleanup of a reported spill is provided in Table E-9.

Some spills must be immediately reported to the DNR. Attachment E-1 includes a condensed version of Wisconsin's spill reporting requirements. All discharges of hazardous substances that adversely impact, or threaten to adversely impact public health, welfare or the environment must be immediately reported to the DNR. Attachment E-1 also describes the DNR's response procedures for reported spills. In the case of a reportable spill, the Primary Contact must notify the DNR's 24-hour toll free spill hotline at 1-800-943-0003.

After making the necessary contacts and notifications, the next steps in responding to a spill are containment, tracking the source, cleanup, and evidence collection. Depending on the severity of the spill, containment and cleanup efforts will be conducted by one or more of the following: Engineer, Fire and Police Department, Hazmat Team, Coast Guard, and adjacent municipalities. Evidence collected during cleanup may include eyewitness accounts, photographs, samples, and other information specific to the incident. Tracking the source of the spill should be done using the same methods summarized above ("Investigating the Source of an Illicit Discharge or Spill").

The Town plans to document spill response efforts, including observations, parties involved in spill response, conversations, witness statements, decisions, actions, sampling activity, and photographs. Each photograph should include written documentation including date and time photo was taken, location, and photographer's name, title, and phone number.

Preventing and Containing Spills:

Public education and outreach is an effective measure for preventing and containing spills. There is a strong likelihood that many spills will not be reported to the Town. As such, outreach to municipal employees, businesses, property owners and the general public regarding ways to prevent and contain spills is an important component of the illicit discharge program. A targeted public education and outreach program is recommended for three sectors of the community:

- *Residential Neighborhoods* – Educate residential homeowners about the local Clean Sweep Program. If automobile fluids and other hazardous materials are properly disposed of during the Clean Sweep Program, the fluids can not be accidentally spilled or intentionally dumped into a storm drain. Storm drain stenciling may also be an effective educational tool.

- *Businesses / Generating Sites* **–** Educate business owners and generating sites about spill prevention and containment. Table E-10 lists common generating sites and types of activities that may result in illicit discharges and spills. Certain businesses have a higher potential for spills due to the type of materials and activities at the site. Useful outreach materials may include educational brochures, posters, and generic spill response plans which can be used by business owners and operators. The generic spill response plan should contain a list of local phone numbers for reporting spills, a list of best management practices for preventing spills, and a list of procedures for containing spills.

- *Municipal Housekeeping* – Educate Town employees about spill prevention and containment. Spills may occur during routine municipal operations, such as sanitary sewer maintenance, municipal vehicle maintenance, and household hazardous waste collection. It is important that Town employees are properly trained in spill response, particularly the fire department and local hazmat team. Also, the Town should work with the WDOT and County Highway Department to ensure that there is a spill response plan in place for local highways and streets. Roadways have a higher potential for spills due to accidents.

In addition to the public education and outreach program, the following practices and procedures are recommended to contain spills that occur within the Town:

- If a spill occurs, immediately plug or block surface inlets and ditches to contain the spill.
- If a spill occurs, immediately plug or block pond outlet structures to contain the spill.
- If a spill occurs, immediately plug or block underground storm sewer pipes using caulk dams and expandable plugs to contain the spill prior to discharge into waters of the state.
- Maintain an adequate supply of adsorbent spill cleanup materials at all times.

Notifying the DNR of Spills That May Discharge Into Waters of the State:

In the event that the Town identifies a spill or release of a hazardous substance, which has resulted or may result in the discharge of pollutants into waters of the state, the Town must immediately notify the DNR via the 24-hour toll free spill hotline (800-943-0003).

Eliminating Sanitary Leakage into the MS4:

Leakage from the sanitary sewer system into the MS4 will most likely be discovered during field screening of outfalls and routine sanitary sewer inspections. The Town will, to the maximum extent practicable, eliminate sanitary leakage into the MS4. Elimination of sanitary leakage will be accomplished by physically removing the connection. All repairs undertaken to eliminate sanitary leakage into the MS4 will be documented as part of the Town's illicit discharge detection and elimination program.

Notifying the DNR of Dye Testing:

The Town may conduct dye testing as an investigative method for tracking the source of a known or suspected illicit discharge. The Town must provide the Department of Natural Resources with advance notice of the time and location of dye testing within a MS4. The Town should notify the DNR a minimum of 1 business day prior to conducting dye testing. Verbal notification can be made either via the DNR's 24-hour spill hotline (1-800-943-0003) or to the DNR's Northeast Region Spills Coordinator.

Notifying Adjacent Municipalities of Illicit Discharges That May Enter Their MS4 System:

In the case of an illicit discharge that originates from the Town's MS4 and that discharges directly into an MS4 or property under the jurisdiction of an adjacent municipality, the Town must notify the affected municipality within 1 business day. Contact information for each of the Town's neighboring municipalities is provided in Table E-9. The Town should document each illicit discharge notification to an adjacent municipality.

## 5. ENFORCEMENT ACTIONS

Once the Town Board or Town's Contracted Consulting Engineer can trace an illicit discharge or illegal connection to a source which is identified as a specific residence or commercial / industrial establishment, the property owner is identified as being non-compliant with the Town's Illicit Discharge and Connection to Storm Sewers Ordinance. When a non-compliance issue is identified, the inspector should first attempt to call or speak with the responsible party. For a minor non-compliance issue, the inspector will provide a written "Warning Notice" including

deadline for correcting the non-compliance. The inspector will also distribute educational materials, if deemed appropriate. The majority of non-compliance issues will likely be corrected in this manner. If the deadline is not met, the inspector will send via US Mail a written "Notice of Violation" to the responsible party. The "Notice of Violation" will outline the required actions to be completed by a specific date and time in order to avoid enforcement action.

Enforcement actions will depend on the type and severity of non-compliance. Typically, enforcement actions will include citations and forfeitures. Citations and forfeitures will continue until the inspector determines the site is compliant. Each day of non-compliance will be considered a new violation. For blatant, intentional, repetitive or severe non-compliance issues, the Engineer shall immediately initiate enforcement actions. Other potential enforcement actions include "Cease and Desist Orders", terminating storm sewer access, terminating water supply access, terminating sanitary sewer access, and issuing a "Notice of Intent" that the municipality intends to perform emergency work. Costs associated with emergency work will be billed to the responsible party or if not paid, placed on the tax roll as a special assessment.

If it takes more than 30 days to remove the illicit connection, the Town must contact the DNR to discuss appropriate action and the timeframe for removal.

All enforcement actions shall be documented as part of the Town's illicit discharge detection and elimination program. The Town should also document the number of illicit discharges and connections that are eliminated, and the total number of days that it took to eliminate the discharge/connection.

## 6. INFORMATION SUBMITTED BY THE PUBLIC

Information submitted by the general public or an adjacent municipality will be forwarded to Town Clerk for documentation and follow-up. Information might be submitted verbally, by phone, e-mail, letter or website.

Follow-up activities may consist of reviewing the MS4 map, requesting a copy of plumbing plans, performing field and lab tests, conducting site inspections, and / or initiating enforcement actions. All information received from the public and associated follow-up activities should be documented as part of the Town's illicit discharge detection and elimination program.

# APPENDIX E

**Tables, Figures & Attachments**

## TABLE E-1: ONGOING FIELD SCREENING STEPS

| STEP | STRATEGIES |
|---|---|
| Step 1: Acquire necessary mapping, equipment and staff | ▪ Use municipal separate storm sewer system (MS4) map.<br>▪ Refer to Table E-2 for field screening equipment list.<br>▪ For safety reasons, use a two-person field crew with proper training. |
| Step 2: Determine when to conduct field screening | ▪ During dry season, if possible. Leaf-off conditions may be beneficial for accessing some outfalls.<br>▪ After a dry period of at least 48 hours.<br>▪ Low groundwater levels.<br>▪ In Wisconsin, this corresponds to the months of June through November, depending on actual conditions. |
| Step 3: Identify where to conduct field screening | ▪ Outfalls located within the Village's MS4 jurisdiction and developed urban area.<br>▪ Screen outfalls systematically using MS4 map and after considering complaints, high risk areas, and results of previous outfall screening history. |
| Step 4: Conduct field screening | ▪ Mark and photograph outfalls. Record GPS coordinate.<br>▪ Record outfall characteristics. Use "Outfall Field Screening Worksheet" or electronic form.<br>▪ Simple monitoring at flowing outfalls.<br>▪ Perform sampling at flowing outfalls.<br>▪ Deal with major problems immediately. |
| Step 5: Compile data from field screening | ▪ Compile GPS data and photographs of outfalls.<br>▪ Enter data into database, or file paper copies of data in one location.<br>▪ Send any samples to laboratory for analysis, if necessary.<br>▪ Update MS4 map if necessary. |
| Step 6: Develop designation for outfalls | ▪ Use compiled data to designate outfalls as having obvious, suspect, potential, or unlikely discharge potential. |
| Step 7: Characterize the extent of illicit discharge problems | ▪ Use major outfall designation data.<br>▪ Characterize extent of illicit discharge problems as minimal, clustered or severe. |
| Step 8: Revise on-going monitoring strategy, as needed | ▪ Use on-going field screening of outfalls and routine inspections of plumbing systems, septic systems, sanitary sewers, and storm sewers. |

## TABLE E-2: FIELD SCREENING EQUIPMENT & SUPPLY LIST

| QUANTITY | ITEM |
|---|---|
| 1 | Backpack or Carrying Case |
| Enough for each item requiring batteries | Batteries (for flashlight, camera, GPS unit, etc) |
| 1 | Camera (preferably digital) |
| 1 per person | Cellular Phones or Handheld Radios |
| 1 per person | Clipboard and Pencil |
| 1 per person | Photo ID Badge with (community) logo |
| 1 | Disposable Surgical Gloves, box |
| 1 | First Aid Kit |
| 1 | Flashlight or Head Lamp |
| 1 | GPS Unit |
| 1 | Labeling Tape, rolls |
| 1 | MS4 Map |
| 1 | List of MS4 Outfalls and WPDES Permits |
| 1 | Measuring Tape |
| 1 per outfall | Outfall Field Screening Worksheets |
| Varies | Spray Paint, cans |
| 1 | Stop Watch or Watch with Second Hand |
| 1 | Temperature Probe |
| 1 per person | Waders, pairs |
| 1 per outfall | Wide Mouth Sample Bottles, 1-liter |
| **OPTIONAL ITEMS [2]:** | |
| See Footnote Below | Test Strips and Kits [3] |

1. Quantities are per field crew.

2. If test strips and kits are not available to the field crew for analysis in the field, all samples collected during field screening must be taken to a testing laboratory.

3. Recommended test strips and kits: pH, total chlorine, total copper, alkalinity, ammonia, chloride, total hardness, nitrate-nitrite. Test strips should provide 'concentration range' for parameter being tested.

   *Field analysis parameters that are **required** by Permit include pH, total chlorine, total copper, total phenol and detergents OR use of detergent, ammonia, potassium, and fluoride as indicator parameters. Parameters that cannot be field analyzed with test strips should be analyzed in a laboratory.*

## TABLE E-3: SENSORY INDICATOR SEVERITY RANKING

| SENSORY INDICATOR | SEVERITY RANKING | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Odor | Odor is faint or the crew cannot agree on its presence or origin. | Moderate odor within the pipe. | Odor is strong enough that crew can smell it a considerable distance from the outfall. |
| Color | Faint color detected in sample bottle. | Color is clearly detected in sample bottle. | Color is clearly detected in outfall flow. |
| Turbidity | A slight cloudiness is detected. | The sample is cloudy. | The sample is opaque, meaning that no light can pass through. |
| Floatables | Few floatables or slight sheen / suds / scum observed. Origin is not obvious. | Some floatables or moderate sheen / suds / scum observed. Some indication of origin. | Significant amount of floatables / sheen / suds / scum observed. Origin is clearly determined. |
| Cold Weather Indicators | Slight melting, discoloration or formation of “rime ice”. | Moderate melting, discoloration or formation of “rime ice”. | Significant melting, discoloration or formation of “rime ice”. |

## TABLE E-4: OUTFALL DESIGNATION DESCRIPTIONS

| DESIGNATION | DESCRIPTION |
|---|---|
| Unlikely Discharge | Flowing outfalls with chemical indicators below benchmark levels; Flowing and non-flowing outfalls with fewer than two physical indicators. |
| Potential Discharge | Flowing outfalls with chemical indicators slightly above benchmark levels; Flowing and non-flowing outfalls with two or more physical indicators. |
| Suspect Discharge | Flowing outfalls with chemical indicators significantly above benchmark levels and/or high severity on one or more physical indicators. |
| Obvious Discharge | Outfalls where there is dumping or an illicit discharge that does not require sample collection for confirmation. |

## TABLE E-5: ON-GOING FIELD SCREENING & ROUTINE INSPECTIONS

| TASK | DESCRIPTION | FREQUENCY |
|---|---|---|
| On-Going Field Screening of Outfalls | Includes all outfalls. Use same procedure used for initial field screening of major outfalls. | Priority Outfalls: Once Every Year<br>Major Outfalls: Once Every 5 Years<br>Minor Outfalls: Once Every 5 Years |
| Routine Plumbing Inspections | Visually inspect plumbing systems when a building permit is issued, a building changes ownership, or a water meter is changed. | Once every ± 10 Years |
| Routine Septic System Inspections | Require private septic system owners to hire a licensed septic company for an inspection as part of routine septic system maintenance and pumping. | Once Every ± 3 Years (if any) |
| Routine Sanitary Sewer Inspections | Visually inspect and/or televise sanitary sewers during wet weather to search for infiltration and inflow (I & I) sources and sanitary leakage. | ± 10% of System Every Year<br>-or-<br>100% of System Every ± 10 Years |
| Routine Storm Sewer Inspections | Visually inspect and/or televise storm sewers during dry weather to search for illicit discharges, cross connections, and structural problems. | Before an Urban Street Is Reconstructed or When a Storm Sewer Is Cleaned |

## TABLE E-6: CHEMICAL INDICATOR BENCHMARK LEVELS

| PARAMETER | BENCHMARK LEVEL | ILLICIT SOURCES | NON-ILLICIT SOURCES |
|---|---|---|---|
| Ammonia | 0.1 mg/l | Sanitary sewerage and industrial wastewater | Pets, wildlife and potentially WPDES permitted discharges |
| Detergents | 0.5 mg/l | Industrial cleansers, commercial wash water and sanitary sewerage | Residential car washing |
| pH | Less than 6 or greater than 9 | Industrial wastewater and concrete truck wash-out | Groundwater and WPDES permitted discharges |
| Total Chlorine | Detection or positive test unless associated with a WPDES permitted discharge at background water supply levels | Industrial wastewater, swimming pools and sanitary sewerage | WPDES permitted discharges |
| Total Copper | 0.1 mg/l | Copper-based product use and manufacturing | WPDES permitted discharges |
| Phenol | Detection or positive test | Chemical, textile, paint, resin, tire, plastic, electronics and pharmaceutical manufacturing | None |
| Fluoride | Detection above background groundwater or water supply levels | Commercial and industrial wastewaters with a water supply component | Groundwater and WPDES permitted discharges |
| Potassium | 10 mg/l | Sanitary sewerage and industrial wastewater | Groundwater and WPDES permitted discharges |
| E. coli | 10,000 MPN/100 mL | Sanitary sewerage | Wildlife and pets |
| Human Bacteriodes | Detection or positive test | Sanitary sewerage | None |

## TABLE E-7: INDICATOR PARAMETERS

| PARAMETER | DISCHARGE TYPE DETECTED | | | | ANALYTIC METHOD |
|---|---|---|---|---|---|
| | SEWAGE | WASH WATER | TAP WATER | INDUSTRIAL OR COMMERCIAL LIQUID WASTES | |
| Ammonia | Good Indicator | Sometimes an Indicator | Poor Indicator | Sometimes an Indicator | Test Strip [2] |
| Boron | Sometimes an Indicator | Sometimes an Indicator | Poor Indicator | Unknown | Laboratory (Spectro-photometer) |
| Chlorine (Total) [1] | Poor Indicator | Poor Indicator | Poor Indicator | Sometimes an Indicator | Test Strip [2] |
| Color | Sometimes an Indicator | Sometimes an Indicator | Poor Indicator | Sometimes an Indicator | Visual |
| Conductivity | Sometimes an Indicator | Sometimes an Indicator | Poor Indicator | Sometimes an Indicator | Laboratory (Probe) |
| Copper (Total) [1] | Sometimes an Indicator | Sometimes an Indicator | Sometimes an Indicator | Sometimes an Indicator | Test Strip [2] |
| Detergents – Surfactants [1] | Good Indicator | Good Indicator | Poor Indicator | Sometimes an Indicator | Test Kit [2] |
| E.coli / Fecal coliform | Sometimes an Indicator | Poor Indicator | Poor Indicator | Poor Indicator | Laboratory |
| Fluoride [1] | Poor Indicator | Poor Indicator | Good Indicator | Sometimes an Indicator | Test Strip [2] |
| Hardness (Total) | Sometimes an Indicator | Sometimes an Indicator | Sometimes an Indicator | Sometimes an Indicator | Test Strip [2] |
| pH [1] | Poor Indicator | Sometimes an Indicator | Poor Indicator | Sometimes an Indicator | Test Strip [2] |
| Phenol (Total) [1] | Poor Indicator | Poor Indicator | Poor Indicator | Good Indicator | Test Kit [2] |
| Potassium [1] | Sometimes an Indicator | Poor Indicator | Poor Indicator | Good Indicator | Laboratory (Probe) |
| Turbidity | Sometimes an Indicator | Sometimes an Indicator | Poor Indicator | Sometimes an Indicator | Laboratory (Turbidity Meter) |

1. Indicator parameters that are **required** by (community's) WPDES Permit include pH, total chlorine, total copper, total phenol and detergents OR use of detergent, ammonia, potassium, and fluoride as indicator parameters. Parameters that cannot be field analyzed with test strips should be analyzed in a laboratory.

2. Recommended test strips and test kits: pH, total chlorine, total copper, alkalinity, ammonia, chloride, detergents – surfactants, total hardness, nitrate-nitrite. Test strips should provide 'concentration range' for parameter being tested. Test strips are commercially available from sources such as NCL Labs and Hach. Other types of test kits include ampoule type kits (i.e. CHEMets, available from www.chemetrics.com).

## TABLE E-8: ON-SITE INVESTIGATIVE TECHNIQUES

| TECHNIQUE | DESCRIPTION | SAFETY / NOTIFICATIONS |
|---|---|---|
| Dye Testing | ▪ Introducing non-toxic dye into toilets, sinks, shop drains and other plumbing fixtures.<br>▪ Discovery of dye in downstream storm sewer determines that illicit connection exists. | ▪ Notify DNR at least 1 business day prior to dye testing.<br>▪ Carry a letter to document legal authority to gain access to the property (reference ordinance). |
| Smoke Testing | ▪ Introducing non-toxic smoke into the storm sewer system and observe where smoke surfaces.<br>▪ Similar to smoke testing sanitary sewers to detect I & I.<br>▪ Most common situations that indicate illicit discharges include smoke seen rising from internal plumbing fixtures or from sanitary sewers. | ▪ Notify the public prior to beginning smoke testing. A written notice should be sent out to residents.<br>▪ Notify local media if extensive smoke testing is planned.<br>▪ Notify local fire and police departments and local 911 call centers. |
| Televising | ▪ Guiding a mobile video camera through a storm sewer pipe.<br>▪ Locates flows and leaks within pipe that may indicate illicit discharge.<br>▪ Useful for areas where access is constrained but will only detect discharges that are flowing at the time of televising. | ▪ Carry a letter to document legal authority to gain access to the property, if necessary. |

## TABLE E-9: LOCAL CONTACTS

| CONTACT | NAME | TITLE | PHONE # |
|---|---|---|---|
| Emergency | -- | -- | 911 |
| MS4 Operator | -- | Town Board | 920-235-6953 |
| Fire Department | Chris Anderson | Fire Chief | 920-428-7812 |
| Police Department | -- | Winnebago County Sheriff | 920-727-2888 |
| Building Inspector | Tom Spierowski | Building Inspector & Zoning Administrator | 920-428-3361 |
| 24-Hour Contact | -- | -- | 920-725-0916 |
| Town Hall | Karen Brazee | Clerk / Treasurer | 920-235-6953 |
| DNR Spill Hotline | -- | -- | 1-800-943-0003 |
| DNR NE Region Spills Coordinator | Maizie Reif | Spills Coordinator | 920-360-4291 |
| County Emergency Management Director | Eric Rasmussen | Emergency Management Director | 920-236-7460 |
| Area Hazmat Team | Eric Rasmussen | Emergency Management Director | 920-236-7460 |
| Town of Clayton | Tori Straw | Administrator | 920-836-2007 |
| Town of Oshkosh | Jeannette Merten | Town Clerk | 920-235-7771 |
| Town of Neenah | Ellen Skerke | Administrator/Clerk | 920-725-0916 |

## TABLE E-10: GENERATING SITES & COMMON DISCHARGES

| SITE | COMMON DISCHARGES |
|---|---|
| Vehicle Operations (maintenance, repair, fueling, washing, storage) | ▪ Dumping fluids into storm drains<br>▪ Fuel spills, leaks and drips<br>▪ Wash-down of work areas<br>▪ Other spills |
| Outdoor Storage and Loading/Unloading | ▪ Spills at loading/unloading areas<br>▪ Wash-down of loading/unloading areas<br>▪ Leaks and spills of stored liquids |
| Waste Management | ▪ Leaks and spills of liquids<br>-Dumping fluids or debris into storm drains<br>▪ Leaking dumpsters |
| Physical Plants (building repair and maintenance, parking lot maintenance) | ▪ Discharge from washing and steam cleaning<br>▪ Runoff from degreasing and re-surfacing |
| Turf & Landscaping | ▪ Irrigation runoff<br>▪ Improper rinsing of fertilizer/pesticide applicators |
| Unique “Hotspots” (municipal or country club pools, golf courses, marinas, construction sites, restaurants, hobby farms) | ▪ Discharge of chlorinated pool water<br>▪ Dumping of sewage and grease |

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**Figure E-1**

**OUTFALL FIELD SCREENING WORKSHEET**


**Section 1: Background Data**

| | | | |
|---|---|---|---|
| Sub-Watershed: | | Outfall I.D. | |
| Today's Date: | | Time (Military): | |
| Investigators: | | Form Completed By: | |
| Temperature (°F): | Rainfall (inches): Last 24-Hours: | | Last 48-Hours: |
| Latitude: | Longitude: | GPS Unit: | GPS LMK #: |
| Camera: | | Photo #'s: | |

Land Use In Drainage Area (check all that apply):

| | |
|---|---|
| ☐ Industrial | ☐ Open Space |
| ☐ Urban - Urban Residential | ☐ Institutional |
| ☐ Suburban Residential | ☐ Other: |
| ☐ Commercial | ☐ Known Industries: |

Notes (e.g., origin of outfall, if known):

**Section 2: Outfall Description**

| Location | Material | Shape | Dimension (in.) | Submerged |
|---|---|---|---|---|
| ☐ Closed Pipe | ☐ RCP ☐ CMP<br>☐ PVC ☐ HDPE<br>☐ Steel<br>☐ Other: | ☐ Circular ☐ Single<br>☐ Elliptical ☐ Double<br>☐ Box ☐ Triple<br>☐ Other: ☐ Other: | Diameter / Dimensions: | In Water:<br>☐ No<br>☐ Partially<br>☐ Fully |
| ☐ Open Drainage | ☐ Concrete<br>☐ Earthen<br>☐ Rip-Rap<br>☐ Other: | ☐ Trapezoid<br>☐ Parabolic<br>☐ Other: | Depth:<br>Top Width:<br>Bottom Width: | With Sediment:<br>☐ No<br>☐ Partially<br>☐ Fully |
| ☐ In-Stream | (applicable when collecting samples) | | | |
| Flow Present? | ☐ Yes ☐ No *If No, skip to Section 5.* | | | |
| Flow Description (if present) | ☐ Trickle ☐ Moderate ☐ Substantial | | | |

**Section 3: Quantitative Characterization**

| FIELD DATA FOR FLOWING OUTFALLS | | | | |
|---|---|---|---|---|
| **Parameter** | | **Result** | **Unit** | **Equipment** |
| ☐ Flow #1 | Volume | | Liter | Bottle |
| | Time to Fill | | Second | |
| ☐ Flow #2 | Flow Depth | | Inches | Tape Measure |
| | Flow Width | ' " | Feet / Inches | Tape Measure |
| | Measured Length | ' " | Feet / Inches | Tape Measure |
| | Time Of Travel | | S | Stop Watch |
| Temperature | | | °F | Thermometer |
| pH | | | pH Units | Test Strip / Probe |
| Ammonia | | | mg/l | Test Strip |

**McMAHON ASSOCIATES, INC.**

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Valparaiso, IN 46383
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(219)464-8248 - Fax

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P.O. Box 1035 / Neenah, WI 54957-1025
(920)751-4200 - Telephone
(920)751-4284

1700 Hutchins Road
Machesney Park, IL 61115
(815)636-9590 - Telephone
(815)636-9591 - Fax

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**Figure E-1**

**OUTFALL FIELD SCREENING WORKSHEET**



**Section 4: Physical Indicators For Flowing Outfalls Only**

Are any physical indicators present in the flow? ☐ Yes ☐ No (If No, Skip To Section 5)

| Indicator | Check If Present | Description | Relative Severity Index (1-3) | | |
|---|---|---|---|---|---|
| Odor | ☐ | ☐ Sewage ☐ Rancid / Sour ☐ Petroleum / Gas ☐ Sulfide ☐ Other: | ☐ 1 Faint | ☐ 2 Easily Detected | ☐ 3 Noticeable From A Distance |
| Color | ☐ | ☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other: | ☐ 1 Faint Colors in Sample Bottle | ☐ 2 Clearly Visible in Sample Bottle | ☐ 3 Clearly Visible in Outfall Flow |
| Turbidity | ☐ | See Severity | ☐ 1 Slight Cloudiness | ☐ 2 Cloudy | ☐ 3 Opaque |
| Floatables (Does Not Include Trash) | ☐ | ☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Surface Scum ☐ Petroleum (oil sheen) ☐ Other: | ☐ 1 Few / Slight; origin not obvious | ☐ 2 Some, indications of origin; (e.g., possible suds or oil sheen) | ☐ 3 Some; origin clear (e.g., obvious oil sheen, suds or floating sanitary material |
| Cold Weather | ☐ | ☐ Ice Melt ☐ Ice Discoloration ☐ "Rime Ice" | ☐ 1 Slight | ☐ 2 Moderate | ☐ 3 Significant |

**Section 5: Physical Indicators For Both Flowing & Non-Flowing Outfalls**

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (If No, Skip To Section 6)

| Indicator | Check If Present | Description | Comments |
|---|---|---|---|
| Outfall Damage | ☐ | ☐ Spalling, Cracking Or Chipping ☐ Peeling Paint ☐ Corrosion | |
| Deposits / Stains | ☐ | ☐ Oily ☐ Flow Line ☐ Paint ☐ Other: | |
| Abnormal Vegetation | ☐ | ☐ Excessive ☐ Inhibited | |
| Poor Pool Quality | ☐ | ☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other: | |
| Pipe Benthic Growth | ☐ | ☐ Brown ☐ Orange ☐ Green Other: | |

**Section 6: Overall Outfall Characterization**

| | | | |
|---|---|---|---|
| ☐ Unlikely | ☐ Potential (presence of two or more indicators) | ☐ Suspect (one or more indicators with a severity of 3) | ☐ Obvious |

**Section 7: Data Collection**

| | | |
|---|---|---|
| 1. Sample For the Lab? | ☐ Yes | ☐ No |
| 2. If Yes, Collected From: | ☐ Flow | ☐ Pool |
| 3. Intermittent Flow Trap Set? | ☐ Yes | ☐ No |

**Section 8: Any Non-Illicit Discharge Concerns** (e.g., trash or needed infrastructure repairs?)

| | | |
|---|---|---|
| ☐ Yes | ☐ No | Comments: |

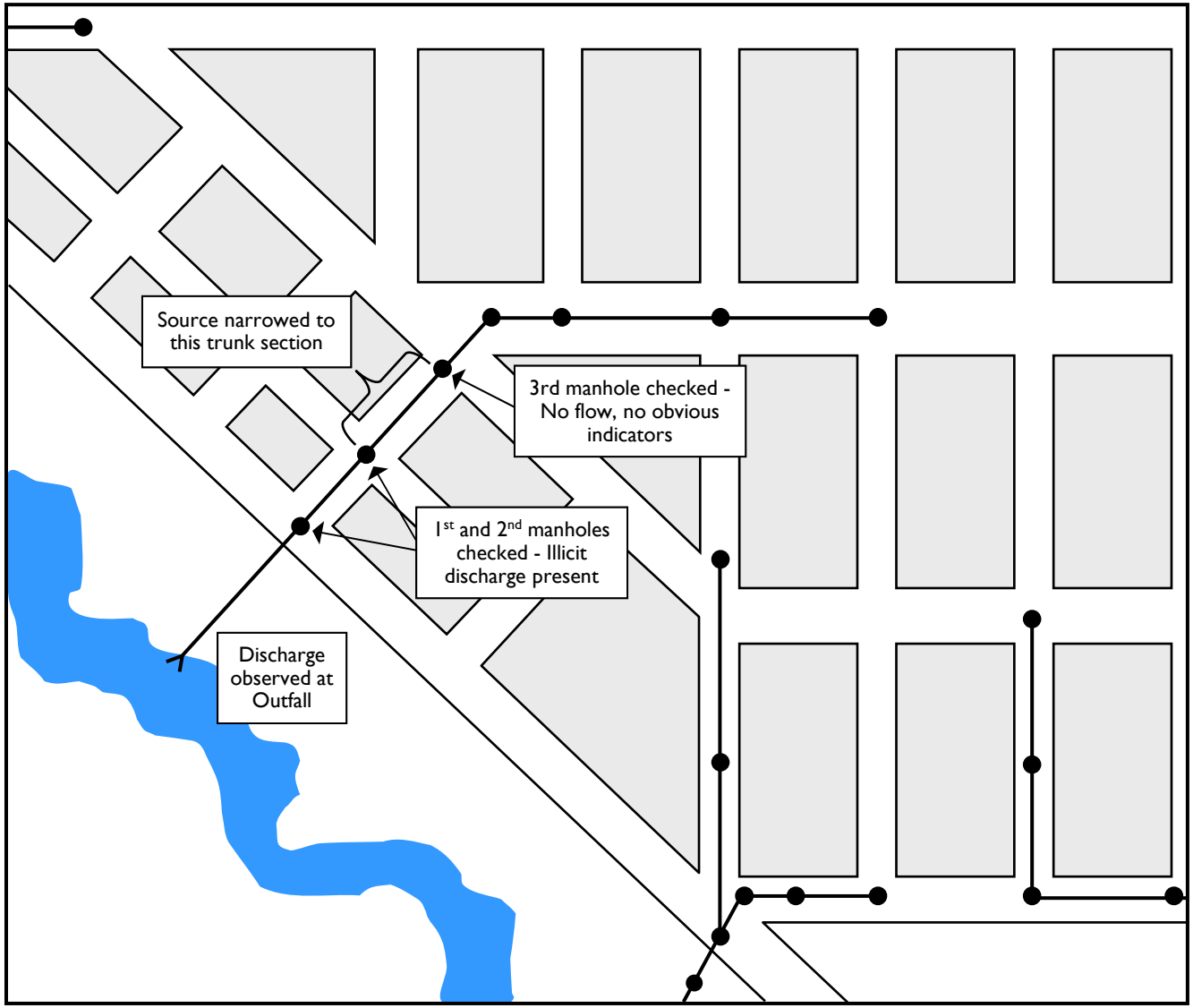


FIGURE E-2

EXAMPLE INVESTIGATION FOLLOWING THE SOURCE UP THE STORM SEWER SYSTEM

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Remediation and Redevelopment Program February 2021

# DNR Staff Provide Spill Response and Support

Rarely does anyone ever plan a spill. Spills are typically caused by accidents of some sort, but when they do occur, the people involved with a spill must comply with state requirements. Wisconsin law mandates that spills of hazardous substances be immediately reported and cleaned up to protect Wisconsin's citizens and natural resources. When a spill occurs, the DNR has staff located in regional offices around the state to help in a variety of ways.

## Responding to Spills

*During Normal Working Hours*
When calls are made to the DNR spill hotline during the day, the information comes directly to the DNR office in Madison and is forwarded to the Regional Spill Coordinator for follow-up.

*After Hours*
During the evening hours and on weekends, the phone calls are directed to the Wisconsin State Patrol, who will forward the information to a DNR duty officer. That duty officer will then alert the On-Call Spill Coordinator to the situation.

**The DNR encourages the public to report hazardous substance spills using the 24-hour toll-free hotline: 1-800-943-0003**

## DNR Field Response

*DNR Wardens and Regional Spill Coordinators*
The first responders to a hazardous substance spill for the DNR may be a field warden or regional spill coordinator. Wardens are more likely to respond in remote areas since they are widely distributed across the state. Each county has at least one warden. Wardens know local responders, such as fire and police personnel, are familiar with the natural resources impacted by a spill and can assist the responsible party in managing the spill.

Spill coordinators (working in the DNR's Remediation and Redevelopment Program) are located in each of the regional DNR offices. These spill coordinators specialize in technical spill response issues and are available before, during, and after spills occur.

When a field warden or regional spill coordinator gets a call about a spill, their follow up may include additional phone calls to get more information about the nature of the spill, going to the site, and/or requesting other DNR assistance (e.g., fish managers, water resources staff and pubic information specialists).

When an emergency occurs and the responsible party is not available or willing to take action, the DNR will call in a zone contractor to respond to the spill. Zone contractors are emergency response companies that provide statewide emergency response services in such situations.

These companies normally provide a response within two hours of notification, and specialize in emergency response, spill containment and removal. They can assess a situation, take actions to prevent spilled materials from harming the public or the environment, sample substances to determine how to manage them, contain the spilled materials and remove those substances from the spill site to a secure facility until analyses are completed to determine their final placement. After the response, the department will seek cost recovery from the responsible party.

Publication Number: RR-559
dnr.wi.gov, search "spills"

### Assistance Before a Spill

The spill coordinators are part of local planning and response networks. They work with local emergency planning agencies, talk to the local fire departments about spill response issues, and work with the wardens to ensure a consistent DNR approach to spill response. In addition, the spill coordinators work with local industries who may handle hazardous substances as part of their business to provide them with technical support for spill prevention as well as spill response.

### Assistance After a Spill

When a spill occurs, field wardens and spill coordinators can provide assistance in a variety of ways. The DNR has developed spill packets that are provided to persons who are responsible for the release. Included in these packets is information on DNR regulations, additional DNR contacts, as well as listings of local contractors and waste management organizations that can assist the responsible party in management of the residual spilled material. The responsible party often consults with the spill coordinators for technical advice, since they are familiar with DNR regulations relating to spill containment and cleanup. Although smaller cleanups may not receive direct DNR oversight, the coordinators can answer questions and guide responsible parties through the process.

## RR Program State Spill Response Team

The DNR manages spills through the RR Program's Spill Response Team. This team is comprised of a state spill coordinator, a state emergency management coordinator, a federal removals coordinator, the five regional spill coordinators and legal counsel. These staff meet regularly to identify and resolve spill response issues and help make spill response efforts in Wisconsin as effective as possible.

For more information, please see visit dnr.wi.gov and search "Spills."

**Northeast Region Spill Coordinator**
Maizie Reif 920-360-4291 (Green Bay)

**Northern Region Spill Coordinator**
Jeff Paddock 715-828-8544 (Rhinelander)

**Southeast Region Spill Coordinator**
Riley Neumann 414-750-7030 (Milwaukee)

**South Central Region Spill Coordinator**
Trevor Bannister 608-347-0058 (Fitchburg)

**West Central Region Spill Coordinator**
Jayson Schrank 715-410-8841 (Eau Claire)

**State Spill & Federal Removals Coordinator**
Issac Ross 414-750-7140 (Madison)

**State Emergency Response Coordinator**
David Woodbury 608-266-2598 (Madison)

**Legal Counsel**
Bill Nelson 608-267-7456 (Madison)

**Wisconsin DNR - Hazardous Substance Spills**

**Remediation and Redevelopment Program** **November 2016**

# Immediate Reporting Required for Hazardous Substance Spills

If you are aware of a hazardous substance spill notify the Department of Natural Resources (DNR). State law requires the IMMEDIATE reporting of hazardous substance spills and other discharges to the environment.

# CALL 800-943-0003 TO REPORT SPILLS

## Use DNR Form 4400-225 to report other hazardous substance discharges

Other hazardous substance discharges, including historical contamination and contamination caused by an ongoing long-term release, discovered during an environmental assessment or laboratory analysis of soil, sediment, groundwater or vapor samples, should be reported to the DNR by filling out and submitting DNR Form 4400-225, "Notification for Hazardous Substance Discharge (Non-Emergency Only)," which is is available at dnr.wi.gov.

✓ **Report hazardous substance discharges as soon as visual or olfactory evidence confirms a discharge or laboratory data is available to document a discharge. Do not wait to complete a Phase II environmental assessment, or other similar report, to notify the DNR.**

## Reporting is everyone's responsibility

Individuals and entities that cause a hazardous substance spill or discharge to the environment are required by state law to notify the DNR immediately - as soon as the spill or discharge is identified. Individuals and entities that own or control property where the spill or discharge occurred must report the discharge immediately if it is not reported by the person or entity that caused the discharge.

For public health and safety, the DNR encourages everyone to report known hazardous substance discharges. Reporting a spill or other discharge, in itself, does not make a person or entity liable for the contamination.

## Proper spill containment, cleanup, and disposal is always required

Every person/entity (including lenders and local governments) that causes a hazardous substance discharge, or owns or controls property at which a discharge occurred, must comply with the response action requirements in Wis. Admin. Chs. NR 700 to 754. No spill or discharge is exempt from the duty to properly contain, clean up and dispose of the substance and associated contaminated media, such as soil, water and other affected materials.

## Spill reporting exemptions

**All spills must be cleaned up, but it is generally not necessary to report recent spills that are:**

- less than 1 gallon of gasoline
- less than 5 gallons of any petroleum product other than gasoline
- any amount of gasoline or other petroleum product that is completely contained on an impervious surface
- individual discharges authorized by a permit or program approved under Wis. Stats. Chs. 289 - 299
- less than 25 gallons of liquid fertilizer
- less than 250 pounds of dry fertilizer
- pesticides that would cover less than 1 acre of land if applied according to label instructions
  - NOTE: Reporting is required if the ongoing, long-term release or application of a permitted pesticide, fertilizer or other substance accumulates to levels that exceed current health or safety standards.
- less than the federal reportable quantities listed in 40 C.F.R. §§ 117 or 302
  - NOTE: U.S. EPA (federal) spill reporting requirements are outlined on the internet at https://www.epa.gov/emergency-response/when-are-you-required-report-oil-spill-and-hazardous-substance-release.

## Spill reporting exemptions do not apply (and reporting is required) when:

- the spilled substance has not evaporated or been cleaned up in accordance with Wis. Admin. chs. NR 700 - 754
- the spilled substance is a potential fire, explosion or safety hazard
- the spilled substance causes, or threatens to cause, chronic or acute human health concerns
  - NOTE: If you are unsure about potential human health effects, consult with local or state health officials.
- the spilled substance adversely impacts, or threatens to impact, the air, lands or waters of the state (as either a single discharge or when accumulated with past discharges) - even if the degree of the impact has not yet been thoroughly evaluated
  - NOTE: If the substance causes sheen on surface water, has entered or is on the verge of entering the waters of the state, DNR will consider the spilled substance a threat to impact, or to have adversely impacted, waters of the state and reporting is required.

## Terms, definitions, statutes and rules

**Hazardous substance** —Any substance that can cause harm to human health and safety, or the environment, because of where it is spilled, the amount spilled, its toxicity or its concentration. Even common products such as milk, butter, pickle juice, corn, beer, etc., may be considered a hazardous substance if discharged to a sensitive area.

**Discharge** — Spilling, leaking, pumping, pouring, emitting, emptying, dumping, etc., to land, air or water.

**Spill** — A discharge that is typically a one-time event or occurrence, and usually inadvertent.

**Wis. Stat. § 292.11(2) and Wis. Admin. § NR 706.05** — Require individuals and entities that possess or control a hazardous substance, or that cause the discharge of a hazardous substance to the environment, to notify the DNR immediately about the discharge.

**Wis. Stat. § 292.99** — Authorizes penalties up to $5,000 for each violation of the notification requirement.

Consult Wis. Stat. Ch. 292 and Wis. Admin. §§ 700 – 754, and dnr.wi.gov for further information on hazardous substance spill and discharge reporting, investigation and cleanup.

## DNR contact information

To report a discharge call 1-800-943-0003. For more information on the spills program, including contact information, visit dnr.wi.gov, search "Spills".

# APPENDIX F

**Construction Site Pollutant Control**

**ARTICLE 15**

**TOWN/COUNTY ZONING ORDINANCE 23.15**

## 23.15 WINNEBAGO COUNTY CONSTRUCTION SITE EROSION CONTROL AND STORMWATER MANAGEMENT ORDINANCE

AN ORDINANCE TO CREATE CHAPTER 23.15, SECTION A, OF THE GENERAL CODE OF THE COUNTY OF WINNEBAGO RELATING TO THE CONTROL OF CONSTRUCTION SITE EROSION AND SECTION B OF THE GENERAL CODE OF THE COUNTY OF WINNEBAGO RELATING TO THE CONTROL OF STORM WATER RUNOFF FROM LAND DEVELOPMENT AND LAND REDEVELOPMENT

The Winnebago County Board does hereby ordain that Chapter 23.15, Section A and Section B are created to read as follows:

**Sections**



### S.ii GENERAL SECTION PROVISIONS

(1) Although Section 23.15 may be printed, and/or used as a separate ordinance, it is part of the Winnebago County Town/County Zoning Ordinance and provisions of other sections not in conflict with this section remain applicable.

(2) This Ordinance shall be in force and effect upon the date following its date of publication.

(3) Where a permit may be required under either Section A, or Section B, or both, the administering authority shall determine whether a separate or combined permit shall be required.

(4) Any permit required by this section shall be issued prior to the issuance of any other zoning permit, building permit, or sanitary permit.

(5) Intergovernmental agreements pursuant to State Statutes regarding the administration of this ordinance may be approved by the Winnebago County Board of Supervisors provided (a) that the prospective administering body has an ordinance at least as restrictive as this ordinance as determined by Winnebago County, and/or (b) that the prospective administering body provides satisfactory evidence, as determined by Winnebago County, to Winnebago County of an ability to administer this ordinance, or an equally restrictive ordinance. Evidence of "an ability to administer" may include contractual arrangements, and shall also provide that a contractual or employment arrangement prohibits a contractor or employee from reviewing their own work.

### S. 01 AUTHORITY

This ordinance is adopted by the Winnebago County Board under the authority granted by S. 59.693, S 101.65(1)(a) and S. 101.651(3m), and S. 101.653, Wisconsin Statutes. This ordinance supersedes all conflicting and contradictory storm water management regulations previously enacted under S. 59.69 and S. 236 Wisconsin Statutes. Except as specifically provided for in S. 59.693, Wisconsin Statutes, S. 59.69 and 59.99, Wisconsin Statutes applies to this ordinance and to any amendments to this ordinance.

(1) The provisions of this ordinance are deemed not to limit any other lawful regulatory powers of the Winnebago County Board of Supervisors.

(2) The Winnebago County Board hereby designates the Planning & Zoning Committee to administer and enforce the provisions of this ordinance.

(3) The requirements of this ordinance do not pre-empt more stringent storm water management requirements that may be imposed by any of the following:

(a) Department of Natural Resources administrative rules, permits or approvals including, but not limited to those authorized under S. 283.33 Wisconsin Statutes.

(b) Targeted non-agricultural performance standards promulgated in rules by the Department of Natural Resources under Chapter NR 151, Wisconsin Admin. Code.

(c) Technical standards for implementing non-agricultural performance standards developed by the Department of Natural Resources under Chapter NR 151, Wisconsin Admin. Code.

**S. 02 FINDINGS, PURPOSE and INTENT**

**FINDINGS**

The Winnebago County Board of Supervisors finds that runoff from land-disturbing construction activity carries a significant amount of sediment and other pollutants to the waters of the State and Winnebago County; and,

Further finds that uncontrolled storm water runoff from land development and land redevelopment activity has a significant impact upon water resources and the health, safety and general welfare of the community, and diminishes the public enjoyment and use of natural resources. Specifically, uncontrolled storm water runoff can:

(1) Degrade physical stream habitat by increasing stream bank erosion, increasing streambed scour, diminishing groundwater recharge, diminishing stream base flows and increasing stream temperature;

(2) Diminish the capacity of lakes and streams to support fish, aquatic life, recreational and water supply uses by increasing loadings of sediment, suspended solids, nutrients, heavy metals, bacteria, pathogens and other urban pollutants;

(3) Alter wetland communities by changing wetland hydrology and by increasing pollutant loads;

(4) Reduce the quality of groundwater by increasing pollutant loading;

(5) Threaten public health, safety, property, and general welfare by overtaxing storm sewers, watercourses, and other minor drainage facilities;

(6) Threaten public health, safety, property, and general welfare by increasing major flood peaks and volumes; and,

(7) Undermine floodplain management efforts by increasing the incidence and levels of flooding.

**PURPOSE**

(1) It is the purpose of Section A of the ordinance to preserve natural resources; to protect the quality of the waters of the State and the County; and to protect and promote the health, safety and welfare of the people, to the extent practical, by minimizing the amount of sediment and other pollutants carried by runoff or discharge from land disturbing construction activity to lakes, streams and wetlands; and,

(2) It is the purpose of section B of the ordinance is to set forth long-term, post-construction storm water requirements and criteria which will diminish the threats to public health, safety, welfare, and the aquatic environment due to runoff of storm water from land development and land redevelopment activity. The specific purposes of this section of the ordinance are to:

(a) Further the maintenance of safe and healthful conditions of the land and water resources of the County;

(b) Prevent and control the adverse effects of storm water, prevent and control soil erosion, prevent and control water pollution, and protect spawning grounds, fish, and aquatic life;

(c) Control exceedance of the safe capacity of existing drainage facilities and receiving water bodies; prevent undue channel erosion; control increases in the scouring and transportation of particulate matter; prevent conditions that endanger downstream property;

(d) Control building sites, placement of structures, and land uses, and promote sound economic growth.

**INTENT**

It is the intent of the Winnebago County Board of Supervisors that this ordinance manages the long-term, post-construction storm water discharges from land development and land redevelopment activities.

**S. 03 APPLICABILITY OF ORDINANCE**

This ordinance applies to land-disturbing construction activity, new land development, and all land redevelopment activity located within the boundaries and jurisdiction of the unincorporated portion of Winnebago County. The provisions of Section B do not apply to agricultural activity as defined herein. Any area affected by the provisions of this ordinance shall not be exempt from applicability by reason of annexation or incorporation unless the annexing or incorporating municipality maintains and enforces an ordinance that is equally restrictive as this ordinance in accordance with the provisions of S. 59.693(10), Wisconsin Statues.

MAPS. Where any map is referred to in this ordinance and said map is a digital compilation within the Winnebago County Geographic Information System (WINGS), said digital map shall be the regulatory map for purposes of enforcement of this ordinance.

**S. 04 FEE SCHEDULE / FINANCIAL GUARANTEE**

(a) The fees referred to in other sections of this ordinance shall be established by Winnebago County Board of Supervisors and may from time to time be modified by resolution. All "after the fact" fees shall be doubled.

(b) Where more than one permit is required, the permittee shall be required to pay the amount required for each permit.

(c) The financial guarantees referred to in other sections of the ordinance are in addition to permit fees and required escrow amounts and shall be as determined within the applicable section. If a financial guarantee is required in more than one section, the administering authority shall determine the total amount of the required guarantee, whether as a single or combined amount.

**S. 05 ENFORCEMENT**

(1) Any land-disturbing construction activity, land development, or land redevelopment activity, hereinafter activity, initiated after the effective date of this ordinance by any person, firm, association, or corporation subject to the ordinance provisions shall be deemed a violation unless conducted in accordance with the requirements of this ordinance. The term violation includes without limitation due to enumeration such things as failure to obtain a permit where required, failure to implement approved plans in a good faith manner, failure to comply with conditions of a permit issued, or failure to cease activity as required in a stop-work order posted under this ordinance.

(2) The administering authority shall notify the responsible owner or operator by certified mail of any non-complying activity. The notice shall describe the nature of the violation, remedial actions needed, a schedule for remedial action, and additional enforcement action that may be taken.

(3) Upon receipt of written notification from the administering authority under subsection (2), the permit holder, or landowner, shall obtain a permit where required, and/or correct work which does not comply with an approved plan or other provisions of a permit. The permit holder, or landowner, shall make corrections as necessary to meet the specifications and schedules set forth by the administering authority in the notice.

(4) (a) The administering authority is authorized to post a stop work order on all activity in violation of this ordinance. When such a stop work order has been posted, it shall have the effect of causing the original permit to be revoked and in all cases, it shall be unlawful for any further work to proceed until the permit is either issued or reinstated. . It shall further be unlawful to remove such stop work order without the direct authorization of the administering authority.

(b) After posting a stop-work order, the administering authority may issue a notice of intent to the permittee or landowner or land user of its intent to perform work necessary to comply with this ordinance. The administering authority may then go on the land and commence the work. The costs of the work

performed by the administering authority, plus interest at the rate authorized by administering authority shall be billed to the permittee or the landowner. Where the violation of the ordinance is likely to result in damage to properties, public facilities, or waters of the state, and after issuing the notice of intent, the administering authority may enter the land and take emergency actions necessary to prevent such damage, and bill such work in the manner previously described.

(c) In the event a permittee or landowner fails to pay the amount due, the clerk shall enter the amount due on the tax rolls and collect the amount plus any interest thereupon as a special charge against the property pursuant to Section 66.60(16), Wisconsin Statutes.

(5) The administering authority may revoke a permit issued under this ordinance for noncompliance with ordinance provisions.

(6) Any permit revocation, stop work order, or cease and desist order shall remain in effect unless retracted by the administering authority or by a court with jurisdiction.

(7) If the landowner or land user where no permit has been issued does not cease the activity after being notified by the administering authority or if a landowner violates a stop-work order posed under sub. (1), the administering authority is authorized to refer any violation of this ordinance, or of a stop work order or cease and desist order issued pursuant to this ordinance to the Corporation Counsel to obtain a cease and desist order or to commence further legal proceedings in any court with jurisdiction.

(8) Any person, firm, association, or corporation who does not comply with the provisions of this ordinance, or fails to cease activity as required in a stop-work order posted under this section, or fails to comply with any approved plan or permit, shall be subject to a forfeiture of not less than [500] dollars nor more than [1,000] dollars per offense, together with the costs of prosecution. Every violation of this ordinance is a public nuisance and each day that the violation exists shall constitute a separate offense.

(9) Compliance with this ordinance may be enforced by injunctional order by Winnebago County pursuant to S. 59.69(11), Wisconsin Statutes. It shall not be necessary to prosecute for forfeiture or a cease and desist order before resorting to injunctional proceedings.

**S.06 APPEALS**

An appeal to the provisions of Section 23.15 shall be done in accordance with the provisions of Section 23, Winnebago County Town/County Zoning Ordinance.

**S. 07 DEFINITIONS**

(1) **"Administering authority"** means the governmental employees or their designees empowered under S. 59.693, Wisconsin Statutes to administer this ordinance. For the purpose of this ordinance the administering authority is the Planning and Zoning Department under guidance from the Planning and Zoning Committee.

(2) **"Agricultural activity"** means planting, growing, cultivating and harvesting of crops for human or livestock consumption, the pasturing or yarding of livestock, sod farms and tree nurseries. For the purposes of Section A, Erosion Control, the term also includes tiling, and construction or expansion of facilities related to normal activities performed as part of a farming operation, i.e., only those facilities for which erosion control is addressed by Chapter 13, County Code.

(3) **"Best management practice" or "BMP"** means a practice, technique or measure which is determined to be an effective means by the Planning & Zoning Department of preventing or reducing runoff pollutants to waters of the state, to a level compatible with the performance standards in S. 15 and the pollution control requirements in S. 10(2) of this ordinance.

(4) **"Business day"** means a day the office of the Planning & Zoning Department is routinely and customarily open for business.

(5) **"Cease and desist order"** means a court-issued order to halt land development and land redevelopment activity that is being conducted without the required permit.

(6) **"Common plan of development or sale"** means an area where multiple separate and distinct land developing activities may be taking place at different times on different schedules but under one plan.

(7) **"Construction site"** means an area upon which one or more land-disturbing construction activities are occurring, including areas that are part of a larger common plan of development or sale where multiple separate and distinct land-disturbing construction activities may be taking place at different times on different schedules but under one plan.

(8) "**Design storm"** means a hypothetical discrete rainstorm characterized by a specific duration, temporal distribution, rainfall intensity, return frequency and total rainfall depth.

(9) **"Detention Pond"** means a depression in the land surface designed to temporarily detain or hold back storm water and release the water at a specified flow rate or rates. A detention pond may also be designed to reduce nonpoint source pollution.

(10) **"De-watering"** means any process, including pumping or ditching, by which excess water is removed from a site as part of the construction process.

(11) **"Discharge volume"** means the quantity of runoff discharged from the land surface as the result of a rainfall event.

(12) **"DSPS"** means the Department of Safety and Professional Services.

(13) **"Erosion**" means the detachment and movement of soil, sediment or rock fragments by water, wind, ice, or gravity.

(14) **"Erosion and sediment control plan"** means a comprehensive plan developed to address pollution caused by soil erosion and sedimentation during construction.

(15) **"Extent practical"** means a level of implementing best management practices in order to achieve a performance standard, which takes into account the best available technology, cost effectiveness and the degree, or extent to which best management practices can be implemented. Extent practical allows flexibility in the means to meet the performance standards and will vary based upon the performance standard and site conditions.

(16) **"Extra-territorial"** means the unincorporated area within 3 miles of the corporate limits of a first, second, or third class city, or within 1½ miles of a fourth class city or village.

(17) **"Final stabilization"** means the completion of all land disturbing construction activities at a construction site and that a perennial vegetative cover has been established throughout the construction site with a density of 70% of the cover for the unpaved areas and areas not covered by permanent structures. If a perennial vegetative cover has not been used, an equivalent permanent stabilization measure must have been approved for use by the administering authority and installed as required.

(18) **"Financial guarantee"** means a performance bond, maintenance bond, surety bond, irrevocable letter of credit, or similar guarantees submitted by the permit holder to the administering authority, in an amount and format approved by the administering authority, to assure that requirements of the ordinance are carried out in compliance with the storm water management plan.

(19) **"Impervious surface"** means a land cover that releases as runoff all or a large portion of the precipitation that falls on it. Rooftops, sidewalks, driveways, parking lots, gravel, and streets are examples of surfaces that typically are impervious.

(20) **"Infiltration"** means the process by which rainfall or surface runoff passes into or through the underlying soil.

(21) **"Land development activity"** means the act or process of changing land through the construction of buildings, parking lots, roads, landscaping, etc. which causes a change in the amount, rate, or quality of storm water runoff from the land.

(22) **"Land disturbing construction activity"** means any man-made disturbance of the land surface resulting in a change in the topography, existing vegetative and non-vegetative soil cover or the existing soil topography which may result in storm water runoff and lead to increased soil erosion and movement of sediment into waters of the state. Land-disturbing construction activity includes, but is not limited to clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities, but does not include agricultural or silviculture activities. Specific applicability is noted at S.10(1).

(23) **"Landowner"** means any person holding title to land.

(24) **"Land user"** means any person operating, leasing, renting, or having made other arrangements with the landowner by which the landowner authorizes use of his or her land.

(25) **"Maintenance agreement"** means a legal document that is filed with the County Register of Deeds as a property deed restriction, and which provides for long-term maintenance of storm water management practices.

(26) **"Municipal storm sewerage facility"** means catch basins, storm sewer pipes, pumps, and lift stations.

(27) **"Municipality"** means a town, county, village, or city.

(28) **"Non-domestic agricultural structure"** means a building or impervious surface designed to store machinery and/or harvested crops in any form, including machine sheds, grain bins, and silage pads. This definition does not include vertical silos, dairy barns, or any other building categorized as an "animal lot" as defined in the Livestock Waste Management Ordinance, Chapter 13, Winnebago County General Code.

(29) **"Non-storm discharge"** means a discharge to the storm sewer system created by some process other than storm water runoff.

(30) **"Non-structural measure"** means a practice, technique, or measure to reduce the volume, peak flow rate, or pollutants in storm water that does not require the design or installation of fixed storm water management facilities.

(31) **"Off-site"** means located outside the property boundary described in the permit application for land development or land redevelopment activity.

(32) **"Other than residential development"** means development that is not one or two family residential. This includes the following land uses: multi-family residential (more than 2 dwelling units on a single property) commercial, industrial, government and institutional, recreation, transportation, communication, and utilities, and the construction or expansion of facilities related to normal activities performed as part of a farming operation including but not limited to buildings, paved areas, etc.

(33) **"On-site"** means located within the property boundary described in the permit application for the land development or land redevelopment activity including the entire area of the tax parcel wherein the activity will occur.

(34) **"P8" (Program for Predicting Polluting Particle Passage through Pits, Puddles & Ponds)** means a model for predicting the generation and transport of stormwater runoff pollutants in urban watersheds.

(35) **"Peak flow discharge rate"** means the maximum unit volume of storm water discharged during a specified unit of time. Atlas 14 rainfall intensities with appropriate MSE3 or MSE4 rainfall distribution shall be used for peak flow calculations.

(36) **"Performance standard"** means a measurable number or measurable narrative for a pollution source specifying the acceptable outcome for a facility or practice.

(37) **"Permit**" means a written authorization made by the administering authority to the applicant to conduct land development or land redevelopment activities.

(38) **"Permit administration fee"** means a sum of money paid to the administering authority by the permit applicant for the purpose of recouping the expenses incurred by the authority in administering the permit, including but not limited to application review, issuance where appropriate, and inspections.

(39) **"Pervious surface"** means a surface that infiltrates rainfall. Lawns, fields and woodlands are examples of pervious surfaces.

(40) **Post-construction storm water discharge"** means any storm water discharged from a site following the completion of land disturbing construction activity and final site stabilization.

(41) **"Post-development condition"** means the extent and distribution of land cover types anticipated to occur under conditions of full development, which will influence storm water runoff and infiltration.

(42) **"Pre-development condition"** means the extent and distribution of land cover types present before the initiation of land development or land redevelopment activity.

(43) **"Redevelopment"** means new development that is replacing older development. Redevelopment in this ordinance only applies when the activity will increase the impervious area or projects requiring an NOI that was filed on or after January 1, 2011.

(44) **"Right-of-way"** means the area of a road within which the ditch, shoulder, and paved area are located. The right-of-way distance may be as defined or dedicated on a plat, certified survey map, or other recorded instrument.

(45) **"Road"** means a public or private right-of-way of a street, road, highway land, access easement, etc., which provides access to more than one parcel or principal structure.

(46) **"Road Construction"** includes all construction-type activities occurring within the road right-of-way, including without limitation such things as shouldering, ditching, etc..

(47) **"Runoff"** means the rainfall, snowmelt, or irrigation water flowing over the ground surface.

(48) "**Single lot activity:** a stormwater plan for a land development activity on a single lot where a lesser degree of detail may be required for review. The plan will normally not require engineering data. Also known commonly as a single lot drainage plan.

(49) **"Site"** means the entire area included in the legal description of the land upon which the land- disturbing construction activity is proposed in the permit application and further includes the entire tax parcel and deed area affected.

(50) **"Site restriction"** means any physical characteristic, which limits the use of a storm water best management practice or management measure.

(51) **"SLAMM"** means Source Loading and Management Model, a stormwater evaluation technique, developed for the Environmental Protection Agency (EPA), and used to evaluate the effectiveness of stormwater control.

(52) **"Stop work order"** means an order issued by the administering authority that requires that all construction activity on the site be stopped.

(53) **"Storm water management plan"** means a document that identifies what actions must be taken to reduce storm water quantity and pollutant loads from land development and land redevelopment activity to levels that meet the purpose and intent of this ordinance.

(54) **"Storm water management system plan"** is a comprehensive plan developed to address storm water drainage and nonpoint source pollution control problems on a watershed or sub-watershed basis, and which meets the purpose and intent of this ordinance.

(55) **"Storm water runoff"** means that portion of the precipitation falling during a rainfall event, or that portion of snowmelt, that runs off the surface of the land and into the natural or artificial conveyance or drainage network.

(56) **"Structure",** as used in the context of construction or building, means any manmade object with form, shape and utility, either permanently or temporarily attached to, placed upon or set into the ground which includes but is not limited to such objects as roofed and/or walled buildings, non-domestic agricultural structures, storage tanks, bridges, culverts, etc. and may include such things as fences or signs. The term also includes fill or filling which is the act by which earth, sand, gravel, rock or any other material is deposited, placed, replaced, pushed, dumped, pulled, transported or moved by man to a new location and shall include the conditions resulting there from.

(57) **"Structural measure"** means any physical practice or conveyance measures and end-of-pipe treatment that are designed to control storm water runoff pollutant loads, discharge volumes, and/or peak flow discharge rates.

(58) **"Storm sewer system"** means a conveyance or system of conveyances including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains which is designed for collecting water or conveying storm water.

(59) **"TR-55"** means the United States Department of Agriculture Natural Resources Conservation Service(formerly Soil Conservation Service), Urban Hydrology for Small Watersheds, Second Edition, Technical Release 55, June 1986, which is incorporated by reference for this chapter.

(60) **"Waters of the State"** means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within Wisconsin or its jurisdiction.

(61) **"Watercourse"** means a natural or artificial channel through which water flows and is identified on the official Winnebago County watercourse map, dated January 1, 2002 or subsequent revisions thereto and new channels that are created as part of a development that may not be on the existing map. The term watercourse includes waters of the state as herein defined. Additions or deletions to the map must be field verified by the administering authority. Additionally, when a watercourse is moved, any requirements related to the watercourse move with the water. The watercourse map is on file and maintained by Winnebago County Geographic Information System (WINGS).

(62) **"Watershed"** means an area bounded by a divide in which water drains to a specific point on the land.

(63) **"Wetland functional value"** means the type, quality, and significance of the ecological and cultural benefits provided by wetland resources, such as: flood storage, water quality protection, groundwater recharge and discharge, shoreline protection, fish and wildlife habitat, floral diversity, aesthetics, recreation, and education.

(64) **"Wetlands"** means an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions. These wetlands include but are not limited to natural, mitigated, and restored wetlands. Some wetlands are graphically shown on the DNR Wetland Inventory Maps dated July 5, 1986 or subsequent revisions.

(65) **"WPDES Storm Water Permit**" means a permit issued by the Wisconsin Department of Natural Resources under S. 283.33 Wisconsin Statutes that authorizes the point source discharge of storm water to waters of the state.

## S. 08 DESIGN CRITERIA, STANDARDS AND SPECIFICATIONS FOR BEST MANAGEMENT PRACTICES (BMPs).

### Section A



All BMPs required to comply with this ordinance shall meet the design criteria, standards and specifications for the BMPs based on accepted design criteria, standards and specifications identified in the following documents, or the most recently adopted version thereof, provided that where a provision of this ordinance requires a greater standard or degree of compliance, the provisions of this ordinance shall control:

(1) Wisconsin Storm Water Construction technical standards;

(2) Section IV of the Field Office Technical Guide, published by the USDA-Natural Resources Conservation Service as adopted and maintained by the Winnebago County Land Conservation Committee and Land & Water Conservation Department;

(3) Technical standards developed and disseminated by the Department of Natural Resources under subchapter V of Chapter NR 151, Wisconsin Admin. Code; and

(4) Other technical standards published or adopted by the above noted agencies, the Wisconsin Standards Oversight Council or the Winnebago County Land Conservation Committee and Land & Water Conservation Department.

## S. 09 MAINTENANCE OF BMPs

All BMP measures necessary to meet the requirements of this ordinance shall be maintained by the applicant for a permit issued under S. 11 or subsequent landowner throughout the duration of the construction activities until the site has undergone final stabilization.

## S. 10 CONTROL OF EROSION AND POLLUTANTS DURING LAND DISTURBING CONSTRUCTION ACTIVITY

(a) **GENERAL APPLICABILITY**. These general applicability provisions apply to the following land-disturbing construction activities, excluding that otherwise regulated by the DSPS under Wisconsin Admin. Code SPS 321.125.

(b) Those involving grading, removal of protective ground cover or vegetation, excavation, land filling or other activity affecting a surface area of 4,000 square feet or more;

(c) Those involving excavation or filling or a combination of excavation and filling affecting 400 cubic yards or more of soil, sand, or other excavation or fill material;

(d) Those involving public or private access drives, street, highway, road, or bridge construction, enlargement, relocation or reconstruction longer than 125 feet;

(e) Those involving the laying, repairing, replacing or enlarging of an underground pipe or facility for a continuous distance of 100 feet or more. The term pipe or facility includes, but is not limited to, utilities such as telephone, electric, gas, sanitary, storm water, etc.; NOTE: see S.11(5);

Those involving the construction or reconstruction of a continuous distance of 100 lineal feet of road ditch, non-agricultural grass waterway, or other non-agricultural land area where drainage occurs in an open channel; NOTE: see S.11(5)

(f) Other land development activities, including access drives, that the administering authority determines have a significant impact.

(g) Construction of any structure greater than 1000 square feet

(h) Construction of any addition to a structure greater than 1000 square feet

(i) Construction of multiple additions and/ or structures where the total area combined is greater than 1000 square feet

(2) **EROSION AND OTHER POLLUTANT CONTROL REQUIREMENTS.** An erosion control plan shall ensure, to the extent practical, that soil erosion, siltation, sedimentation, and other offsite impacts from land-disturbing activities are minimized through installation of BMPs pursuant to S.05 of this ordinance. The erosion control plan for permitted sites must incorporate maintenance of existing vegetation, especially adjacent to surface waters whenever possible, minimization of soil compaction and preservation of topsoil, minimization of land disturbing construction activity on slopes of 20% or more and development of spill prevention and response procedures. The BMPs may be located on or off the construction site. In addition, the erosion control plan shall:

(a) BMPs that, by design, achieve to the maximum extent practicable, a maxiumum discharge of 5 tons per acre per year of sediment. No person shall be required to exceed a 5 tons per acre per year discharge to meet the requirements of this paragraph. Erosion and sediment control BMPs may be used alone or in combination to meet the requirements of this paragraph. Credit toward meeting the sediment reduction shall be given for limiting the duration or area, or both, of land disturbing construction activity, or other appropriate mechanism.

**Note to Users: Soil loss prediction tools that estimate the sediment load leaving the construction site under varying land and management conditions, or methodology identified in subch. V. of ch. NR 151, Wis. Adm. Code, may be used to calculate sediment reduction.**

(b) Notwithstanding par. (a), if BMPs cannot be designed and implemented to reduce the maximum sediment discharge to 5 tons per acre per year, the plan shall include a written and site-specific explanation as to why the maximum sediment discharge of 5 tons per acre per year is not attainable and the sediment load shall be reduced to the maximum extent practicable

(c) Minimize tracking of sediment from the site onto roads and other paved surfaces. Each site shall have graveled roads, access drives, and parking areas of sufficient width and length to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by cleaning the street, by means other than by flushing, before the end of each workday. Sediment tracked by construction equipment from a site onto a public or private paved road or sidewalk shall be minimized by providing a non-tracking access roadway. The access roadway shall be installed as approved on the plan. The sediment cleanup provisions of (d) below are unaffected by the presence or absence of an access roadway.

(d) Assure proper use, storage and disposal of chemicals, cement, and other compounds used on construction sites. All building material waste shall be properly managed and disposed of to prevent pollutants and debris from being carried off site by runoff.

(e) Minimize the discharge of sediment as part of site de-watering. Discharge of sediment as a result of dewatering shall be treated using BMPs.

(f) Provide for the cleanup of sediments deposited on roadways. By the end of the next working day following the occurrence, clean up off-site sediment deposition occurring as a result of a storm event shall be completed. All other off-site sediment deposition occurring as a result of construction activities shall be cleaned up at the end of the workday.

(g) Provide storm sewer inlet protection from sedimentation. All downslope storm sewer inlets shall be protected from the intake of sedimentation by filter fabric, hay-type bales, or other suitable measures as may be approved.

(h) Erosion Control practices shall remain in place until final site stabilization has occurred, the administering authority has approved the stabilization and authorized the removal of the erosion control practices.

**S. 11 PERMIT - APPLICATION, EROSION AND SEDIMENT CONTROL PLAN, AND PERMIT ISSUANCE**

No landowner or land user may commence a land-disturbing construction activity subject to this ordinance without receiving prior approval of an erosion and sediment control plan for the site and a permit from the administering authority. At least one landowner or land user controlling or using the site and desiring to undertake a land-disturbing construction activity subject to this ordinance shall submit an application for a permit and an erosion and sediment control plan and pay an application fee. By submitting an application, the applicant is authorizing the administering

authority to enter the site to obtain information required for the review of the erosion and sediment control plan, to inspect the property for permit compliance, and to authorize permanent on-site inspection authority for the duration of the permitted activity.

(1) **CONTENT OF THE EROSION AND SEDIMENT CONTROL PLAN FOR LAND DISTURBING CONSTRUCTION ACTIVITIES COVERING ONE OR MORE ACRES.**

(a) The erosion and sediment control plan shall be prepared in accordance with good engineering practices and the design criteria, standards and specifications outlined in the Wisconsin DNR's Stormwater Construction technical standards.

(b) The erosion and sediment control plan shall address pollution caused by soil erosion and sedimentation during construction and up to final stabilization of the site. The erosion and sediment control plan shall include, at a minimum, the following items. Other information may be required as needed by the permitting authority:

(1) Description of the site and the nature of the construction activity, including representation of the limits of land disturbance on a Winnebago County G.I.S. Map.

(2) Description of the intended sequence of major activities that disturb soils for major portions of the site, such as grubbing, excavation or grading.

(3) Estimates of the total area of the site and the total area of the site that is expected to be disturbed by construction activities.

(4) Existing data describing the surface soil as well as subsoils.

(5) Depth to groundwater, as indicated by natural resources conservation service soil information where available.

(c) The erosion and sediment control plan shall include a site map. The site map shall include the following items and shall be at a scale not greater than 100 feet per inch and at a contour interval not to exceed two feet:

(1) Existing topography, vegetative cover, natural and engineered drainage systems, roads and surface waters. Lakes, streams, wetlands, channels, ditches and other watercourses on and immediately adjacent to the site shall be shown. Any identified 100-year flood plains, flood fringes and flood ways shall also be shown.

(2) Boundaries of the construction site.

(3) Drainage patterns and approximate slopes anticipated after major grading activities.

(4) Areas of soil disturbance.

(5) Location of structural and non-structural BMPs identified in the plan.

(6) Location of areas where stabilization practices will be employed.

(7) Areas that will be vegetated following construction.

(8) Area extent of wetland acreage on the site and locations where storm water is discharged to a surface water or wetland.

(9) Locations of all surface waters and mapped wetlands within one mile of the construction site.

(10) Any other features required by the administering authority for a proper evaluation of the site.

(d) Each erosion and sediment control plan shall include a plan view sheet and a description of appropriate controls and measures that will be performed at the site to prevent pollutants from reaching waters of the state. The plan shall be at the same scale as the existing site map and shall clearly show the site changes. The plan shall clearly describe the appropriate control measures for each major activity and the timing during the construction process when the measures will be implemented. The description of erosion controls shall include, when appropriate, the following minimum requirements:

(1) Description of interim and permanent stabilization practices, including a practice implementation schedule. Site plans shall ensure that existing vegetation is preserved where attainable and that disturbed portions of the site are stabilized.

(2) Description of structural practices to divert flow away from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from the site.

(3) Management of overland flow at all sites, unless otherwise controlled by outfall controls.

(4) Trapping of sediment in channelized flow.

(5) Staging construction to limit bare areas subject to erosion.

(6) Protection of down slope drainage inlets where hey occur.

(7) Minimization of tracking at all sites.

(8) Clean up of off-site sediment deposits.

(9) Proper disposal of building and waste materials at all sites.

(10) Stabilization of drainage ways.

(11) Control of erosion from soil stockpiles.

(12) Installation of permanent stabilization practices as soon as possible after final grading.

(13) Minimization of dust to the extent practical.

(e) Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive flow from the structure to a watercourse so that the natural physical and biological characteristics and functions are maintained and protected.

**Note: The plan requirements of this subsection will meet the plan requirements of Chapter NR 216.46, Wisconsin Admin. Code, when prepared in accordance with good engineering practices and the design criteria, standards and specifications outlined in the most recent Wisconsin DNR publication. This is important for municipalities seeking to develop a "Qualifying Local Program" under phase 2 of the federal storm water permit program. Qualifying local programs will also be required to impose, either through this ordinance or a storm water management ordinance, storm water management plan requirements consistent with Chapter NR 216.47, Wisconsin Admin. Code.**

(2) **CONTENT OF THE EROSION AND SEDIMENT CONTROL PLAN STATEMENT FOR LAND DISTURBING CONSTRUCTION ACTIVITIES COVERING LESS THAN ONE ACRE.** A control plan statement (with simple map) that briefly describes the site and best management practices (including the site development schedule) that will be used to meet the requirements of the ordinance shall be submitted to the administering authority.

(3) **REVIEW OF ALL EROSION AND SEDIMENT CONTROL PLAN.** The administering authority shall review any permit application that is submitted with an erosion and sediment control plan or control plan statement, and the required fee. The following approval procedure shall be used:

(a) Within 30 days of receipt of the application, erosion and sediment control plan or control plan statement, and fee, the administering authority shall review the application and control plan and inform the applicant whether the application is approved, conditionally approved, or disapproved.

(b) If the requirements of this ordinance are met, the administering authority shall issue the permit.

(c) If the conditions are not met, the administering authority shall inform the applicant in writing and may either require additional information or disapprove the plan.

(d) The administering authority may request additional information from the applicant. If additional information is submitted, the administering authority shall have 10 working days from the date the additional information is received to inform the applicant that the application is approved, conditionally approved, or disapproved.

(e) Failure by the administering authority to inform the permit applicant of a decision within the specified number of business days of a required submittal shall be deemed to mean approval of the submittal, and the applicant may proceed as if a permit had been issued. In this instance the applicant shall comply with the plan as submitted.

(4) **PERMITS.**

(a) **DURATION.** Permits issued under this section shall be valid for a period of 1 year from the date of issuance. The administering authority may extend the permit one time for up to an additional 180 days. The administering authority may require additional BMPs as a condition of the extension if they are necessary to meet the requirements of this ordinance.

(b) **FINANCIAL GUARANTEE**. As a condition of approval and issuance of the permit, the administering authority may require the applicant to submit a financial guarantee, the form, and type of which shall be acceptable to the administering authority. The financial guarantee shall be in an amount determined by the administering authority to be the estimated cost of implementing the approved erosion control plan and any permit conditions for the duration of the construction activity and until final site stabilization.

(c) **RELEASE OF FINANCIAL GUARANTEE**. The administering authority shall release the portion of the financial guarantee established under this section, less any cost incurred by the administering authority to implement erosion control measures, following the final site stabilization and verification of said stabilization by the administering authority.

(d) Permit conditions. All permits shall require the permittee to:

(1) Notify the administering authority within 3 days of commencing any land disturbing construction activity.

(2) Notify the administering authority of completion of any BMPs within 3 days after their installation.

(3) Obtain permission in writing from the administering authority prior to modifying the erosion and sediment control plan

(4) Install all BMPs as identified in the approved erosion and sediment control plan;

(5) Maintain all road drainage systems, stormwater drainage systems, BMPs and other facilities identified in the erosion and sediment control plan.

(6) Repair any siltation or erosion damage to adjoining surfaces and drainage ways resulting from land disturbing construction activities and document repairs in a site erosion control log.

(7) Inspect the BMPs after each rain of 0.5 inches or more and at least once each week, make needed repairs and document the findings of the inspections in a site erosion control log with the date of inspection and the name of the person conducting the inspection.

(8) Allow the administering authority to enter the site for the purpose of inspecting compliance with the erosion and sediment control plan or for performing any work necessary to bring the site into compliance with the control plan;

(9) Keep a copy of the erosion and sediment control plan at the construction site; and

(10) Notify the administering authority upon completion of construction phase of a project and that the final site stabilization is in place.

(5) **GENERAL PERMITS FOR MUNICIPAL MAINTENANCE OF PUBLIC ROAD DITCHES AND PRIVATE UTILITY WORK PROJECTS**

General permits may be issued by the [administering authority] to a municipality for road ditch maintenance along public roads and to private utilities for utility maintenance and siting . The following conditions apply to the issuing of general permits for these purposes:

(a) General permits may only be issued for a one year period. Road ditch maintenance and utility work shall only take place during the period between April 1 and September 1. After September 1, work must be approved on a case by case basis by the [administering authority]. Permit fees for utility work may differ from those charged per S.08 of this ordinance as determined by the administering authority. No permit fees shall be charged for road ditch maintenance.

(b) A list of planned road ditch maintenance and utility work must be provided to the administering authority no less than 10 business days prior to work.

(c) Listed sites must be accompanied with an erosion control plan. The erosion control plan may include generic erosion control practices that are applicable to the proposal.

(d) The erosion control plan must incorporate erosion control measures for road ditch maintenance and utility work, and be designed using criteria defined in the current edition of Wisconsin Department of Transportation *Facilities Development Manual*.

**S. 12 INSPECTION**

(1) The administering authority shall inspect any construction site that holds a permit under S. 11 at least once a month during the period starting March l and ending October 31 and at least twice during the period starting November 1 and ending February 28 to ensure compliance with the approved sediment and erosion control plan.

(2) If land-disturbing construction activities are being carried out without a permit required by this ordinance, the administering authority may enter the land pursuant to the provisions of ss. 66.0119, Wisconsin Statutes.

# WINNEBAGO COUNTY EROSION CONTROL and STORMWATER MANAGEMENT APPLICATION FORM

Zoning: (920) 232-3344  112 Otter Ave., PO Box 2808, Oshkosh WI 54903-2808

## OWNER

Name _____

Address _____

City _____ State _____ Zip _____

Telephone Home ( _____ ) _____

Cell ( _____ ) _____

E-mail _____

## TYPE OF REQUEST

**Erosion Control**

General Permit
(Municipality/Utility)

Single Lot Development

**Stormwater Permit**

Commercial

Industrial

Subdivision

## Project Start Date

_____

## Estimated End Date

_____

(This time frame should include the completed landscaping)

SEND PERMIT TO: ☐ Owner by: ☐ E-mail ☐ Mail  ☐ Applicant by: ☐ E-mail ☐ Mail

## APPLICANT

Name/Co. _____

Address _____

City _____ State _____ Zip _____

Telephone Home ( _____ ) _____

Cell ( _____ ) _____

E-Mail _____

## SITE LOCATION

Address _____

**Parcel No.** _____ Town of _____

Plat/CSM _____

Lot # _____ Lot Size _____ Sec _____ T _____ R _____

**Describe type of proposed project (new home, shed, etc.), work to be done and provide a description and location of erosion control measures.**

**(Site plan must include setbacks and all dimensions of the building/project - see attached instructions)**

## APPLICANT/OWNER ACKNOWLEDGEMENT

FAILURE TO PROVIDE ALL REQUIRED MATERIALS AND INFORMATION COULD RESULT IN THE REVIEW OF THIS APPLICATION BEING DELAYED FOR CONSIDERATION:

☐ For new home construction, the Winnebago County Zoning Dept. must be contacted for an inspection, *within **one business day** of initial disturbance of land*, at **(920) 232-3344** OR by email to: zoningdepartment@co.winnebago.wi.us.

☐ I understand that the conditions of the permit are minimum requirements and that, upon site inspection further measures may be required for compliance within the ordinance.

☐ I understand that all required erosion control measures shall be maintained as described in the permit plan until the Winnebago County Zoning Dept. approves their removal.

☐ I further grant the right-of-entry to the property, as described under "Site Location", to personnel designated by the County, for the purpose of inspecting and monitoring compliance with the ordinance(s).

☐ I have reviewed *Section 23.15 of the Winnebago County Zoning Ordinance* regarding erosion control & stormwater management and agree to comply with the requirements of the ordinance.

☐ In accordance with Wisconsin State Statute 59.691, the information provided herein is to give you notice regarding potential wetlands. You are responsible for complying with state and federal laws concerning construction near or on wetlands, lakes, and streams. Wetlands that are not associated with open waters can be difficult to identify. Failure to comply may result in removal or modification of construction that violates the law or other penalties or costs. For more information, visit the Department of Natural Resources Wetland Identification web page at: http://dnr.wi.gov/topic/surfacewater/swdv/ or contact your local DNR office. As the applicant, I hereby acknowledge notice of this wetland information.

_____ Date: _____

**ORIGINAL INK** Signature of Owner/Applicant/Agent

## OFFICE USE ONLY

Fee Recv'd $ _____ Date _____ Permit # _____

Type _____ Issued Date _____

Issued by: _____

06/20

Complete and PRINT form. Submit application with **ORIGINAL INK SIGNATURE, SITE PLAN** and fees to our office in person or by mail. **DO NOT E-MAIL**

**The following must be included on your site plan:**

- All existing structures
- All proposed structures
- All setbacks
- Drainage arrows
- Proposed measures for erosion control
  - silt fence
  - silt sock
  - vegetative buffer – 25ft minimum
- Placement of the above items for erosion control

You may use the same site plan when submitting applications for both a zoning and an erosion control permit provided they indicate the following:

- All existing structures
- All proposed structures
- All setbacks
- All dimensions
- Drainage arrows
- Erosion control (what/where)

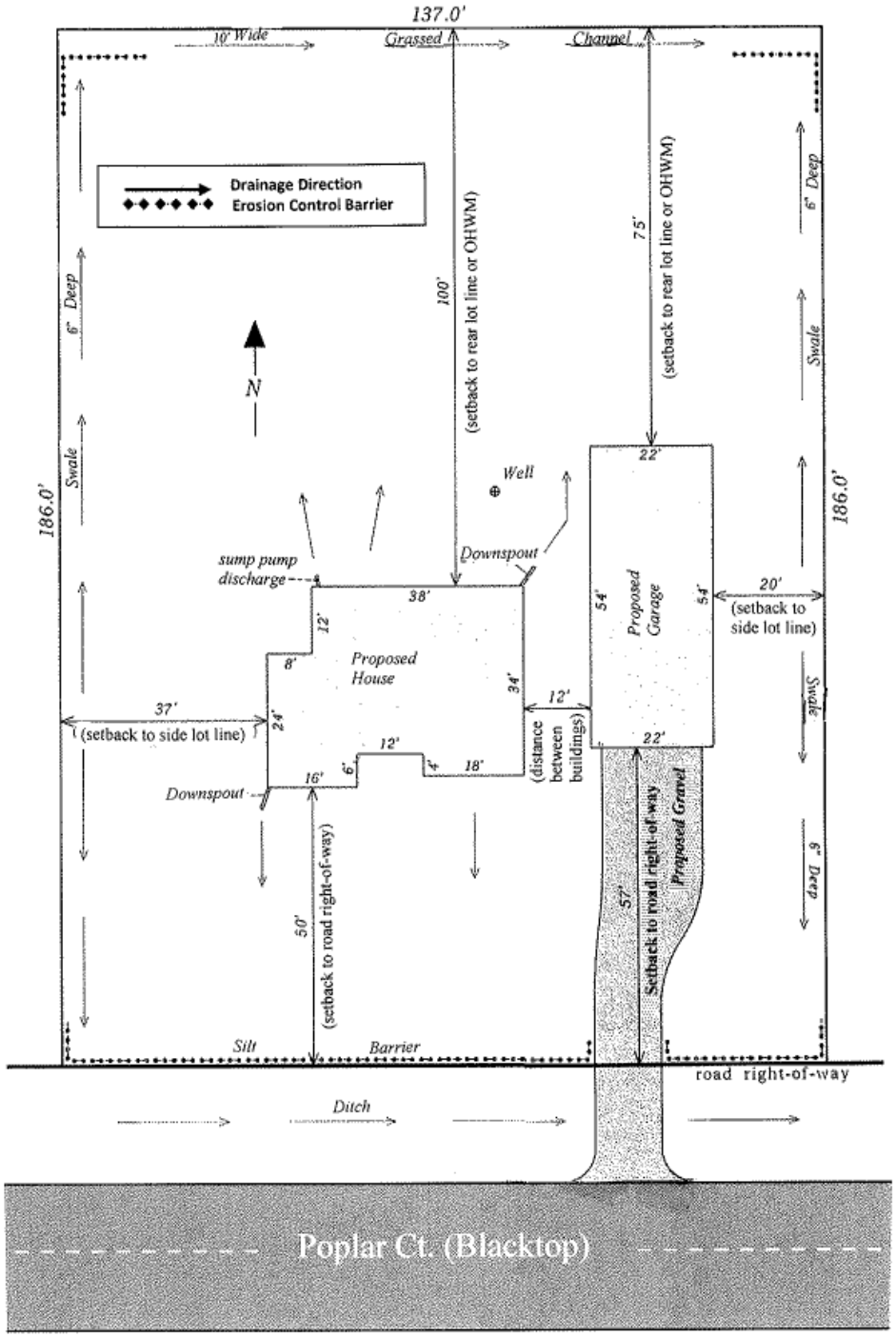
You can print a GIS map of your property at the following link:
(please do not use the aerial view for your site plan)

https://wcgis3.co.winnebago.wi.us/parcelviewer


Winnebago County Zoning Department
PO Box 2808 ▪ 112 Otter Ave, 3rd Floor
Oshkosh WI 54903-2808
920-232-3344


**Important:** it is your responsibility to contact your Township to determine if other permits are required.

# SAMPLE SITE PLAN
## EROSION CONTROL & DRAINAGE



6085 County Road T
Oshkosh, WI 54904
Phone: 920.235.6953

# INFORMATION SUBMITTED BY THE PUBLIC

| **Complaint Submitted By:** | | |
|---|---|---|
| Name: ☐ Anonymous | | Date: |
| Address: | | |
| Telephone: | E-Mail: | |
| Should we contact you? ☐ Yes ☐ No | | |
| **Location of Complaint:** | | |
| Site Name (Project): | | Construction Site ID No: |
| Address / Location: | | |
| Landowner Name: | | |

**Description of Complaint:** (check all that apply)

| | |
|---|---|
| ☐ Automobiles (fluid leak, car washing) | ☐ Storm Water Management (flooding, pond maintenance) |
| ☐ Pet Waste | ☐ Illicit Discharge (spill / hazardous material) |
| ☐ Household Hazardous Waste (dumping) | ☐ Illicit Discharge (improper waste disposal) |
| ☐ Household Practices (garbage, recycling) | ☐ Illicit Discharge (dry weather flow / discharge) |
| ☐ Fertilizers & Pesticides | ☐ Illicit Discharge (illegal plumbing connection) |
| ☐ Leaves & Grass Clippings | ☐ Illicit Discharge (failing lateral / septic system) |
| ☐ Stream & Shoreline Management (erosion) | ☐ Street Sweeping / Catch Basin Cleaning |
| ☐ Residential (downspouts, sump pump) | ☐ Municipal Road Salt & Other Deicers |
| ☐ Construction Site Erosion Control | ☐ Other: _____ |

Describe complaint:

**Description of Follow-Up Actions:**

Describe follow-up actions:

# APPENDIX G

**Post-Construction Stormwater Management**

**ARTICLE 15**

**TOWN/COUNTY ZONING ORDINANCE 23.15**

## 23.15 WINNEBAGO COUNTY CONSTRUCTION SITE EROSION CONTROL AND STORMWATER MANAGEMENT ORDINANCE

AN ORDINANCE TO CREATE CHAPTER 23.15, SECTION A, OF THE GENERAL CODE OF THE COUNTY OF WINNEBAGO RELATING TO THE CONTROL OF CONSTRUCTION SITE EROSION AND SECTION B OF THE GENERAL CODE OF THE COUNTY OF WINNEBAGO RELATING TO THE CONTROL OF STORM WATER RUNOFF FROM LAND DEVELOPMENT AND LAND REDEVELOPMENT

The Winnebago County Board does hereby ordain that Chapter 23.15, Section A and Section B are created to read as follows:

**Sections**



### S.ii GENERAL SECTION PROVISIONS

(1) Although Section 23.15 may be printed, and/or used as a separate ordinance, it is part of the Winnebago County Town/County Zoning Ordinance and provisions of other sections not in conflict with this section remain applicable.

(2) This Ordinance shall be in force and effect upon the date following its date of publication.

(3) Where a permit may be required under either Section A, or Section B, or both, the administering authority shall determine whether a separate or combined permit shall be required.

(4) Any permit required by this section shall be issued prior to the issuance of any other zoning permit, building permit, or sanitary permit.

(5) Intergovernmental agreements pursuant to State Statutes regarding the administration of this ordinance may be approved by the Winnebago County Board of Supervisors provided (a) that the prospective administering body has an ordinance at least as restrictive as this ordinance as determined by Winnebago County, and/or (b) that the prospective administering body provides satisfactory evidence, as determined by Winnebago County, to Winnebago County of an ability to administer this ordinance, or an equally restrictive ordinance. Evidence of "an ability to administer" may include contractual arrangements, and shall also provide that a contractual or employment arrangement prohibits a contractor or employee from reviewing their own work.

### S. 01 AUTHORITY

This ordinance is adopted by the Winnebago County Board under the authority granted by S. 59.693, S 101.65(1)(a) and S. 101.651(3m), and S. 101.653, Wisconsin Statutes. This ordinance supersedes all conflicting and contradictory storm water management regulations previously enacted under S. 59.69 and S. 236 Wisconsin Statutes. Except as specifically provided for in S. 59.693, Wisconsin Statutes, S. 59.69 and 59.99, Wisconsin Statutes applies to this ordinance and to any amendments to this ordinance.

(1) The provisions of this ordinance are deemed not to limit any other lawful regulatory powers of the Winnebago County Board of Supervisors.

(2) The Winnebago County Board hereby designates the Planning & Zoning Committee to administer and enforce the provisions of this ordinance.

(3) The requirements of this ordinance do not pre-empt more stringent storm water management requirements that may be imposed by any of the following:

(a) Department of Natural Resources administrative rules, permits or approvals including, but not limited to those authorized under S. 283.33 Wisconsin Statutes.

(b) Targeted non-agricultural performance standards promulgated in rules by the Department of Natural Resources under Chapter NR 151, Wisconsin Admin. Code.

(c) Technical standards for implementing non-agricultural performance standards developed by the Department of Natural Resources under Chapter NR 151, Wisconsin Admin. Code.

**S. 02 FINDINGS, PURPOSE and INTENT**

**FINDINGS**

The Winnebago County Board of Supervisors finds that runoff from land-disturbing construction activity carries a significant amount of sediment and other pollutants to the waters of the State and Winnebago County; and,

Further finds that uncontrolled storm water runoff from land development and land redevelopment activity has a significant impact upon water resources and the health, safety and general welfare of the community, and diminishes the public enjoyment and use of natural resources. Specifically, uncontrolled storm water runoff can:

(1) Degrade physical stream habitat by increasing stream bank erosion, increasing streambed scour, diminishing groundwater recharge, diminishing stream base flows and increasing stream temperature;

(2) Diminish the capacity of lakes and streams to support fish, aquatic life, recreational and water supply uses by increasing loadings of sediment, suspended solids, nutrients, heavy metals, bacteria, pathogens and other urban pollutants;

(3) Alter wetland communities by changing wetland hydrology and by increasing pollutant loads;

(4) Reduce the quality of groundwater by increasing pollutant loading;

(5) Threaten public health, safety, property, and general welfare by overtaxing storm sewers, watercourses, and other minor drainage facilities;

(6) Threaten public health, safety, property, and general welfare by increasing major flood peaks and volumes; and,

(7) Undermine floodplain management efforts by increasing the incidence and levels of flooding.

**PURPOSE**

(1) It is the purpose of Section A of the ordinance to preserve natural resources; to protect the quality of the waters of the State and the County; and to protect and promote the health, safety and welfare of the people, to the extent practical, by minimizing the amount of sediment and other pollutants carried by runoff or discharge from land disturbing construction activity to lakes, streams and wetlands; and,

(2) It is the purpose of section B of the ordinance is to set forth long-term, post-construction storm water requirements and criteria which will diminish the threats to public health, safety, welfare, and the aquatic environment due to runoff of storm water from land development and land redevelopment activity. The specific purposes of this section of the ordinance are to:

(a) Further the maintenance of safe and healthful conditions of the land and water resources of the County;

(b) Prevent and control the adverse effects of storm water, prevent and control soil erosion, prevent and control water pollution, and protect spawning grounds, fish, and aquatic life;

(c) Control exceedance of the safe capacity of existing drainage facilities and receiving water bodies; prevent undue channel erosion; control increases in the scouring and transportation of particulate matter; prevent conditions that endanger downstream property;

(d) Control building sites, placement of structures, and land uses, and promote sound economic growth.

**INTENT**

It is the intent of the Winnebago County Board of Supervisors that this ordinance manages the long-term, post-construction storm water discharges from land development and land redevelopment activities.

**S. 03 APPLICABILITY OF ORDINANCE**

This ordinance applies to land-disturbing construction activity, new land development, and all land redevelopment activity located within the boundaries and jurisdiction of the unincorporated portion of Winnebago County. The provisions of Section B do not apply to agricultural activity as defined herein. Any area affected by the provisions of this ordinance shall not be exempt from applicability by reason of annexation or incorporation unless the annexing or incorporating municipality maintains and enforces an ordinance that is equally restrictive as this ordinance in accordance with the provisions of S. 59.693(10), Wisconsin Statues.

MAPS. Where any map is referred to in this ordinance and said map is a digital compilation within the Winnebago County Geographic Information System (WINGS), said digital map shall be the regulatory map for purposes of enforcement of this ordinance.

**S. 04 FEE SCHEDULE / FINANCIAL GUARANTEE**

(a) The fees referred to in other sections of this ordinance shall be established by Winnebago County Board of Supervisors and may from time to time be modified by resolution. All "after the fact" fees shall be doubled.

(b) Where more than one permit is required, the permittee shall be required to pay the amount required for each permit.

(c) The financial guarantees referred to in other sections of the ordinance are in addition to permit fees and required escrow amounts and shall be as determined within the applicable section. If a financial guarantee is required in more than one section, the administering authority shall determine the total amount of the required guarantee, whether as a single or combined amount.

**S. 05 ENFORCEMENT**

(1) Any land-disturbing construction activity, land development, or land redevelopment activity, hereinafter activity, initiated after the effective date of this ordinance by any person, firm, association, or corporation subject to the ordinance provisions shall be deemed a violation unless conducted in accordance with the requirements of this ordinance. The term violation includes without limitation due to enumeration such things as failure to obtain a permit where required, failure to implement approved plans in a good faith manner, failure to comply with conditions of a permit issued, or failure to cease activity as required in a stop-work order posted under this ordinance.

(2) The administering authority shall notify the responsible owner or operator by certified mail of any non-complying activity. The notice shall describe the nature of the violation, remedial actions needed, a schedule for remedial action, and additional enforcement action that may be taken.

(3) Upon receipt of written notification from the administering authority under subsection (2), the permit holder, or landowner, shall obtain a permit where required, and/or correct work which does not comply with an approved plan or other provisions of a permit. The permit holder, or landowner, shall make corrections as necessary to meet the specifications and schedules set forth by the administering authority in the notice.

(4) (a) The administering authority is authorized to post a stop work order on all activity in violation of this ordinance. When such a stop work order has been posted, it shall have the effect of causing the original permit to be revoked and in all cases, it shall be unlawful for any further work to proceed until the permit is either issued or reinstated. . It shall further be unlawful to remove such stop work order without the direct authorization of the administering authority.

(b) After posting a stop-work order, the administering authority may issue a notice of intent to the permittee or landowner or land user of its intent to perform work necessary to comply with this ordinance. The administering authority may then go on the land and commence the work. The costs of the work

performed by the administering authority, plus interest at the rate authorized by administering authority shall be billed to the permittee or the landowner. Where the violation of the ordinance is likely to result in damage to properties, public facilities, or waters of the state, and after issuing the notice of intent, the administering authority may enter the land and take emergency actions necessary to prevent such damage, and bill such work in the manner previously described.

(c) In the event a permittee or landowner fails to pay the amount due, the clerk shall enter the amount due on the tax rolls and collect the amount plus any interest thereupon as a special charge against the property pursuant to Section 66.60(16), Wisconsin Statutes.

(5) The administering authority may revoke a permit issued under this ordinance for noncompliance with ordinance provisions.

(6) Any permit revocation, stop work order, or cease and desist order shall remain in effect unless retracted by the administering authority or by a court with jurisdiction.

(7) If the landowner or land user where no permit has been issued does not cease the activity after being notified by the administering authority or if a landowner violates a stop-work order posed under sub. (1), the administering authority is authorized to refer any violation of this ordinance, or of a stop work order or cease and desist order issued pursuant to this ordinance to the Corporation Counsel to obtain a cease and desist order or to commence further legal proceedings in any court with jurisdiction.

(8) Any person, firm, association, or corporation who does not comply with the provisions of this ordinance, or fails to cease activity as required in a stop-work order posted under this section, or fails to comply with any approved plan or permit, shall be subject to a forfeiture of not less than [500] dollars nor more than [1,000] dollars per offense, together with the costs of prosecution. Every violation of this ordinance is a public nuisance and each day that the violation exists shall constitute a separate offense.

(9) Compliance with this ordinance may be enforced by injunctional order by Winnebago County pursuant to S. 59.69(11), Wisconsin Statutes. It shall not be necessary to prosecute for forfeiture or a cease and desist order before resorting to injunctional proceedings.

**S.06 APPEALS**

An appeal to the provisions of Section 23.15 shall be done in accordance with the provisions of Section 23, Winnebago County Town/County Zoning Ordinance.

**S. 07 DEFINITIONS**

(1) **"Administering authority"** means the governmental employees or their designees empowered under S. 59.693, Wisconsin Statutes to administer this ordinance. For the purpose of this ordinance the administering authority is the Planning and Zoning Department under guidance from the Planning and Zoning Committee.

(2) **"Agricultural activity"** means planting, growing, cultivating and harvesting of crops for human or livestock consumption, the pasturing or yarding of livestock, sod farms and tree nurseries. For the purposes of Section A, Erosion Control, the term also includes tiling, and construction or expansion of facilities related to normal activities performed as part of a farming operation, i.e., only those facilities for which erosion control is addressed by Chapter 13, County Code.

(3) **"Best management practice" or "BMP"** means a practice, technique or measure which is determined to be an effective means by the Planning & Zoning Department of preventing or reducing runoff pollutants to waters of the state, to a level compatible with the performance standards in S. 15 and the pollution control requirements in S. 10(2) of this ordinance.

(4) **"Business day"** means a day the office of the Planning & Zoning Department is routinely and customarily open for business.

(5) **"Cease and desist order"** means a court-issued order to halt land development and land redevelopment activity that is being conducted without the required permit.

(6) **"Common plan of development or sale"** means an area where multiple separate and distinct land developing activities may be taking place at different times on different schedules but under one plan.

(7) **"Construction site"** means an area upon which one or more land-disturbing construction activities are occurring, including areas that are part of a larger common plan of development or sale where multiple separate and distinct land-disturbing construction activities may be taking place at different times on different schedules but under one plan.

(8) "**Design storm"** means a hypothetical discrete rainstorm characterized by a specific duration, temporal distribution, rainfall intensity, return frequency and total rainfall depth.

(9) **"Detention Pond"** means a depression in the land surface designed to temporarily detain or hold back storm water and release the water at a specified flow rate or rates. A detention pond may also be designed to reduce nonpoint source pollution.

(10) **"De-watering"** means any process, including pumping or ditching, by which excess water is removed from a site as part of the construction process.

(11) **"Discharge volume"** means the quantity of runoff discharged from the land surface as the result of a rainfall event.

(12) **"DSPS"** means the Department of Safety and Professional Services.

(13) **"Erosion**" means the detachment and movement of soil, sediment or rock fragments by water, wind, ice, or gravity.

(14) **"Erosion and sediment control plan"** means a comprehensive plan developed to address pollution caused by soil erosion and sedimentation during construction.

(15) **"Extent practical"** means a level of implementing best management practices in order to achieve a performance standard, which takes into account the best available technology, cost effectiveness and the degree, or extent to which best management practices can be implemented. Extent practical allows flexibility in the means to meet the performance standards and will vary based upon the performance standard and site conditions.

(16) **"Extra-territorial"** means the unincorporated area within 3 miles of the corporate limits of a first, second, or third class city, or within 1½ miles of a fourth class city or village.

(17) **"Final stabilization"** means the completion of all land disturbing construction activities at a construction site and that a perennial vegetative cover has been established throughout the construction site with a density of 70% of the cover for the unpaved areas and areas not covered by permanent structures. If a perennial vegetative cover has not been used, an equivalent permanent stabilization measure must have been approved for use by the administering authority and installed as required.

(18) **"Financial guarantee"** means a performance bond, maintenance bond, surety bond, irrevocable letter of credit, or similar guarantees submitted by the permit holder to the administering authority, in an amount and format approved by the administering authority, to assure that requirements of the ordinance are carried out in compliance with the storm water management plan.

(19) **"Impervious surface"** means a land cover that releases as runoff all or a large portion of the precipitation that falls on it. Rooftops, sidewalks, driveways, parking lots, gravel, and streets are examples of surfaces that typically are impervious.

(20) **"Infiltration"** means the process by which rainfall or surface runoff passes into or through the underlying soil.

(21) **"Land development activity"** means the act or process of changing land through the construction of buildings, parking lots, roads, landscaping, etc. which causes a change in the amount, rate, or quality of storm water runoff from the land.

(22) **"Land disturbing construction activity"** means any man-made disturbance of the land surface resulting in a change in the topography, existing vegetative and non-vegetative soil cover or the existing soil topography which may result in storm water runoff and lead to increased soil erosion and movement of sediment into waters of the state. Land-disturbing construction activity includes, but is not limited to clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities, but does not include agricultural or silviculture activities. Specific applicability is noted at S.10(1).

(23) **"Landowner"** means any person holding title to land.

(24) **"Land user"** means any person operating, leasing, renting, or having made other arrangements with the landowner by which the landowner authorizes use of his or her land.

(25) **"Maintenance agreement"** means a legal document that is filed with the County Register of Deeds as a property deed restriction, and which provides for long-term maintenance of storm water management practices.

(26) **"Municipal storm sewerage facility"** means catch basins, storm sewer pipes, pumps, and lift stations.

(27) **"Municipality"** means a town, county, village, or city.

(28) **"Non-domestic agricultural structure"** means a building or impervious surface designed to store machinery and/or harvested crops in any form, including machine sheds, grain bins, and silage pads. This definition does not include vertical silos, dairy barns, or any other building categorized as an "animal lot" as defined in the Livestock Waste Management Ordinance, Chapter 13, Winnebago County General Code.

(29) **"Non-storm discharge"** means a discharge to the storm sewer system created by some process other than storm water runoff.

(30) **"Non-structural measure"** means a practice, technique, or measure to reduce the volume, peak flow rate, or pollutants in storm water that does not require the design or installation of fixed storm water management facilities.

(31) **"Off-site"** means located outside the property boundary described in the permit application for land development or land redevelopment activity.

(32) **"Other than residential development"** means development that is not one or two family residential. This includes the following land uses: multi-family residential (more than 2 dwelling units on a single property) commercial, industrial, government and institutional, recreation, transportation, communication, and utilities, and the construction or expansion of facilities related to normal activities performed as part of a farming operation including but not limited to buildings, paved areas, etc.

(33) **"On-site"** means located within the property boundary described in the permit application for the land development or land redevelopment activity including the entire area of the tax parcel wherein the activity will occur.

(34) **"P8" (Program for Predicting Polluting Particle Passage through Pits, Puddles & Ponds)** means a model for predicting the generation and transport of stormwater runoff pollutants in urban watersheds.

(35) **"Peak flow discharge rate"** means the maximum unit volume of storm water discharged during a specified unit of time. Atlas 14 rainfall intensities with appropriate MSE3 or MSE4 rainfall distribution shall be used for peak flow calculations.

(36) **"Performance standard"** means a measurable number or measurable narrative for a pollution source specifying the acceptable outcome for a facility or practice.

(37) **"Permit**" means a written authorization made by the administering authority to the applicant to conduct land development or land redevelopment activities.

(38) **"Permit administration fee"** means a sum of money paid to the administering authority by the permit applicant for the purpose of recouping the expenses incurred by the authority in administering the permit, including but not limited to application review, issuance where appropriate, and inspections.

(39) **"Pervious surface"** means a surface that infiltrates rainfall. Lawns, fields and woodlands are examples of pervious surfaces.

(40) **Post-construction storm water discharge"** means any storm water discharged from a site following the completion of land disturbing construction activity and final site stabilization.

(41) **"Post-development condition"** means the extent and distribution of land cover types anticipated to occur under conditions of full development, which will influence storm water runoff and infiltration.

(42) **"Pre-development condition"** means the extent and distribution of land cover types present before the initiation of land development or land redevelopment activity.

(43) **"Redevelopment"** means new development that is replacing older development. Redevelopment in this ordinance only applies when the activity will increase the impervious area or projects requiring an NOI that was filed on or after January 1, 2011.

(44) **"Right-of-way"** means the area of a road within which the ditch, shoulder, and paved area are located. The right-of-way distance may be as defined or dedicated on a plat, certified survey map, or other recorded instrument.

(45) **"Road"** means a public or private right-of-way of a street, road, highway land, access easement, etc., which provides access to more than one parcel or principal structure.

(46) **"Road Construction"** includes all construction-type activities occurring within the road right-of-way, including without limitation such things as shouldering, ditching, etc..

(47) **"Runoff"** means the rainfall, snowmelt, or irrigation water flowing over the ground surface.

(48) "**Single lot activity:** a stormwater plan for a land development activity on a single lot where a lesser degree of detail may be required for review. The plan will normally not require engineering data. Also known commonly as a single lot drainage plan.

(49) **"Site"** means the entire area included in the legal description of the land upon which the land- disturbing construction activity is proposed in the permit application and further includes the entire tax parcel and deed area affected.

(50) **"Site restriction"** means any physical characteristic, which limits the use of a storm water best management practice or management measure.

(51) **"SLAMM"** means Source Loading and Management Model, a stormwater evaluation technique, developed for the Environmental Protection Agency (EPA), and used to evaluate the effectiveness of stormwater control.

(52) **"Stop work order"** means an order issued by the administering authority that requires that all construction activity on the site be stopped.

(53) **"Storm water management plan"** means a document that identifies what actions must be taken to reduce storm water quantity and pollutant loads from land development and land redevelopment activity to levels that meet the purpose and intent of this ordinance.

(54) **"Storm water management system plan"** is a comprehensive plan developed to address storm water drainage and nonpoint source pollution control problems on a watershed or sub-watershed basis, and which meets the purpose and intent of this ordinance.

(55) **"Storm water runoff"** means that portion of the precipitation falling during a rainfall event, or that portion of snowmelt, that runs off the surface of the land and into the natural or artificial conveyance or drainage network.

(56) **"Structure",** as used in the context of construction or building, means any manmade object with form, shape and utility, either permanently or temporarily attached to, placed upon or set into the ground which includes but is not limited to such objects as roofed and/or walled buildings, non-domestic agricultural structures, storage tanks, bridges, culverts, etc. and may include such things as fences or signs. The term also includes fill or filling which is the act by which earth, sand, gravel, rock or any other material is deposited, placed, replaced, pushed, dumped, pulled, transported or moved by man to a new location and shall include the conditions resulting there from.

(57) **"Structural measure"** means any physical practice or conveyance measures and end-of-pipe treatment that are designed to control storm water runoff pollutant loads, discharge volumes, and/or peak flow discharge rates.

(58) **"Storm sewer system"** means a conveyance or system of conveyances including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains which is designed for collecting water or conveying storm water.

(59) **"TR-55"** means the United States Department of Agriculture Natural Resources Conservation Service(formerly Soil Conservation Service), Urban Hydrology for Small Watersheds, Second Edition, Technical Release 55, June 1986, which is incorporated by reference for this chapter.

(60) **"Waters of the State"** means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within Wisconsin or its jurisdiction.

(61) **"Watercourse"** means a natural or artificial channel through which water flows and is identified on the official Winnebago County watercourse map, dated January 1, 2002 or subsequent revisions thereto and new channels that are created as part of a development that may not be on the existing map. The term watercourse includes waters of the state as herein defined. Additions or deletions to the map must be field verified by the administering authority. Additionally, when a watercourse is moved, any requirements related to the watercourse move with the water. The watercourse map is on file and maintained by Winnebago County Geographic Information System (WINGS).

(62) **"Watershed"** means an area bounded by a divide in which water drains to a specific point on the land.

(63) **"Wetland functional value"** means the type, quality, and significance of the ecological and cultural benefits provided by wetland resources, such as: flood storage, water quality protection, groundwater recharge and discharge, shoreline protection, fish and wildlife habitat, floral diversity, aesthetics, recreation, and education.

(64) **"Wetlands"** means an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions. These wetlands include but are not limited to natural, mitigated, and restored wetlands. Some wetlands are graphically shown on the DNR Wetland Inventory Maps dated July 5, 1986 or subsequent revisions.

(65) **"WPDES Storm Water Permit**" means a permit issued by the Wisconsin Department of Natural Resources under S. 283.33 Wisconsin Statutes that authorizes the point source discharge of storm water to waters of the state.

## S. 08 DESIGN CRITERIA, STANDARDS AND SPECIFICATIONS FOR BEST MANAGEMENT PRACTICES (BMPs).

### Section A



All BMPs required to comply with this ordinance shall meet the design criteria, standards and specifications for the BMPs based on accepted design criteria, standards and specifications identified in the following documents, or the most recently adopted version thereof, provided that where a provision of this ordinance requires a greater standard or degree of compliance, the provisions of this ordinance shall control:

(1) Wisconsin Storm Water Construction technical standards;

(2) Section IV of the Field Office Technical Guide, published by the USDA-Natural Resources Conservation Service as adopted and maintained by the Winnebago County Land Conservation Committee and Land & Water Conservation Department;

(3) Technical standards developed and disseminated by the Department of Natural Resources under subchapter V of Chapter NR 151, Wisconsin Admin. Code; and

(4) Other technical standards published or adopted by the above noted agencies, the Wisconsin Standards Oversight Council or the Winnebago County Land Conservation Committee and Land & Water Conservation Department.

## S. 09 MAINTENANCE OF BMPs

All BMP measures necessary to meet the requirements of this ordinance shall be maintained by the applicant for a permit issued under S. 11 or subsequent landowner throughout the duration of the construction activities until the site has undergone final stabilization.

## S. 10 CONTROL OF EROSION AND POLLUTANTS DURING LAND DISTURBING CONSTRUCTION ACTIVITY

(a) **GENERAL APPLICABILITY**. These general applicability provisions apply to the following land-disturbing construction activities, excluding that otherwise regulated by the DSPS under Wisconsin Admin. Code SPS 321.125.

(b) Those involving grading, removal of protective ground cover or vegetation, excavation, land filling or other activity affecting a surface area of 4,000 square feet or more;

(c) Those involving excavation or filling or a combination of excavation and filling affecting 400 cubic yards or more of soil, sand, or other excavation or fill material;

(d) Those involving public or private access drives, street, highway, road, or bridge construction, enlargement, relocation or reconstruction longer than 125 feet;

(e) Those involving the laying, repairing, replacing or enlarging of an underground pipe or facility for a continuous distance of 100 feet or more. The term pipe or facility includes, but is not limited to, utilities such as telephone, electric, gas, sanitary, storm water, etc.; NOTE: see S.11(5);

Those involving the construction or reconstruction of a continuous distance of 100 lineal feet of road ditch, non-agricultural grass waterway, or other non-agricultural land area where drainage occurs in an open channel; NOTE: see S.11(5)

(f) Other land development activities, including access drives, that the administering authority determines have a significant impact.

(g) Construction of any structure greater than 1000 square feet

(h) Construction of any addition to a structure greater than 1000 square feet

(i) Construction of multiple additions and/ or structures where the total area combined is greater than 1000 square feet

(2) **EROSION AND OTHER POLLUTANT CONTROL REQUIREMENTS.** An erosion control plan shall ensure, to the extent practical, that soil erosion, siltation, sedimentation, and other offsite impacts from land-disturbing activities are minimized through installation of BMPs pursuant to S.05 of this ordinance. The erosion control plan for permitted sites must incorporate maintenance of existing vegetation, especially adjacent to surface waters whenever possible, minimization of soil compaction and preservation of topsoil, minimization of land disturbing construction activity on slopes of 20% or more and development of spill prevention and response procedures. The BMPs may be located on or off the construction site. In addition, the erosion control plan shall:

(a) BMPs that, by design, achieve to the maximum extent practicable, a maxiumum discharge of 5 tons per acre per year of sediment. No person shall be required to exceed a 5 tons per acre per year discharge to meet the requirements of this paragraph. Erosion and sediment control BMPs may be used alone or in combination to meet the requirements of this paragraph. Credit toward meeting the sediment reduction shall be given for limiting the duration or area, or both, of land disturbing construction activity, or other appropriate mechanism.

**Note to Users: Soil loss prediction tools that estimate the sediment load leaving the construction site under varying land and management conditions, or methodology identified in subch. V. of ch. NR 151, Wis. Adm. Code, may be used to calculate sediment reduction.**

(b) Notwithstanding par. (a), if BMPs cannot be designed and implemented to reduce the maximum sediment discharge to 5 tons per acre per year, the plan shall include a written and site-specific explanation as to why the maximum sediment discharge of 5 tons per acre per year is not attainable and the sediment load shall be reduced to the maximum extent practicable

(c) Minimize tracking of sediment from the site onto roads and other paved surfaces. Each site shall have graveled roads, access drives, and parking areas of sufficient width and length to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by cleaning the street, by means other than by flushing, before the end of each workday. Sediment tracked by construction equipment from a site onto a public or private paved road or sidewalk shall be minimized by providing a non-tracking access roadway. The access roadway shall be installed as approved on the plan. The sediment cleanup provisions of (d) below are unaffected by the presence or absence of an access roadway.

(d) Assure proper use, storage and disposal of chemicals, cement, and other compounds used on construction sites. All building material waste shall be properly managed and disposed of to prevent pollutants and debris from being carried off site by runoff.

(e) Minimize the discharge of sediment as part of site de-watering. Discharge of sediment as a result of dewatering shall be treated using BMPs.

(f) Provide for the cleanup of sediments deposited on roadways. By the end of the next working day following the occurrence, clean up off-site sediment deposition occurring as a result of a storm event shall be completed. All other off-site sediment deposition occurring as a result of construction activities shall be cleaned up at the end of the workday.

(g) Provide storm sewer inlet protection from sedimentation. All downslope storm sewer inlets shall be protected from the intake of sedimentation by filter fabric, hay-type bales, or other suitable measures as may be approved.

(h) Erosion Control practices shall remain in place until final site stabilization has occurred, the administering authority has approved the stabilization and authorized the removal of the erosion control practices.

**S. 11 PERMIT - APPLICATION, EROSION AND SEDIMENT CONTROL PLAN, AND PERMIT ISSUANCE**

No landowner or land user may commence a land-disturbing construction activity subject to this ordinance without receiving prior approval of an erosion and sediment control plan for the site and a permit from the administering authority. At least one landowner or land user controlling or using the site and desiring to undertake a land-disturbing construction activity subject to this ordinance shall submit an application for a permit and an erosion and sediment control plan and pay an application fee. By submitting an application, the applicant is authorizing the administering

authority to enter the site to obtain information required for the review of the erosion and sediment control plan, to inspect the property for permit compliance, and to authorize permanent on-site inspection authority for the duration of the permitted activity.

(1) **CONTENT OF THE EROSION AND SEDIMENT CONTROL PLAN FOR LAND DISTURBING CONSTRUCTION ACTIVITIES COVERING ONE OR MORE ACRES.**

(a) The erosion and sediment control plan shall be prepared in accordance with good engineering practices and the design criteria, standards and specifications outlined in the Wisconsin DNR's Stormwater Construction technical standards.

(b) The erosion and sediment control plan shall address pollution caused by soil erosion and sedimentation during construction and up to final stabilization of the site. The erosion and sediment control plan shall include, at a minimum, the following items. Other information may be required as needed by the permitting authority:

(1) Description of the site and the nature of the construction activity, including representation of the limits of land disturbance on a Winnebago County G.I.S. Map.

(2) Description of the intended sequence of major activities that disturb soils for major portions of the site, such as grubbing, excavation or grading.

(3) Estimates of the total area of the site and the total area of the site that is expected to be disturbed by construction activities.

(4) Existing data describing the surface soil as well as subsoils.

(5) Depth to groundwater, as indicated by natural resources conservation service soil information where available.

(c) The erosion and sediment control plan shall include a site map. The site map shall include the following items and shall be at a scale not greater than 100 feet per inch and at a contour interval not to exceed two feet:

(1) Existing topography, vegetative cover, natural and engineered drainage systems, roads and surface waters. Lakes, streams, wetlands, channels, ditches and other watercourses on and immediately adjacent to the site shall be shown. Any identified 100-year flood plains, flood fringes and flood ways shall also be shown.

(2) Boundaries of the construction site.

(3) Drainage patterns and approximate slopes anticipated after major grading activities.

(4) Areas of soil disturbance.

(5) Location of structural and non-structural BMPs identified in the plan.

(6) Location of areas where stabilization practices will be employed.

(7) Areas that will be vegetated following construction.

(8) Area extent of wetland acreage on the site and locations where storm water is discharged to a surface water or wetland.

(9) Locations of all surface waters and mapped wetlands within one mile of the construction site.

(10) Any other features required by the administering authority for a proper evaluation of the site.

(d) Each erosion and sediment control plan shall include a plan view sheet and a description of appropriate controls and measures that will be performed at the site to prevent pollutants from reaching waters of the state. The plan shall be at the same scale as the existing site map and shall clearly show the site changes. The plan shall clearly describe the appropriate control measures for each major activity and the timing during the construction process when the measures will be implemented. The description of erosion controls shall include, when appropriate, the following minimum requirements:

(1) Description of interim and permanent stabilization practices, including a practice implementation schedule. Site plans shall ensure that existing vegetation is preserved where attainable and that disturbed portions of the site are stabilized.

(2) Description of structural practices to divert flow away from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from the site.

(3) Management of overland flow at all sites, unless otherwise controlled by outfall controls.

(4) Trapping of sediment in channelized flow.

(5) Staging construction to limit bare areas subject to erosion.

(6) Protection of down slope drainage inlets where hey occur.

(7) Minimization of tracking at all sites.

(8) Clean up of off-site sediment deposits.

(9) Proper disposal of building and waste materials at all sites.

(10) Stabilization of drainage ways.

(11) Control of erosion from soil stockpiles.

(12) Installation of permanent stabilization practices as soon as possible after final grading.

(13) Minimization of dust to the extent practical.

(e) Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive flow from the structure to a watercourse so that the natural physical and biological characteristics and functions are maintained and protected.

**Note: The plan requirements of this subsection will meet the plan requirements of Chapter NR 216.46, Wisconsin Admin. Code, when prepared in accordance with good engineering practices and the design criteria, standards and specifications outlined in the most recent Wisconsin DNR publication. This is important for municipalities seeking to develop a "Qualifying Local Program" under phase 2 of the federal storm water permit program. Qualifying local programs will also be required to impose, either through this ordinance or a storm water management ordinance, storm water management plan requirements consistent with Chapter NR 216.47, Wisconsin Admin. Code.**

(2) **CONTENT OF THE EROSION AND SEDIMENT CONTROL PLAN STATEMENT FOR LAND DISTURBING CONSTRUCTION ACTIVITIES COVERING LESS THAN ONE ACRE.** A control plan statement (with simple map) that briefly describes the site and best management practices (including the site development schedule) that will be used to meet the requirements of the ordinance shall be submitted to the administering authority.

(3) **REVIEW OF ALL EROSION AND SEDIMENT CONTROL PLAN.** The administering authority shall review any permit application that is submitted with an erosion and sediment control plan or control plan statement, and the required fee. The following approval procedure shall be used:

(a) Within 30 days of receipt of the application, erosion and sediment control plan or control plan statement, and fee, the administering authority shall review the application and control plan and inform the applicant whether the application is approved, conditionally approved, or disapproved.

(b) If the requirements of this ordinance are met, the administering authority shall issue the permit.

(c) If the conditions are not met, the administering authority shall inform the applicant in writing and may either require additional information or disapprove the plan.

(d) The administering authority may request additional information from the applicant. If additional information is submitted, the administering authority shall have 10 working days from the date the additional information is received to inform the applicant that the application is approved, conditionally approved, or disapproved.

(e) Failure by the administering authority to inform the permit applicant of a decision within the specified number of business days of a required submittal shall be deemed to mean approval of the submittal, and the applicant may proceed as if a permit had been issued. In this instance the applicant shall comply with the plan as submitted.

(4) **PERMITS.**

(a) **DURATION.** Permits issued under this section shall be valid for a period of 1 year from the date of issuance. The administering authority may extend the permit one time for up to an additional 180 days. The administering authority may require additional BMPs as a condition of the extension if they are necessary to meet the requirements of this ordinance.

(b) **FINANCIAL GUARANTEE**. As a condition of approval and issuance of the permit, the administering authority may require the applicant to submit a financial guarantee, the form, and type of which shall be acceptable to the administering authority. The financial guarantee shall be in an amount determined by the administering authority to be the estimated cost of implementing the approved erosion control plan and any permit conditions for the duration of the construction activity and until final site stabilization.

(c) **RELEASE OF FINANCIAL GUARANTEE**. The administering authority shall release the portion of the financial guarantee established under this section, less any cost incurred by the administering authority to implement erosion control measures, following the final site stabilization and verification of said stabilization by the administering authority.

(d) Permit conditions. All permits shall require the permittee to:

(1) Notify the administering authority within 3 days of commencing any land disturbing construction activity.

(2) Notify the administering authority of completion of any BMPs within 3 days after their installation.

(3) Obtain permission in writing from the administering authority prior to modifying the erosion and sediment control plan

(4) Install all BMPs as identified in the approved erosion and sediment control plan;

(5) Maintain all road drainage systems, stormwater drainage systems, BMPs and other facilities identified in the erosion and sediment control plan.

(6) Repair any siltation or erosion damage to adjoining surfaces and drainage ways resulting from land disturbing construction activities and document repairs in a site erosion control log.

(7) Inspect the BMPs after each rain of 0.5 inches or more and at least once each week, make needed repairs and document the findings of the inspections in a site erosion control log with the date of inspection and the name of the person conducting the inspection.

(8) Allow the administering authority to enter the site for the purpose of inspecting compliance with the erosion and sediment control plan or for performing any work necessary to bring the site into compliance with the control plan;

(9) Keep a copy of the erosion and sediment control plan at the construction site; and

(10) Notify the administering authority upon completion of construction phase of a project and that the final site stabilization is in place.

(5) **GENERAL PERMITS FOR MUNICIPAL MAINTENANCE OF PUBLIC ROAD DITCHES AND PRIVATE UTILITY WORK PROJECTS**

General permits may be issued by the [administering authority] to a municipality for road ditch maintenance along public roads and to private utilities for utility maintenance and siting . The following conditions apply to the issuing of general permits for these purposes:

(a) General permits may only be issued for a one year period. Road ditch maintenance and utility work shall only take place during the period between April 1 and September 1. After September 1, work must be approved on a case by case basis by the [administering authority]. Permit fees for utility work may differ from those charged per S.08 of this ordinance as determined by the administering authority. No permit fees shall be charged for road ditch maintenance.

(b) A list of planned road ditch maintenance and utility work must be provided to the administering authority no less than 10 business days prior to work.

(c) Listed sites must be accompanied with an erosion control plan. The erosion control plan may include generic erosion control practices that are applicable to the proposal.

(d) The erosion control plan must incorporate erosion control measures for road ditch maintenance and utility work, and be designed using criteria defined in the current edition of Wisconsin Department of Transportation *Facilities Development Manual*.

**S. 12 INSPECTION**

(1) The administering authority shall inspect any construction site that holds a permit under S. 11 at least once a month during the period starting March l and ending October 31 and at least twice during the period starting November 1 and ending February 28 to ensure compliance with the approved sediment and erosion control plan.

(2) If land-disturbing construction activities are being carried out without a permit required by this ordinance, the administering authority may enter the land pursuant to the provisions of ss. 66.0119, Wisconsin Statutes.

## 23.15, Section B, STORM WATER MANAGEMENT



**Section B – Stormwater Management**

### S. 13 TECHNICAL STANDARDS

The following methods shall be used in designing the water quantity, water quality, and peak flow shaving and infiltration components of storm water practices needed to meet the water quality standards of this ordinance, provided that where a provision of this ordinance requires a greater standard or degree of compliance, the provisions of this ordinance shall control:

(1) Technical standards developed and disseminated by the Department of Natural Resources under subchapter V of Chapter NR 151, Wisconsin Admin. Code.

(2) Section IV of the Field Office Technical Guide, published by the United States Dept. of Agriculture (USDA)-Natural Resources Conservation Service, as adopted and maintained by the Winnebago County Land Conservation Committee and Land & Water Conservation Department.

(3) Where technical standards have not been developed and disseminated by the Wisconsin Department of Natural Resources, other technical standards may be used provided that the methods have been approved by the administering authority.

(4) Where the administering authority determines that more stringent standards are required than those listed in (1) of this section in order to meet the provisions of this ordinance, the more stringent standards may be required to be used.

### S. 14 STORM WATER PERFORMANCE STANDARDS

(1) **STORM WATER DISCHARGE QUANTITY.** Unless otherwise provided for in this ordinance, all new land development and land redevelopment activities subject to this ordinance shall establish on-site best management practices (BMP) to control the peak flow rates of storm water discharged from the site and to preserve base flow in streams. The BMPs shall be designed, installed or applied, and maintained to the maximum extent practicable in accordance with a storm water management plan submitted in accordance with Section S.08 of this ordinance. All of the following standards shall apply to the storm water management plan.

(a) By design, maintain or lower peak runoff discharge rates as compared to pre-settlement (meadow) conditions for the 1-, 2-, 10- and 100-year, 24-hour design storms applicable to the site, using the Runoff Curve Numbers designated on Table 1 for the appropriate site soil hydrologic group. If TR-55 methodology is not used for the hydrologic calculations, the local administering authority must approve an equivalent methodology.

| **Table 1 – Maximum Pre-Settlement (Meadow) Runoff Curve Numbers** | | | | |
|---|---|---|---|---|
| Hydrologic Soil Group | A | B | C | D |
| Runoff Curve Number | 30 | 58 | 71 | 78 |

NOTE: Source of Table 1 is: “Urban Hydrology for Small Watersheds” USDA Technical Release 55; June, 1986

(b) Discharge velocities must be non-erosive to discharge locations, outfall channels, and receiving streams.

(c) Infiltration shall be required in accordance with NR151.24(5)

(d) Where infiltration is employed on a site, groundwater quality shall be protected from pollutants in the storm water. Storm water runoff from industrial manufacturing and fueling and vehicle maintenance areas shall not be directed to infiltration structures.

(2) **STORM WATER DISCHARGE QUALITY.** Unless otherwise provided for in this ordinance, all land development and land redevelopment activities subject to this ordinance shall establish on-site management practices to control the discharge of storm water pollutants. The BMPs shall be designed, installed or applied and maintained, in accordance with a storm water management plan for the long-term control of post-construction storm water discharges, to control total suspended solids and other pollutants carried in runoff. All of the following apply:

(a) **Sediment Control:** By design, reduce the annual average total suspended solids load in runoff by 80% for new development and 40% for redevelopment as compared to no controls for the site. The sediment reduction shall be accomplished in one of the following ways:

(1) For new development, a wet detention basin/pond may be installed to receive storm water runoff from the entire site. The area shall be designed to meet standards contained in the Wisconsin DNR Wet Detention Standard Code 1001 (06/99) or a subsequently adopted version.

(2) By any other alternative method acceptable to the approving authority. If a discrepancy exists between the developer and approving authority regarding ability to reach the required sediment reduction using alternative methods, the developer shall use Source Loading and Management Model (SLAMM), P8, or an equivalent methodology to determine percentage of sediment removal. If the administrative authority finds that SLAMM shows that the required reduction will be met with the proposed design then the developer will have reached the sediment control requirements of this ordinance.

If 80% of the total suspended solids load for new development, or 40% of the total suspended solids load for redevelopment will not be controlled from the site by design, then the storm water management plan shall include a reasonable justification for not controlling 80% of the total suspended solids load for new development, or 40% of the total suspended solids load for redevelopment, from the site as compared to no sediment controls.

(b) **Petroleum and Hydrocarbon Control:** Fueling and vehicle maintenance areas shall have BMP's designed, installed or applied, and maintained to reduce petroleum within runoff, in order that the runoff that enters the waters of the state contains no visible petroleum sheen after the point of treatment. Storm water management devices do not substitute for emergency action spill control plans if required under different regulations.

(c) **Setback Areas:**

(1) A setback shall be provided along all watercourses. Permanent vegetative cover will provide for bank stability, maintenance of fish habitat, and filtering of pollutants from up slope overland flow areas (cover can be mowed lawn). The setback will keep the watercourse open to convey runoff and to provide some flood storage. No structures will be allowed in the buffer/setback area except road and utility crossings, boathouses where adjacent to navigable water, structures which are part of the storm water management plan, and structures allowed by S. 59.692(1v), i.e., the "Gazebo Rule", when adjacent to navigable water.

(2) Fill will not be allowed except where approved by the administering authority based on an engineering study of the watercourse that has assessed the impact of the fill on flood storage and flow conveyance. The above-mentioned study must show that the flow from a 100-year rain event is contained within the watercourse setback area.

(3) The buffer area shall be provided on each side of the watercourse and the minimum width on each side of the watercourse is as follows. Zoning provisions and Wis Admin Code Chapter NR 151 (if adopted) may require a greater setback from navigable water.

(a) For watercourses within watersheds less than 80 acres, 25 feet from the watercourse centerline.

(b) For watercourses within watersheds over 80 acres, 50 foot setback from the Ordinary High Water Mark of navigable waters, or the centerline of the non-navigable watercourse.

(c) Lakes –a 50 foot setback from top of the bank shall be provided along all lakes

(d) Outstanding Resources Waters and Exceptional Resource Waters -75 ft setback from top of channel.

(4) Setbacks from Wetlands

(a) For 1 and 2 family residential developments within a subdivision or plat that is subject to this ordinance effective June 17, 2003, a 50 foot buffer from wetlands, except in cases when the administering authority deems a larger buffer is necessary. For high quality wetlands such as sedge meadows, open and coniferous bogs, low prairies, calcareous fens, coniferous swamps, lowland hardwood swamps, and ephemeral ponds, a setback of 75 feet.

(b) For other than residential development, 50 feet from wetlands except in cases when the administering authority deems a larger buffer is necessary.

(c) A larger buffer may be required if deemed necessary by the administering authority based on site characteristics (wetlands in areas of special natural resource interest as specified in NR 103.04, 75 feet)

(d) Existing wetlands shall not be used to meet any of the requirements of this ordinance unless permitted by the WDNR and/or Army Corp of Engineers.

(e) Storm water shall not be injected underground through excavations or openings in a manner that would violate Chapter NR 812.05 Wisconsin Admin. Code.

(f) Storm water ponds and infiltration devices shall not be located closer to water supply wells than as indicated below without first notifying and obtaining approval from the administering authority:

(1) 100 feet from a well serving a private water system or a transient, non-community public water system;

(2) 1,200 feet from a well serving a municipal public water system, an other-than municipal public water system, or a non-transient non-community public water system,

(3) within the boundary of a recharge area to a wellhead identified in a wellhead area protection plan.

(3) **ALTERNATE REQUIREMENTS**. The administering authority may establish storm water management requirements either more stringent or less stringent than those set forth in subs. (1) and (2) above provided that at least one of the following conditions applies.

(a) The administering authority determines that an added level of protection is needed to protect sensitive resources.

(b) The administering authority determines that the land development and land redevelopment activity is covered by an approved storm water management system plan or existing conditions allow for management consistent with the purpose and intent of this ordinance.

(c) Provisions are made to manage storm water by an off-site facility, provided that all of the following conditions for the off-site facility are met:

(1) The facility is in place

(2) The facility is designed and adequately sized to provide a level of storm water control equal to or greater than that which would be afforded by on-site practices meeting the performance standards of this ordinance, and

(3) The facility has a legally obligated entity responsible for its long-term operation and maintenance.

(d) The administering authority finds that meeting the minimum on-site management requirements of this ordinance is not feasible due to space or site restrictions, or other unique conditions, provided that where this section is deemed applicable the maximum possible requirements shall be met.

(e) The application is for a non-domestic agricultural structure, or, a structure classified as an animal lot as defined in the Livestock Waste Management Ordinance, Chapter 13, Winnebago County General Code.

(f) The permit application is for land development activity on a single lot and the administering authority determines that less stringent requirements are needed for review and approval.

**S. 15 PERMITTING REQUIREMENTS, PROCEDURES AND FEES**

(1) **PERMIT REQUIRED.** No land owner or land operator may undertake a land development or land redevelopment activity subject to this ordinance without receiving a permit from the administering authority prior to commencing the proposed activity. A permit shall be required for land development or redevelopment which increases impervious surfaces greater than 15,000 square feet. The total area of imperious surfaces shall be considered within the area of the parcel(s). Land development activities generally fall into the following categories: commercial, industrial, platted subdivisions, or single lot activities. Stormwater plans for commercial, industrial, subdivisions, will require more detailed information generally provided by an engineer whereas, single lot activities normally will require non-engineered plans. Minor land development activities such as the construction of a fence, minor landscaping, or construction of minor structures (10 x 10 or smaller) may be considered exempt from permit requirements if the administering authority determines that no, or very minimal, adverse impacts will result. The determination of impact shall be based, without limitation, upon criteria such as ponding of water, backing up of water, or a threat to neighboring properties.

(2) **PERMIT APPLICATION AND FEE.** Unless specifically excluded by this ordinance, any land owner or operator desiring a permit shall submit to the administering authority a permit application made on a form provided by the administering authority for that purpose.

(a) Unless otherwise exempted by this ordinance, a permit application must be accompanied by the following in order that the permit application may be considered for approval by the administering authority: a storm water management plan, a maintenance agreement, and a non-refundable permit administration fee established in S. 04 of this ordinance.

(b) The storm water management plan shall be prepared to meet the requirements of S. 14 and 16 of this ordinance; the maintenance agreement shall be prepared to meet the requirements of S. 17 of this ordinance; the financial guarantee shall meet the requirements of S. 18 of this ordinance; and fees shall be those established by the Winnebago County Board of Supervisors as set forth in S. 04 of this ordinance.

(3) **REVIEW AND APPROVAL OF PERMIT APPLICATION.** The administering authority shall review any permit application that is submitted with a storm water management plan, maintenance agreement, and the required fee. The following approval procedure shall be used:

(a) Within 30 days of the receipt of a complete permit application, including all items as required by S. 15(2)(a), the administering authority shall inform the applicant whether the application, plan and maintenance agreement are approved, approved conditionally, or disapproved. The administering authority shall base the decision on requirements set forth in S. 14, S. 15, and S. 17 of this ordinance.

(b) If the storm water permit application, plan and maintenance agreement are approved, the administering authority shall issue the permit.

(c) If the storm water permit application, plan or maintenance agreement are disapproved, the administering authority shall detail in writing of the reasons for disapproval.

(d) The administering authority may request additional information from the applicant. If additional information is submitted, the administering authority shall have 10 business days from the date the additional information is received to inform the applicant that the plan and maintenance agreement are either approved, approved conditionally, or disapproved.

(e) Failure by the administering authority to inform the permit applicant of a decision within the specified number of business days of a required submittal shall be deemed to constitute an approval of the submittal, and the applicant may proceed as if a permit had been issued. In this instance the applicant shall comply with the plan as submitted.

(4) **PERMIT CONDITIONS**. All permits issued under this ordinance shall be subject to the following conditions, and holders of permits issued under this ordinance shall be deemed to have accepted these conditions. The administering authority may suspend or revoke a permit for violation of a permit condition, following written notification to the permittee:

(a) Compliance with the permit does not relieve the permit holder of the responsibility to comply with other applicable federal, state, and local laws and regulations.

(b) The permit holder shall design and install all structural and non-structural storm water management measures in accordance with the approved storm water management plan and the permit.

(c) The permit holder shall notify the administering authority at least three (3) business days before commencing any work in conjunction with the storm water management plan, and within three (3) business days upon completion of the storm water management practices. If required as a special condition under par. (d), the permit holder shall make additional notification according to a schedule set forth by the administering authority so that practice installations can be inspected during construction.

(d) Permits issued under this subsection may include any special conditions needed to meet the performance standards in S. 14 or a financial guarantee as provided for in S. 18 of this ordinance. Permits issued as a result of a violation notice may contain conditions necessary to correct the violation, including specifying a timeframe within which certain actions need to be taken.

(e) Storm water management practices that are constructed as part of this ordinance shall be certified, "as built" by a professional engineer licensed in Wisconsin. Completed storm water management practices must pass a final inspection by the administering authority or its designee to determine if they are in accordance with the approved storm water management plan and ordinance. The administering authority or its designee shall notify the permit holder in writing of any changes required in such practices to bring them into compliance with the conditions of the permit.

(f) The permit holder shall notify the administering authority of any modifications it intends to make to an approved storm water management plan. The administering authority may require that the proposed modifications be submitted for approval prior to incorporation into the storm water management plan and execution.

(g) The permit holder shall maintain all storm water management practices in accordance with the storm water management plan until the practices either become the responsibility of a municipality, or are transferred to subsequent private owners as specified in the approved maintenance agreement.

(h) If so directed by the administering authority the permit holder shall repair at the permit holder's own expense all damage to adjoining municipal facilities and watercourses caused by storm water runoff, where such damage is caused by activities that are not in compliance with the approved storm water management plan.

(i) The permit holder shall permit property access to the administering authority or its designee for the purpose of inspecting the property for compliance with the approved storm water management plan and this permit. Permission so granted shall remain in place as specified in the recorded maintenance agreement.

(j) Where site development or redevelopment involves changes in direction, increases in peak rate and/or total volume of runoff from a site, the administering authority shall require the permittee to make appropriate legal arrangements with affected property owners concerning the prevention of endangerment to property or public safety.

(k) The permit holder is subject to the enforceable actions detailed in S. 05 of the storm water management ordinance if the permit holder fails to comply with the terms of this permit.

(5) **PERMIT DURATION**. Permits issued under this section shall be valid for one (1) year from the date of issuance. The administering authority may extend the period one time for up to an additional 180 days. Additional conditions may be imposed as a result of the extension as are necessary to achieve compliance with the originally approved plan.

**S. 16 STORM WATER MANAGEMENT PLAN**

(1) **PLAN REQUIREMENTS**. The storm water management plan required under S. 15(2)(a) of this ordinance shall contain any information the administering authority requires to evaluate the environmental characteristics of the area affected by land development and land redevelopment activity, the potential impacts of the proposed development upon the quality and quantity of storm water discharges, the potential for infiltration of stromwater, the potential impacts

upon water resources and drainage utilities, and the effectiveness and acceptability of proposed storm water management measures in meeting the performance standards set forth in this ordinance. Unless specified otherwise by this ordinance, storm water management plans shall contain at a minimum the following information:

(a) Name, address, and telephone number for the following or their designees: landowner; developer; project engineer for practice design and certification; person(s) responsible for installation of storm water management practices; person(s) responsible for maintenance of storm water management practices prior to the transfer, if any, of maintenance responsibility to another party.

(b) A proper legal description of the property proposed to be developed referenced to the U.S. Public Land Survey system or to block and lot numbers within a recorded land subdivision plat as well as the correct tax parcel number, and where applicable, the correct address.

(c) Pre-development site conditions, including:

(1) One or more site maps at a scale of not less than 1 inch equals 100 feet unless otherwise required by the approving authority. The site maps shall show the following: site location and legal property description; predominant soil types and hydrologic soil groups; existing cover type and condition; existing 2 foot contours; proposed elevations; benchmark(s) as required by the approving authority; topography and drainage network including enough of the contiguous properties to show runoff patterns onto, through and from the site; watercourses that may affect or be affected by runoff from the site; flow path and direction for all storm water conveyance sections, including time of travel and time of concentration applicable to each; watershed boundaries used in determinations of peak flow discharge rates and discharge volumes from the site; lakes, streams, wetlands, channels, ditches, and other watercourses on and immediately adjacent to the site; limits of the 100 year floodplain; location of wells located within 1,250 feet of storm water detention ponds, infiltration basins, or infiltration trenches; wellhead protection areas covering the project area and delineated pursuant to Chapter NR 811.16 Wisconsin Admin. Code.

(2) Computations of peak flow discharge rates and volumes for the 1-year, 2-year, 10-year, and 100-year/24 hour storm events. All major assumptions used in developing input parameters shall be clearly stated. The computations shall be made for each discharge point in the development, and the geographic areas used in making the calculations shall be clearly cross-referenced to the required map(s).

(3) A site evaluation of the project site for stormwater infiltration in accordance with WDNR Technical Standards 1002

(d) Post-development site conditions, including:

(1) Explanation of the provisions to preserve and use natural topography and land cover features to minimize changes in peak flow runoff rates and volumes to surface waters and wetlands.

(2) Explanation of any restrictions on storm water management measures in the development area imposed by wellhead protection plans and ordinances.

(3) The location of the outlet or discharge as well as the water body that is recipient of the discharge.

(4) One or more site maps at a scale of not less than 1 inch equals 100 feet, or as otherwise required by the approving authority, showing the following: post-construction pervious land use including vegetative cover type and condition; impervious land use including all buildings, structures, and pavement; post-construction elevations; post-construction drainage network including enough of the contiguous properties to show runoff patterns onto, through and from the site; locations and dimensions of drainage easements; locations of maintenance easements specified in the maintenance agreement; flow path and direction for all storm water conveyance sections, including time of travel and time of concentration applicable to each; location and type of all storm water management conveyance and treatment practices, including the on-site and off-site tributary drainage area; location and type of conveyance system that will carry runoff from the drainage and treatment practices to the nearest adequate outlet such as a curbed street, storm drain, or natural drainage way; watershed boundaries used in determinations of peak flow discharge rates and discharge volumes; any changes to lakes, streams, wetlands, channels, ditches, and other

watercourses on and immediately adjacent to the site. The location of the outlet or discharge as well as the water body that is recipient of the discharge.

(5) Computation of the inches of initial runoff that will be infiltrated across the site if infiltration practices are employed.

(6) Computations of peak flow discharge rates for the 1-year, 2-year, 10-year, and 100-year/24 hour storm events. All major assumptions used in developing input parameters shall be clearly stated. The computations of peak flow discharge rates shall be made for each discharge point in the development, and the geographic areas used in making the calculations shall be clearly cross-referenced to the required map(s).

(7) Results of investigations of soils and groundwater required for the placement and design of storm water management measures.

(8) Results of impact assessments on wetland functional values

(9) Design computations and all applicable assumptions for the storm sewer system.

(10) Design computations and all applicable assumptions for storm water quality practices as needed to show that practices are appropriately sized to meet the performance standards of this ordinance.

(11) Detailed drawings including cross-sections and profiles of all permanent storm water conveyance and treatment practices.

(e) A description and installation schedule for the storm water management practices needed to meet the performance standards in S. 14.

(f) A maintenance plan developed for the life of each storm water management practice including the required maintenance activities and maintenance activity schedule.

(g) Cost estimates for the construction, operation, and maintenance of each storm water management practice.

(h) Other information requested in writing by the administering authority to determine compliance of the proposed storm water management measures with the provisions of this ordinance.

(i) All site investigations, plans, designs, computations, and drawings shall be certified by a Registered Professional Engineer, licensed to practice in the State of Wisconsin, to the effect that they have been prepared in accordance with accepted engineering practice and requirements of this ordinance.

(2) **ALTERNATE REQUIREMENTS**. The administering authority may prescribe alternative submittal requirements for applicants seeking an exemption to on-site storm water management performance standards under S. 14(3) of this ordinance.

**S. 17 MAINTENANCE AGREEMENT**

(1) **MAINTENANCE AGREEMENT REQUIRED**. The maintenance agreement required for storm water management practices under S. 15(2) of this ordinance shall be an agreement between the administering authority and the permittee to provide for on-site inspection of construction allowed by the permit both during and after construction, and to inspect and enforce maintenance of storm water practices beyond the duration period of this permit. The agreement or recordable document shall be recorded with the County Register of Deeds so that it is binding upon all subsequent owners of land served by the storm water management practices.

(2) **AGREEMENT PROVISIONS**. The maintenance agreement shall contain the following information and provisions:

(a) Identification of the storm water facilities and designation of the drainage area served by the facilities.

(b) A schedule for regular maintenance of each aspect of the storm water management system consistent with the storm water management plan required under S. 15(2). An annual or more frequent schedule for maintenance and inspection shall be contained in the agreement.

(c) Identification of the landowner(s), organization or municipality responsible for long term maintenance of the storm water management practices identified in the storm water plan required under S. 15(2).

(d) Requirement that the landowner(s), organization, or municipality shall maintain storm water management practices in accordance with the schedule included in par. (b).

(e) Authorization for the administering authority to access the property to conduct inspections of storm water practices as necessary to ascertain that the practices are being maintained and operated in accordance with the agreement.

(f) Agreement that the administering authority notify the party designated under the maintenance agreement of maintenance problems that require correction and time frame for correction as determined by the administering authority.

**S. 18 FINANCIAL GUARANTEE**

(1) **ESTABLISHMENT OF THE GUARANTEE.** The administering authority may require the submittal of a financial guarantee, the form and type of which shall be acceptable to the administering authority. The financial guarantee shall be in an amount determined by the administering authority to be the estimated cost of construction and the estimated cost of maintenance of the storm water management practices during the period which the designated party in the maintenance agreement has maintenance responsibility. The financial guarantee shall give the administering authority the authorization to use the funds to complete the storm water management practices if the landowner defaults or does not properly implement the approved storm water management plan, upon written notice to the landowner by the administering authority that the requirements of this ordinance have not been met.

(2) **CONDITIONS FOR RELEASE.** Conditions for the release of the financial guarantee are as follows:

(a) The administering authority shall release the portion of the financial guarantee established under this section, less any costs incurred by the administering authority to complete installation of practices, upon submission of "as built plans" by a licensed professional engineer licensed to practice in the State of Wisconsin. The administering authority may make provisions for a partial pro-rata release of the financial guarantee based on the completion of various development stages.

# STORMWATER PERMITS

A Stormwater Permit is required for commercial, industrial, or platted subdivision development that increases impervious surfaces by more than 15,000 square feet, to ensure proper erosion control practices during construction and post construction stormwater management.

PROCESS:

1. Submit the following to Winnebago County Zoning Department:
   a. Application (https://www.co.winnebago.wi.us/zoning/stormwater-and-erosion-control)
   b. 2 copies of supporting plans and documents (must have a PE stamp)
   c. a check for $175 written to Winnebago County for the review fee (NOTE: **only the review fee** is to be submitted at this time)

2. RA Smith (a 3rd Party Professional Engineer) reviews the project and submits an escrow estimate to the owner/applicant and Winnebago County.

3. The owner/applicant pays the escrow fee to Winnebago County.

4. RA Smith performs an engineering review of the plans, coordinating with the contracted engineer/owner. Once a design is reached which meets Winnebago County's ordinance, RA Smith issues an approval letter to the owner/applicant and Winnebago County.

5. The owner records a maintenance agreement with the Register of Deeds.
   a. Maintenance Agreement

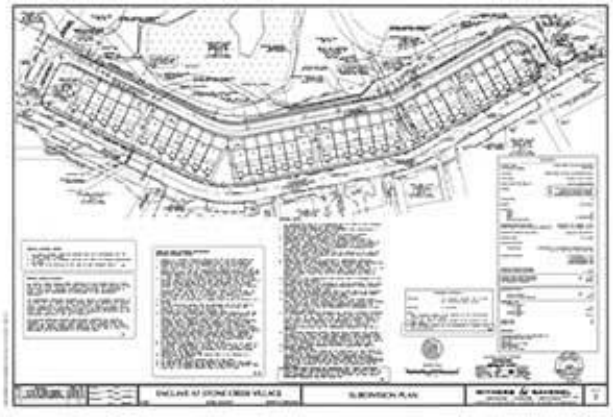
6. A permit fee of $250.00 is paid to Winnebago County and the permit is approved. Note: Permit fees are doubled for projects which have started prior to permit issuance.

7. The plan is installed.

8. Two copies of an "as-built" survey (must be PE stamped) are submitted to the County after RA Smith completes the final inspection of the property.

9. RA Smith reviews the "as-built" survey and if it meets Winnebago County design requirements an approval letter is issued.

10. After Winnebago County has received the RA Smith final inspection invoice, the remaining escrow is returned to the original payee and the permit closed out.



# WINNEBAGO COUNTY EROSION CONTROL and STORMWATER MANAGEMENT APPLICATION FORM

Zoning: (920) 232-3344  112 Otter Ave., PO Box 2808, Oshkosh WI 54903-2808

## OWNER

Name _____

Address _____

City _____ State _____ Zip _____

Telephone Home ( _____ ) _____

Cell ( _____ ) _____

E-mail _____

## TYPE OF REQUEST

**Erosion Control**

General Permit
(Municipality/Utility)

Single Lot Development

**Stormwater Permit**

Commercial

Industrial

Subdivision

## Project Start Date

_____

## Estimated End Date

_____

(This time frame should include the completed landscaping)

SEND PERMIT TO: ☐ Owner by: ☐ E-mail ☐ Mail  ☐ Applicant by: ☐ E-mail ☐ Mail

## APPLICANT

Name/Co. _____

Address _____

City _____ State _____ Zip _____

Telephone Home ( _____ ) _____

Cell ( _____ ) _____

E-Mail _____

## SITE LOCATION

Address _____

**Parcel No.** _____ Town of _____

Plat/CSM _____

Lot # _____ Lot Size _____ Sec _____ T _____ R _____

**Describe type of proposed project (new home, shed, etc.), work to be done and provide a description and location of erosion control measures.**

**(Site plan must include setbacks and all dimensions of the building/project - see attached instructions)**

## APPLICANT/OWNER ACKNOWLEDGEMENT

FAILURE TO PROVIDE ALL REQUIRED MATERIALS AND INFORMATION COULD RESULT IN THE REVIEW OF THIS APPLICATION BEING DELAYED FOR CONSIDERATION:

☐ For new home construction, the Winnebago County Zoning Dept. must be contacted for an inspection, *within **one business day** of initial disturbance of land*, at **(920) 232-3344** OR by email to: zoningdepartment@co.winnebago.wi.us.

☐ I understand that the conditions of the permit are minimum requirements and that, upon site inspection further measures may be required for compliance within the ordinance.

☐ I understand that all required erosion control measures shall be maintained as described in the permit plan until the Winnebago County Zoning Dept. approves their removal.

☐ I further grant the right-of-entry to the property, as described under "Site Location", to personnel designated by the County, for the purpose of inspecting and monitoring compliance with the ordinance(s).

☐ I have reviewed *Section 23.15 of the Winnebago County Zoning Ordinance* regarding erosion control & stormwater management and agree to comply with the requirements of the ordinance.

☐ In accordance with Wisconsin State Statute 59.691, the information provided herein is to give you notice regarding potential wetlands. You are responsible for complying with state and federal laws concerning construction near or on wetlands, lakes, and streams. Wetlands that are not associated with open waters can be difficult to identify. Failure to comply may result in removal or modification of construction that violates the law or other penalties or costs. For more information, visit the Department of Natural Resources Wetland Identification web page at: http://dnr.wi.gov/topic/surfacewater/swdv/ or contact your local DNR office. As the applicant, I hereby acknowledge notice of this wetland information.

_____ Date: _____

**ORIGINAL INK** Signature of Owner/Applicant/Agent

## OFFICE USE ONLY

Fee Recv'd $ _____ Date _____ Permit # _____

Type _____ Issued Date _____

Issued by: _____

06/20

Complete and PRINT form. Submit application with **ORIGINAL INK SIGNATURE, SITE PLAN** and fees to our office in person or by mail. **DO NOT E-MAIL**

**Stormwater Management**
**Practices Maintenance Agreement**

Document Number

THIS AGREEMENT, made and entered into this _____ day of _____, 20___ by and between _____, hereinafter called the "Owner" and **Winnebago County**, hereinafter called the "**County**".

WITNESSETH:

WHEREAS, the Owner is the owner of the following described lands situated in the Town of _____, Winnebago County, State of Wisconsin, to-wit:

*Full Legal Description (if lengthy, type see Attached Exhibit. exhibit must be labeled):*

Hereinafter called the "Property".

Recording Area

Name and Return Address

Parcel Identification Number (PIN)

This **is / is not** homestead property.

WHEREAS, the Owner is developing the Property; and

WHEREAS, the Site Plan identified as _____, hereinafter called the "Plan", which is expressly made a part of hereof, as approved or to be approved by the **County**, provides for on-site stormwater management practices within the confines of the Property; and

WHEREAS, the **County** and the Owner, its successors and assigns, including any homeowners association, agree that the health, safety and welfare of the residents of the Town of _____ require that the on-site stormwater management practices as defined in Wisconsin Administrative Code NR 151, and the **Winnebago County** Stormwater Ordinance be constructed and maintained in perpetuity on the Property; and

WHEREAS, the **County** requires that on-site stormwater management practices as shown on the Plan be constructed and adequately maintained by the Owner, its successors and assigns, including any homeowners association.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Owner, its successors and assigns, in accordance with the plans and specifications identified in the Plan, shall construct the on-site stormwater management practices. Following construction, **County** approved construction documentation and "as-builts" of the Property shall be recorded with the Winnebago County Register of Deeds.

2. The Owner, its successors and assigns, including homeowners association, shall adequately maintain the stormwater management practices, including, but not limited to, all pipes, swales, and channels built to convey stormwater to and from the facilities, as well as all structures,

improvements (including grading/drainage patterns) and vegetation provided to control the quantity and quality of the stormwater. Adequate maintenance is herein defined as keeping the stormwater management facilities in good working condition so that these facilities are performing their design functions and are in accordance with the Operation and Maintenance Plan attached to this agreement as Exhibit and by this reference made a part hereof. The Operation and Maintenance Plan may be periodically updated by the County.

3. The Owner, its successors and assigns, shall regularly inspect the stormwater management practices as often as conditions require, but in any event at least twice each year. The standard Operation and Maintenance Report attached to this Agreement as Exhibit and by this reference made a part hereof shall be used for the purpose of the regular inspections of the stormwater management practices. This report form may be periodically updated by the **County**. The Owner, successors and assigns shall keep the Operation and Maintenance Reports from past inspections as well as a log of maintenance activity indicating the date and type of maintenance completed and provide copies of the reports and log to the **County** annually. The reports and maintenance logs shall be made available to the **County** for review upon request. The purpose of the inspections is to assure safe and proper functioning of the facilities. The inspections shall cover all facilities including, but not limited to, berms, outlet structures, pond areas and access roads. Deficiencies shall be noted in the Operation and Maintenance Report.

4. The Owner, its successors and assigns, hereby grants permission to the **County**, its authorized agents and employees, to enter upon the Property and to inspect the stormwater management practices whenever the **County** deems necessary. The purpose of inspection is to investigate reported deficiencies, to respond to citizen complaints, or verify maintenance of on-site stormwater management practices. The **County** shall provide the Owner, its successors and assigns, copies of the inspection findings and a directive to commence with the repairs if necessary. Corrective actions shall be taken within a reasonable time frame as established by the **County**.

5. If the Owner, its successors and assigns, fails to maintain the stormwater management practices in good working condition acceptable to the **County** and does not perform the required corrective actions in the specified time, the **County** may:

   a. Issue a citation to the Owner, its successors and assigns. The penalty for violation of this section shall be not less than fifty dollars ($50.00) nor more than five hundred dollars ($500.00) for each offense, together with the costs of prosecution. Each day that the violation exists shall constitute a separate offense, and

   b. Perform the corrective actions identified in the inspection report and assess the Owner, its successors and assigns for the cost of such work. The cost of such work shall be specially assessed against the Property. If the facilities are located on an outlot owned collectively, the **County** may assess each owner according to ownership interest in the facilities located on the Property. The provision shall not be construed to allow the **County** to erect any structure of permanent nature on the land of the Owner outside of the easement for the stormwater management practices. It is expressly understood and agreed that the **County** is under no obligation to routinely maintain or repair said stormwater management practices, and in no event shall this Agreement be construed to impose any such obligation on the **County**.

6. The Owner, its successors and assigns, will perform the work necessary to keep these facilities in good working order as appropriate. In the event a maintenance schedule for the stormwater management practices (including sediment removal) is outlined in the Operation and Maintenance Plan, the schedule will be followed.

7. This Maintenance Agreement may be modified by the sole approval of the **County**. The modification date shall be the date the modified Maintenance Agreement is recorded with the **Winnebago County** Register of Deeds, as a property deed restriction so that the modified agreement is binding upon all subsequent owners of the land served by the stormwater management practices.

8. In the event the **County** pursuant to this Agreement, performs the work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Owner, its successors and assigns, shall reimburse the **County** upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the **County** hereunder. Failure of the Owner to make payment within thirty (30) days shall result in the amount plus any interest thereupon being added to the tax roll and collected as a special charge against the property.

9. This Agreement imposes no liability of any kind whatsoever on the **County** and the Owner agrees to hold the **County** harmless from any liability in the event the stormwater management practices fail to operate properly.

10. This Agreement shall be attached as an exhibit to any document which creates a homeowners association that is responsible for maintenance of the stormwater management practices and be recorded at the **Winnebago County** Register of Deeds, and shall constitute a covenant running with the land, and shall be binding on the Owner, its administrators, executors, assigns, heirs and any other successors in interests, including any homeowners association. The Owner shall provide the **County** with a copy of any document, which creates a homeowners association that is responsible for the stormwater management practices.

11. Upon receipt of the executed Maintenance Agreement, the Owner shall record said agreement in the Office of the Register of Deeds. The Owner shall provide a copy of the recorded Maintenance Agreement with applicable attachments to the County.

[SIGNATURES BEGIN ON THE FOLLOWING PAGE]

WITNESS the following signatures and seals:

Owner Name:

By: _____
(Signature)

_____
(Date)

Printed Name:
Title:

STATE OF WISCONSIN )
: ss.
COUNTY )

The foregoing Agreement was acknowledged before me this _____ day of _____ 20 _____

by _____
(name of Owner)

_____
(Notary Signature)

_____
(Notary Print Name)

Notary Public, State of Wisconsin

My commission expires/is permanent _____, 20___.

Owner Name:

By: _____
(Signature)

_____
(Date)

Printed Name:
Title:

STATE OF WISCONSIN )
: ss.
COUNTY )

The foregoing Agreement was acknowledged before me this _____ day of _____ 20 __

by _____
(name of Owner)

_____
(Notary Signature)

_____
(Notary Print Name)

Notary Public, State of Wisconsin

My commission expires/is permanent _____, 20___.

This instrument was drafted by .

6085 County Road T
Oshkosh, WI 54904
Phone: 920.235.6953

# INFORMATION SUBMITTED BY THE PUBLIC

| **Complaint Submitted By:** | | |
|---|---|---|
| Name: ☐ Anonymous | | Date: |
| Address: | | |
| Telephone: | E-Mail: | |
| Should we contact you? ☐ Yes ☐ No | | |
| **Location of Complaint:** | | |
| Site Name (Project): | | Construction Site ID No: |
| Address / Location: | | |
| Landowner Name: | | |

**Description of Complaint:** (check all that apply)

| | |
|---|---|
| ☐ Automobiles (fluid leak, car washing) | ☐ Storm Water Management (flooding, pond maintenance) |
| ☐ Pet Waste | ☐ Illicit Discharge (spill / hazardous material) |
| ☐ Household Hazardous Waste (dumping) | ☐ Illicit Discharge (improper waste disposal) |
| ☐ Household Practices (garbage, recycling) | ☐ Illicit Discharge (dry weather flow / discharge) |
| ☐ Fertilizers & Pesticides | ☐ Illicit Discharge (illegal plumbing connection) |
| ☐ Leaves & Grass Clippings | ☐ Illicit Discharge (failing lateral / septic system) |
| ☐ Stream & Shoreline Management (erosion) | ☐ Street Sweeping / Catch Basin Cleaning |
| ☐ Residential (downspouts, sump pump) | ☐ Municipal Road Salt & Other Deicers |
| ☐ Construction Site Erosion Control | ☐ Other: _____ |

Describe complaint:

**Description of Follow-Up Actions:**

Describe follow-up actions:

# APPENDIX H

**Municipal Pollution Prevention**

# WET DETENTION POND
## Inspection Form

This is a general inspection form. Items on this form are to be checked at different times and frequencies. Complete this form in accordance with the Operation & Maintenance Plan.

Pond Name:_____ Location: _____

Pond Inspected by: _____ Date: _____

**POND**

Sediment Levels in the Pond (mark approximate Location on pond site plan). Depth is from Water surface to bottom.

| Location No. | Depth (feet) |
|---|---|
| | |
| | |
| | |
| | |

**WETLAND VEGETATION**

| | Yes/No | Date/ Action Taken |
|---|---|---|
| Invasive Species | ☐ / ☐ | |

**SEDIMENT REMOVAL**

| | Yes/No | Date/ Action Taken/ Company Used |
|---|---|---|
| Wet Pond | ☐ / ☐ | |
| Drainage Ditches | ☐ / ☐ | |
| Sweep Street | ☐ / ☐ | |
| Other | ☐ / ☐ | |

**EMBANKMENTS**

| | Yes | No | Date/ Action Taken |
|---|---|---|---|
| Slumping \ Stability | ☐ | ☐ | |
| Erosion | ☐ | ☐ | |
| Burrow Holes | ☐ | ☐ | |
| Woody Plants | ☐ | ☐ | |
| Invasive Species | ☐ | ☐ | |
| Mowing | ☐ | ☐ | |
| Waterfowl Nests | ☐ | ☐ | |

**INLET PIPES / OUTLET STRUCTURES**

| | Yes | No | Date/ Action Taken |
|---|---|---|---|
| Clogging/Debris/Litter | ☐ | ☐ | |
| Erosion | ☐ | ☐ | |
| Structural Integrity | | | |
| Excellent ☐ | Good | ☐ | |
| Fair ☐ | Poor | ☐ | |
| Other Damage | | | |

**STORM SEWER SYSTEM**

| | Yes | No | Date/ Action Taken |
|---|---|---|---|
| Clogging/Debris/Litter | ☐ | ☐ | |
| Televise & Cleaning | ☐ | ☐ | |
| Structural Integrity | | | |
| Excellent ☐ | Good | ☐ | |
| Fair ☐ | Poor | ☐ | |
| Other Damage | | | |

**ADDITIONAL COMMENTS**

_____

_____

_____

# STORMWATER SYSTEM
# Maintenance Checklist

Maintenance tasks denoted with an asterisk (*****) should also be performed after each 0.5-inch rainfall event or greater.

MONTHLY MAINTENANCE:

- Check pond inflow rate, outflow rate and water surface elevation. *
- Remove accumulated debris and litter from pond inlets, outlets and trash racks. *
- Remove debris and litter from storm inlets and culverts. *
- Remove debris and litter from detention ponds and drainage ditches.

QUARTERLY MAINTENANCE:

- Repair eroded areas within pond and along drainage ditches; apply seed mixture in conformance with original specifications. Install erosion blankets and rip-rap within eroded areas as deemed necessary.
- Repair animal burrow holes within pond embankments.
- Check other areas for erosion. Repair as necessary.

SEASONAL MAINTENANCE:

- Spring
  - Check pond inflow rate, outflow rate and water surface elevation. *
  - Remove accumulated debris and litter from pond inlets, outlets and trash racks. *
  - Remove debris and litter from storm inlets and culverts. *
  - Remove debris and litter from detention ponds and drainage ditches.
  - Check and repair pond outlet structure for cracks or other undesirable condition.
  - Remove invasive plants such as Reed Canary Grass, Purple Loosestrife and Willow Trees. Control by hand pulling, herbicide application and/or mowing.
  - Plant additional wetland plants in bare spots or areas with dead wetland vegetation.
  - Check pond's upland areas for waterfowl nests and eggs (April 1 thru May 15).

- Summer
  - A qualified biologist, botanist or ecologist should conduct a vegetation inspection at least once every other year and recommend control techniques for invasive species.
  - At least once every other year, remove invasive plants such as Reed Canary Grass, Purple Loosestrife, and Willow Trees. Control by hand pulling, herbicide application, and/or mowing.
  - Maintain vegetation along pond side slopes and drainage ditches as appropriate.
  - At least once every other year, measure sediment levels within pond's permanent pool of water, particularly at pond inlets and sediment forebays. When the water depth within the permanent pool is 3-feet deep or less, sediment should be removed and disposed. Remove sediment during late fall or winter to minimize damage to wetland vegetation.

- Late Fall
  - Remove brush and other unwanted woody vegetation from pond embankments and drainage ditches. Remove by hand pulling, brushing and/or mowing. Undesirable woody vegetation can be mowed. Paint stumps with an herbicide as needed.
  - Maintain vegetation along pond side slopes and drainage ditches as appropriate.

- Avoid landfills. Added moisture should be kept out of landfills.

- Avoid wetlands and floodplains. These areas are especially sensitive to excess water.

### Street strategies for pollution prevention

Contaminants can build up in large snowpiles and lead to "shock" doses of pollutants into waterways during spring runoff. Thus, maintain clean snow at disposal sites by always removing snow from busy roads within 48 hours of snowfall. Use less sand and especially less salt. Consider using alternative de-icers such as calcium chloride. If you use sand, use covered, sturdy street barrels that are no taller than they are wide. Make sure barrels are level and avoid placing them near gutters or storm water drains, where any spills would get an easy ride to surface waters.

Here are some additional ways to "go for clean snow:"

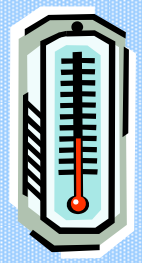
- Equip sand-spreading trucks with sensors that control release rates.
- In the spring and fall, clean up debris that has accumulated in the streets.
- Develop a local snow management policy.

***For assistance with water pollution prevention or choosing a snow disposal site, contact the Wisconsin Department of Natural Resources (DNR) office nearest you.***

***DNR does not have direct authority to choose municipal snow disposal sites or set snow management policies, but can assist with these matters. DNR staff do have the authority to address any complaints regarding water resources contamination in Wisconsin and will handle these matters case by case.***

### Smart salting

Vermont's "smart salting" program calculates sale application rates using infrared sensors on trucks to measure winter pavement temperatures, which are typically 7 to 40°F warmer than the air. When the pavement is so cold (about -6°F) that salt would be inefficient, crews apply sand or other abrasives.



Sand is frequently mixed with salt to help "embed" the sand into colder surfaces and increase friction. Overall, state transportation crews have found that applying salt and sand in frequent, small doses *during* a snowfall, versus "waiting out the storm," achieves the best results. They are using 25 percent less salt and sand than in previous years.

# Where to go with the snow

**Snow treatment and disposal guidance for municipalities**

Wisconsin Department of Natural Resources
PUBL-WR-154-06REV

DNR Runoff Management:
http://dnr.wi.gov/runoff/

To Wisconsin municipalities, winter means snow and having to find a place to put the tons of it removed from roads, sidewalks and parking lots. Along with protecting safety and maintaining access to homes and businesses, a primary concern in handling snow should be to prevent environmental damage. We hope the following tips will help guide your community's decisions on snow removal and disposal.

## What's in the white stuff?

Snow removed from streets, cars and parking lots can contain salt, nutrients, oil, sand, silt, litter, heavy metals and toxic chemicals. All these things can harm surface waters and groundwater, especially when tons of snow are dumped directly into lakes and streams. Spring meltwater from large snow piles can also deliver accumulated doses of pollutants directly to waterbodies.

## Suitable disposal sites

Disposing of snow on land where contaminants and debris can be gradually released, contained or collected is better than dumping it into surface waters or on land that drains directly into surface waters, groundwater or storm drains.

The best disposal sites are lands that drain to detention basins, which capture meltwater pollutants that would otherwise reach storm sewers and surface waters. A dike or berm may be needed to prevent overload drainage to nearby lakes and streams.

The amount of snow brought to a site should be based on estimated runoff rates, meltwater quality, the receiving water's ability to absorb runoff, and downstream uses of the receiving water. Local WDNR staff can help in making these assessments.

- Do not choose disposal sites with steep slopes or readily erodible soils.
- Choose sites where there is little risk of human exposure to potential contaminants.
- Avoid playgrounds, ballparks and parking lots.
- Remove debris from snowpiles after spring thaw or before any potential flooding. Fencing the site will prevent litter from blowing offsite or into waterways.
- Avoid placing sites near high-traffic areas to lessen salt and heavy metal buildup from tire and brake wear.

## Protect groundwater

- Snow piles should be at least 1,000 feet away from water supply wells. Locate sites downhill of wells, avoiding lakes, streams and wetlands.
- Fine-textured soils are better than sandy soils for filtering certain heavy metals, thus they help protect surface waters and groundwater. (However, most soils cannot detain road salt chlorides, which are soluble in water.)
- Avoid areas with fractured bedrock near the surface. Contaminants can be easily channeled to groundwater at these sites.

## The concern over contaminated snow

Toxic substances, sand, silt and litter in city snow that's improperly disposed of can combine with other polluted runoff to:

- Reduce levels of dissolved oxygen in surface waters.
- Stimulate nuisance aquatic plant and algae growth.
- Kill fish and other aquatic life.
- Contribute to contamination in game fish, making them inedible.
- Introduce heavy metals into water and sediments.
- Cover habitat for fish and other aquatic life.
- Clog navigation channels.
- Impair terrestrial plant growth and erode soil.
- Little stream and lake bottoms and shorelines.
- Contaminate groundwater.

## *1.0 Appropriate Use of De-icing Agents*

De-icing agents are used under appropriate winter maintenance conditions to: 1) prevent the formation of ice (anti-icing); 2) prevent the formation of a bond between accumulated snow, ice or slush and the pavement and keep the accumulation "plowable"; 3) de-ice, which is the melting of bonded ice or snow; and 4) keep abrasive material free flowing in freezing conditions. Plowing or other mechanical means available to achieve our service objectives are an important part of an overall strategy, and are preferable to the use of de-icing agents for snow removal, de-icing, or cleanup. In general, we will maximize the use of mechanical tools in order to control the use of chemical tools, subject to the specific storm or roadway situation.

It is essential that careful consideration be given to the appropriate use of any de-icing agent for winter operations. Use of these de-icing agents on state highways shall be limited to the amount needed to provide the established level of service or “bare/wet pavement” expectation. This special attention to controlling the use of these de-icing agents is important to minimize any adverse environmental impacts that may result from the material. As concerned stewards of the environment, we have a keen interest in preserving and protecting our environment in the accomplishment of our work.

In addition to our interests in reducing negative impacts or effects of using de-icing agents, we also have a responsibility to provide cost effective service and operate within budgetary constraints. Budget allocations provide for winter service based on standard costs for labor, materials, and equipment. The choice of tools to provide the winter service should be consistent with this guideline to provide for uniformity of service and the objectives of limiting de-icing agent use and providing cost effective service. Achieving the established service level while reducing the use of de-icing agents can free up dollars that might have been spent for salt to be used for other operations activities. The balancing of these goals requires each service provider to exercise discretion on how to best respond to winter maintenance needs.

Environmental concerns associated with materials used for winter operations include impacts on soil, vegetation, and water, as well as the influence of residues on the behavior of animals. Corrosive impacts on steel in automobiles, bridges and concrete reinforcing bars are also a concern. Even use of abrasives (sand) generates concerns for negative environmental impacts related to residue and particulates that may impair air quality. Careful use of these materials is important to minimize negative impacts on the environment. We must insist on careful use to retain the public's confidence that we are prudent users of salt and other de-icing agents used for winter operations. Without this trust, we risk losing the tools needed to provide the mobility, safety, and quality of service the public has come to expect of Wisconsin's highway system. Effective control of the use of these materials is also important to efficient operation and cost considerations.

Appropriate uses include:

1. Anti-icing by applying a light application of de-icing agents when snow begins to fall or just prior to the expected freeze point of the precipitation on the pavement. Anti-icing helps prevent the formation of a bond at the pavement interface. Failure to prevent the bond may result in a hazardous driving condition and the energy required to break the bond requires substantially more de-icing agent to be used. Timing, traffic and weather conditions are critical to successful anti-icing. Use of the winter weather forecasts is critical when using this application. Anti-icing is best accomplished using direct liquid de-icing agent applications onto a dry roadway surface.

2. Bond prevention by applying de-icing agents during the storm to prevent the bond of accumulated precipitation and to keep the snow in a plowable condition.

   Failure to keep the bond from forming during the storm can result in a thick snow pack on the pavement that can only be removed by extraordinary and expensive de-icing measures such as heavy salt application, additional de-icing agents, and heavy equipment. Bond prevention is preferable to de-icing because it may take 5 to 10 times more de-icing agent to remove ice than to prevent it.

## *1.0 Proper Applications and Temperature Ranges for De-icing Agents and Abrasives*

1. Application rates for de-icing agents are provided in HMM 06-20-20 (anti-icing) and HMM 06-20-25 (de-icing). The rates contained in these sections are guidelines because conditions for a given storm may require that other measures be taken. Discretion must be exercised in responding to each winter maintenance situation. Data from winter storm reports, required per HMM 06-10-20, will be collected to make comparisons and evaluations of the amount of de-icing agents used for winter maintenance.

2. The appropriate material to use is dependent on the specific storm conditions and forecast. De-icing agents are not always necessary and in some situations may create a more hazardous situation than if no de-icing agents were used. Winds, temperatures of both the pavement and air, and drifting conditions should be considered when choosing to apply de-icing agents, since chemically wet pavements may capture drifting snow and lead to ice and snow accumulations.

3. Prewetted sodium chloride may be the most effective material during and after the storm when the pavement temperature is 15°F or higher. However, below 15°F, the prewetted salt becomes less effective and therefore the service provider should consider a plow only strategy or switch to a deicing agent other than sodium chloride such as Magnesium Chloride or Calcium Chloride, etc. Even though these de-icing agents will lower the melting range of sodium chloride, it should be noted that below 15°F the effectiveness of all agents is greatly reduced. Additional monitoring may be required when using these liquid agents because re-freeze may occur.

4. Prewetting of dry salt with salt brine, liquid magnesium chloride solutions, or other approved liquids should be done to reduce the loss of de-icing materials that are blown or bounce off the pavement as a result of traffic or the act of dispensing the material from a moving truck.

5. Anti-icing should be performed using only materials specifically designed for anti-icing applications. The materials selection process should be a joint effort between the service provider, region maintenance staff, and the bureau of highway maintenance. Salt brine applied using a spray bar with controls to provide uniform application is the preferred method of anti-icing. Dry or prewetted salt should not be used for anti-icing because of the likelihood that most of the material will not remain on the pavement to provide effective control.

6. Locally available abrasive materials, usually sand (see HMM 06-20-15), can be employed when pavement temperatures are 10°F or less or when de-icing agents are ineffective because of high winds or other storm conditions. However, it is recommended that abrasives be pre-wetted and only used in low speed trouble spots and intersections. Abrasives should not be used on roadways where speeds in the sanded locations exceed 45 mph. Special consideration should be taken in urban areas where there are storm sewers. Abrasive products should be scrutinized for their effects on the environment. Under no circumstance shall any abrasive material that contains an environmentally sensitive substance be used on the state highway system. It is unacceptable to use rock salt as an abrasive. Prewetting abrasives may be appropriate or necessary to aide in securing or imbedding the abrasive into the ice or snow pack.

7. De-icing agents should be applied with appropriate equipment to provide the most effective benefit from the material. The material should be spread only to the width necessary to achieve the “bare/wet pavement” expectation, keeping in mind the effects of traffic and wind on the material. Chutes and spinners placed close to the roadway, and specialized velocity negating spreaders are some of the devices available to aide in keeping the material spread on the pavement where it can be most effective. When spinners are used, operators should be instructed about their use and asked to limit the speed of the spinner to prevent the material from being cast beyond the area to be treated.

## 1.0 General

County highway departments are responsible for the purchase of liquid anti-icing/de-icing agents. The bureau of highway maintenance (BHM) will not mandate the types of anti-icing/de-icing agents that are to be used for winter maintenance on the state trunk highway system. BHM does not endorse or recommend any one liquid anti-icing/de-icing product.

## 2.0 Liquid Anti-icing/De-icing Agents

A current list of available agents can be found on the Pacific Northwest Snowfighter's Group website.

## 3.0 Charging Anti-icing/De-icing Agents

The cost of the anti-icing/de-icing agents purchased for use on the state trunk highway system shall be invoiced to the Department as part of routine winter maintenance.

## 4.0 References for Information on Anti-icing/De-icing Agents

1. Pacific Northwest Snowfighter's Group http://www.wsdot.wa.gov/partners/pns/
2. AASHTO "Guide for Snow and Ice Control", 1999 (available from District SPO offices)
3. FHWA "Manual of Practice for an Effective Anti-icing Program", Publication #FHWA-RD-95-202, June, 1996. http://www.fhwa.dot.gov/reports/mopeap/eapcov.htm
4. "Managing Snow and Ice Control" – UW Madison Engineering Extension Course, contact Benjamin J. Jordan, P.E., 800-462-0876.

## *1.0 Abrasives*

Locally available materials, particularly sand and by-products of commercial operations suitable for such purposes may be employed to enhance traffic safety when conditions preclude salt or use of other remedies.

(a) Use

Abrasives pre-wetted with a de-icing agent may be employed when the pavement temperatures are low enough that the sodium chloride is not effective. When abrasives are used it is recommended that they be pre-wetted and only used in low speed trouble spots and intersections. Sand should not be used on roadways where speeds in the sanded locations exceed 45 mph.

(b) Gradation

Abrasives should be of a fairly uniform size. All particles should essentially be less than ¼ inch in size. It is best to have abrasives with as high fractured particle content as possible. The following gradation gives optimum results.

| Sieve Size | % Passing |
|---|---|
| #4 | 96-100 |
| #10 | 60-80 |
| #40 | 30% Max. |
| #200 | 0-5 |

(c) Application (Typically 600-1000 pounds per lane mile when mixed with 5% salt. If mixed with more salt the application rate should be reduced appropriately.)

Abrasives may be applied to predetermined areas when conditions warrant. Abrasives should be applied in quantities and at intervals necessary to provide suitable traction. Predetermined areas may include certain grades, curves, intersections, structures, and isolated areas where hazards exist. Such areas should be identified by joint cooperation and consultation of field maintenance personnel prior to or under actual storm conditions. When conditions warrant using abrasives, they should be pre-wet with a de-icing agent to assure better adherence to the roadway.

(d) Preparation

A stockpile of chloride treated abrasives may be prepared in advance of winter conditions. The TRANS 277 requires that a sand/salt stockpile that contains more than 5% salt must be under a waterproof cover (or inside a building). Sand/salt stockpiles containing 5% or less salt must be under a waterproof cover from April 1st through October 31st.

Stockpiles should be placed at strategic locations, within a maintenance facility, where contamination of ground water and surface water is prevented. Sighting of stockpiles is subject to the Department of Natural Resources Administrative Rules for groundwater protection. (Refer to TRANS 277.)

# Guidelines

## Anti-Icing

| PREDICTED PRECIPITATION EVENT | Recommended Locations | Rate *Application* Liquid (gal/lane-mi.) | Rate *Application* Pre-wetted Salt (lb/lane-mi) | *COMMENTS* |
|---|---|---|---|---|
| **Frost or Black Ice** | Bridge Decks and Trouble Spots | 20-30 (frost)<br>30-40 (Black Ice) | 50-150 | 1) Consider treating approaches as well as bridge decks.<br>2) Treat ice patches, if needed, with pre-wetted salt at 100 lb/lane-mi. |
| **Sleet** | Bridge Decks and Trouble Spots and Intersections | 20 Recommended<br>30 Maximum | 200-400(1)<br>100-300(2) | 1) Consider treating approaches as well as bridge decks.2) Treat ice patches, if needed, with pre-wetted salt at 100 lb/lane-mi. |
| **Freezing Rain** | Any area of concern | Not Recommended | 200-400(1)<br>100-300(2) | It is not recommended to apply liquid de-icing agents in an anti-icing mode prior to freezing rain events. |
| **Light Snow (< 1/2" in./hr.)** | Trouble Spots and Intersections | 30 Recommended<br>40 Maximum | 100-200 | If anti-icing is performed prior to a snow event, re-application may be necessary to prevent re-freeze. It also may be necessary to switch to a de-icing mode. |
| **Moderate or Heavy Snow (≥ 1/2 in./hr)** | Trouble Spots and Intersections | 40 Recommended<br>50 Maximum | 100-300 | 1) Do not apply liquid anti-icing agents onto heavy snow accumulation or packed snow.<br>2) Applications will need to be more frequent at lower temperatures and higher snowfall rates.<br>3) If anti-icing is performed prior to a snow event, re-application may be necessary to prevent re-freeze. It also may be necessary to switch to a de-icing mode. |

**Notes:**

- Anti-icing operations typically should be conducted during normal, non-overtime working hours and low traffic volume periods.
- It is not recommended to apply de-icing agents in an anti-icing mode when the pavement temperature is below 15ºF or drifting is a problem.
- Time initial anti-icing agent applications and subsequent de-icing agent applications to prevent deteriorating conditions or development of packed and bonded snow.

(1) 4-Lanes and Greater
(2) 2 Lanes

## *1.0 De-icing Application Rates (4-lanes and greater)*

See page 2 of 3

## *2.0 De-icing Application Rates (2-lanes)*

See page 3 of 3

## DE-ICING APPLICATION RATES FOR PRE-WETTED SALT – (4-LANES AND GREATER)

This guide is not meant to be a substitute for the use of judgment and the observation of the result of treatments on existing conditions. It is meant to show variables that usually occur together and the treatment that has proven to be the most successful. This guide should then be used to assist in deciding on the best course of action depending on existing conditions. This table assumes the salt is pre-wetted. (Allow de-icing agents time to begin working before making additional plowing passes.)

| **4-lane Highways** Application Guidelines #/LM **Pre-wetted** Salt | Pave. Temp. 28° to 32° F | | Pave. Temp. 23° to 28° F | | Pave. Temp. 15° to 23° F | | Pave. Temp. Less than 15° F | |
|---|---|---|---|---|---|---|---|---|
| | Initial | Subsequent | Initial | Subsequent | Initial | Subsequent | Initial | Subsequent |
| Frost | 100 | 50-100 | 100-150 | 50-150 | 100-200[2] | 100-150[1] | 100-300[1,2] | 100-200[1,2] |
| Black Ice | 200 | 100-200 | 100-300 | 100-200 | 100-400[2] | 100-300[1] | 200-400[1,2] | 100-300[1,2] |
| Sleet/Freezing Drizzle | 200 | 100-200 | 100-300 | 100-200 | 200-400[2] | 100-300[1] | 200-300[1,2] | 100-300[1,2] |
| Freezing Rain | 100-300 | 100-200 | 200-400 | 100-200 | 200-400[2] | 200-300[1] | 300-400[1,2] | 200-300[1,2] |
| Dry Snow | 100-200 | 100-200 | 100-300 | 100-200 | Plow Only[1] | Plow Only[1] | Plow Only[1] | Plow Only[1] |
| Wet Snow | 200 | 100-200 | 100-300 | 100-200 | 200-400[2] | 100-300[1] | 200-400[1,2] | 200-400[1,2] |

- Mechanical means of snow removal is the preferred method. Before applying any de-icing agents, the surface should be cleared of as much snow and ice as possible by mechanical means.
- Application rates are "MAXIMUM RECOMMENDED RATES". **Only apply the amount of pre-wetted salt necessary to accomplish the desired level of service.** Rates may vary with regard to pavement temperature, type of roadway surface, and weather conditions.
- Abrasives should not be used on roadways where speeds in the sanded areas exceed 45 mph.
- When wind speed is over 15 mph, use caution when salting and applying moisture drawing de-icing agents.
- [1] Intersections and **low** speed hazardous areas may be treated with pre-wetted abrasives when warranted.
- [2] If necessary, use alternate de-icing agents like calcium chloride and magnesium chloride in combination with a **lower application rate** of salt. 11/08

## DE-ICING APPLICATION RATES FOR PRE-WETTED SALT – (2-LANES)

This guide is not meant to be a substitute for the use of judgment and the observation of the result of treatments on existing conditions. It is meant to show variables that usually occur together and the treatment that has proven to be the most successful. This guide should then be used to assist in deciding on the best course of action depending on existing conditions. This table assumes the salt is pre-wetted. (Allow de-icing agents time to begin working before making additional plowing passes.)

| **2-lane Highways** Application Guidelines #/LM **Pre-wetted** Salt | Pave. Temp. 28° to 32° F | | Pave. Temp. 23° to 28° F | | Pave. Temp. 15° to 23° F | | Pave. Temp. Less than 15° F | |
|---|---|---|---|---|---|---|---|---|
| | Initial | Subsequent | Initial | Subsequent | Initial | Subsequent | Initial | Subsequent |
| Frost | 100 | 50-100 | 100-150 | 50-150 | 100-200[2] | 100-150[1] | 100-300[1,2] | 100-200[1,2] |
| Black Ice | 200 | 100-200 | 100-300 | 100-200 | 100-300[2] | 100-300[1] | 100-300[1,2] | 100-300[1,2] |
| Sleet/Freezing Drizzle | 200 | 100-200 | 100-300 | 100-200 | 100-300[2] | 100-200[1] | 100-300[1,2] | 100-300[1,2] |
| Freezing Rain | 100-300 | 100-200 | 100-300 | 100-200 | 100-300[2] | 100-300[1] | 200-300[1,2] | 100-300[1,2] |
| Dry Snow | 100-200 | 100-200 | 100-300 | 100-200 | Plow Only[1] | Plow Only[1] | Plow Only[1] | Plow Only[1] |
| Wet Snow | 200 | 100-200 | 100-300 | 100-200 | 100-300[2] | 100-200[1] | 100-300[1,2] | 100-300[1,2] |

- Mechanical means of snow removal is the preferred method. Before applying any de-icing agents, the surface should be cleared of as much snow and ice as possible by mechanical means.
- Application rates are "MAXIMUM RECOMMENDED RATES". **Only apply the amount of pre-wetted salt necessary to accomplish the desired level of service.** Rates may vary with regard to pavement temperature, type of roadway surface, and weather conditions.
- Abrasives should not be used on roadways where speeds in the sanded areas exceed 45 mph.
- When wind speed is over 15 mph, use caution when salting and applying moisture drawing de-icing agents.
- [1] Intersections and **low** speed hazardous areas may be treated with pre-wetted abrasives when warranted.
- [2] If necessary, use alternate de-icing agents like calcium chloride and magnesium chloride in combination with a **lower application rate** of salt. 11/08

United States Environmental Protection Agency | Office of Water Washington, D.C. | EPA 832-F-99-010 September 1999

# Storm Water Management Fact Sheet
## Employee Training

**DESCRIPTION**

In-house employee training programs are established to teach employees about storm water management, potential sources of contaminants, and Best Management Practices (BMPs). Employee training programs should instill all personnel with a thorough understanding of their Storm Water Pollution Prevention Plan (SWPPP), including BMPs, processes and materials they are working with, safety hazards, practices for preventing discharges, and procedures for responding quickly and properly to toxic and hazardous material incidents.

**APPLICABILITY**

Typically, most industrial facilities have employee training programs. Usually these address such areas as health and safety training and fire protection. Training on storm water management and BMPs can be incorporated into these programs.

Employees can be taught through 1) posters, employee meetings, courses, and bulletin boards about storm water management, potential contaminant sources, and prevention of contamination in surface water runoff, and 2) field training programs that show areas of potential storm water contamination and associated pollutants, followed by a discussion of site-specific BMPs by trained personnel.

**ADVANTAGES AND DISADVANTAGES**

Advantages of an employee training program are that the program can be a low-cost and easily implementable storm water management BMP. The program can be standardized and repeated as necessary, both to train new employees and to keep its objectives fresh in the minds of more senior employees. A training program is also flexible and can be adapted as a facility's storm water management needs change over time.

Obstacles to an employee training program include:

- Lack of commitment from senior management.
- Lack of employee motivation.
- Lack of incentive to become involved in BMP implementation.

**KEY PROGRAM COMPONENTS**

Specific design criteria for implementing an employee training program include:

- Ensuring strong commitment and periodic input from senior management.
- Communicating frequently to ensure adequate understanding of SWPPP goals and objectives.
- Utilizing experience from past spills to prevent future spills.
- Making employees aware of BMP monitoring and spill reporting procedures.
- Developing operating manuals and standard procedures.

- Implementing spill drills.

## IMPLEMENTATION

An employee training program should be an on-going, yearly process. Meetings about SWPPPs should be held at least annually, possibly in conjunction with other training programs. Figure 1 illustrates a sample employee training worksheet. Worksheets such as these can be used to plan and track employee training programs. Program performance depends on employees' participation and on senior management's commitment to reducing point and nonpoint sources of pollution; therefore, performance will vary among facilities. To be effective these programs need senior management's support

## COSTS

Costs for implementing an employee training program are highly variable. Most storm water training program costs will be directly related to labor and associated overhead costs. Trainers can reduce costs by using free educational materials available on the subject of storm water quality.

Figure 2 can be used to estimate the annual costs for an in-house training program. Table 1 provides an example of how this worksheet can be used to estimate annual costs.

## REFERENCES


1. U.S. EPA, 1979. *NPDES BMP Guidance Document.*

2. U.S. EPA, Pre-print, 1992. *Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices*. EPA 832-R-92-006.


## ADDITIONAL INFORMATION

Center for Watershed Protection
Tom Schueler
8391 Main Street
Ellicott City, MD 21043

City of Coral Gables, Florida
Tim Clark
285 Aragon Avenue
Coral Gables, FL 33134

Hillsborough County, Florida
Jose Rodriguez
Hillsborough County Public Works
601 East Kennedy Boulevard
Tampa, FL 33601

King County, Washington
Dave Hancock
Department of Natural Resources, Water and Land Resources Division, Drainage Services Section
700 5th Avenue, Suite 2200
Seattle, WA 98104

Mitchell Training, Inc.
Barbara Mitchell
5414 SW 177th Street
Archer, FL 32618

Southeastern Wisconsin Regional Planning Commission
Bob Biebel
916 N. East Avenue, P.O. Box 1607
Waukesha, WI 53187

The mention of trade names or commercial products does not constitute endorsement or recommendation for the use by the U.S. Environmental Protection Agency.

| EMPLOYEE TRAINING | | | Worksheet Completed by: _____<br>Title: _____<br>Date: _____ |
|---|---|---|---|
| Instructions: Describe the employee training program for your facility below. The program should, at a minimum, address spill prevention and response, good housekeeping, and material management practices. Provide a schedule for the training program and list the employees who attend the training sessions. | | | |
| **Training Topics** | **Brief Description of Training Program/Materials (e.g., film, newsletter, course)** | **Schedule for Training (list dates)** | **Participants** |
| Spill Prevention and Response | | | |
| Good Housekeeping | | | |
| Material Management Practices | | | |
| Other Topics | | | |
| | | | |
| | | | |
| | | | |

Source: U. S. EPA, 1992.

**FIGURE 1 SAMPLE WORKSHEET FOR TRACKING EMPLOYEE TRAINING**

## TABLE 1 EXAMPLE OF ANNUAL EMPLOYEE TRAINING COSTS

| Title | Number | | Average Hourly Rate ($) | | Overhead* Multiplier | | Estimated Yearly Hours on SW Training | | Estimated Annual Cost ($) |
|---|---|---|---|---|---|---|---|---|---|
| Stormwater Engineer | 1 | x | 15 | x | 2.0 | x | 20 | = | 600 |
| Plant Management | 5 | x | 20 | x | 2.0 | x | 10 | = | 2,000 |
| Plant Employees | 100 | x | 10 | x | 2.0 | x | 5 | = | 10,000 |
| | | | | | | | **Total Estimated Annual Cost** | | **$12,600** |

*Note: Defined as a multiplier (typically ranging between 1 and 3) that takes into account those costs associated with costs other than salary of employing a person, expenses, etc

| Title | Number | Average Hourly Rate ($) | Overhead Multiplier | Estimated Yearly Hours on SW Training | Estimated Annual Cost ($) | |
|---|---|---|---|---|---|---|
| _____ | _____ | x _____ | x _____ | x _____ | = _____ | (A) |
| _____ | _____ | x _____ | x _____ | x _____ | = _____ | (B) |
| _____ | _____ | x _____ | x _____ | x _____ | = _____ | (C) |
| _____ | _____ | x _____ | x _____ | x _____ | = _____ | (D) |
| | | | | **Total Estimated Annual Cost** (Sum of A+B+C+D) | _____ | |

Source: U.S. EPA, 1992.

**FIGURE 2 SAMPLE ANNUAL TRAINING COST WORKSHEET**

For more information contact:

Municipal Technology Branch
U.S. EPA
Mail Code 4204
401 M St., S.W.
Washington, D.C., 20460

## § 302-11. Littering prohibited.

A. Littering prohibited. No person shall throw any glass, refuse or waste, filth or other litter upon the streets, alleys, highways, public parks or other property of the Town of Vinland, or upon property within the Town owned by any private person, or upon the surface of any body of water within the Town.

B. Litter from conduct of commercial enterprise.

(1) Scope. The provisions of this subsection shall apply to all sales, promotions and other commercial ventures that result in litter being deposited on any street, alley or other public way.

(2) Litter to be cleaned up. Any person, firm, corporation or association carrying on any enterprise that results in litter being deposited on any street, alley or other public way shall clean up the same within 12 hours of the time the same is deposited. If any such litter is subject to being blown about, it shall be picked up immediately. If any such litter is likely to attract animals or vermin, such litter shall be picked up immediately.

(3) Litter to be picked up at litterer's expense. If any person, firm, corporation or association fails to pick up any litter as required by Subsection B(1) within the time specified, the Town shall arrange to have the same picked up by Town crews or by private enterprise. The entire expense of picking up such litter, together with an additional charge of 20% for administrative expenses, shall be charged to the person, firm, corporation or association that did the littering. If such sum is not promptly paid, steps shall be taken, with the advice of the Town Attorney's office, to collect the same. This charge shall be in addition to any forfeiture or other penalty for violation of this section.

C. Depositing of materials prohibited. It shall be unlawful for any person to deposit, cause or permit to be deposited, placed or parked any vegetation, grass, leaves, foliage, earth, sand, gravel, water, snow, ice, debris, waste material, foreign substance, construction materials, equipment or object upon any street, sidewalk or public property without authorization of the Town Board or designee pursuant to the provisions of this Code or upon any private property without the consent of the owner or lessee of the property. Any person who deposits, causes or permits to be deposited, placed or parked any such materials, equipment or objects upon any street, sidewalk or property shall be responsible to properly mark or barricade the area so as to prevent a safety hazard.

D. Handbills.

(1) Scattering prohibited. It shall be unlawful to deliver any handbills or advertising material to any premises in the Town except by being handed to the recipient, placed on the porch, stoop or entranceway of the building, or firmly affixed to a building so as to prevent any such articles from being blown about, becoming scattered or in any way causing litter.

(2) Papers in public places prohibited. It shall be unlawful to leave any handbills,

advertising material or newspapers unattended in any street, alley, public building or other public place, provided that this shall not prohibit the sale of newspapers in vending machines.

## § 167-15. Animal feces.

The owner, keeper, walker or person in charge of any dog, cat or other animal shall not permit solid fecal matter of such animal to deposit on any street, alley or other public or private property, unless such matter is immediately removed therefrom by said owner or person in charge. This section shall not apply to a person who is visually or physically handicapped.