STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
PERMIT TO DISCHARGE UNDER THE
WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 283, Wisconsin Statutes, and chs. NR 151 and NR 216, Wisconsin Administrative Code, the Menomonee River Watershed Permittees:

- City of Brookfield
- Village of Butler
- Village of Elm Grove
- Village of Germantown
- City of Greenfield
- Village of Menomonee Falls
- City of Milwaukee
- Milwaukee County
- City of West Allis
- Village of West Milwaukee
- City of Wauwatosa

are permitted to discharge storm water from

ALL PORTIONS OF THE MUNICIPAL SEPARATE STORM SEWER SYSTEMS

Owned or operated by the Menomonee River Watershed Permittees to waters of the state in watersheds of the Menomonee River, Fox River, Kinnickinnic River, Root River, and Cedar Creek in accordance with the conditions set forth in this permit.

This permit takes effect on the date of signature.

This permit to discharge expires at midnight, December 1, 2017

To retain authorization to discharge after this expiration date, an application shall be filed for reissuance of this permit in accordance with the requirements of s. NR 216.09, Wis. Adm. Code, at least 180 days prior to this expiration date.

State of Wisconsin Department of Natural Resources
For the Secretary

By

Bryan Hartsook
Water Resources Engineer

Date of Signature: 11-30-2012

EFFECTIVE DATE/START DATE: November 30, 2012
EXPIRATION DATE: December 1, 2017
Part I. APPLICABILITY

The Menomonee River Watershed Permittees own and operate municipal separate storm sewer systems that discharge to waters of the state. Permitted discharges from municipal separate storm sewer systems may consist of runoff from rain events or snow melt. Pollutants often found in municipal separate storm sewer system discharges include organic materials, suspended solids, metals, nutrients, bacteria, pesticides, fertilizer, and traces of toxic materials.

A. PERMITTED AREA: This WPDES permit regulates municipal separate storm sewer system (MS4) discharges from the following municipalities located fully or partially within the Menomonee River Watershed:

- City of Brookfield
- Village of Butler
- Village of Elm Grove
- Village of Germantown
- City of Greenfield
- Village of Menomonee Falls
- City of Milwaukee
- Milwaukee County
- City of West Allis
- Village of West Milwaukee
- City of Wauwatosa

In this permit these municipalities are referred to as the Menomonee River Watershed Permittees. This permit covers all areas within the jurisdiction of the Menomonee River Watershed Permittees, including areas of the communities which do not drain into the Menomonee River watershed. This permit is issued in accordance with chapter 283, Wis. Stats. and chs. NR 151 and NR 216, Wis. Adm. Code. The permit requirements are intended to restore and maintain the chemical, physical, and biological integrity of waters of the state through management and treatment of storm water runoff within the MS4 service area.

B. THE MENOMONEE RIVER WATERSHED: The Menomonee River watershed is located within the Milwaukee River Basin and covers approximately 136 square miles of urban landscape across portions of Washington, Ozaukee, Waukesha, and Milwaukee Counties. The watershed is home to a population of about 322,000 people. The Menomonee River originates in wetlands near the Village of Germantown and the City of Mequon and runs south, southeast for about 32 miles where it meets the Milwaukee and Kinnickinnic Rivers in the Milwaukee Harbor prior to flowing into Lake Michigan. Sixty-four percent of the land is covered by urban uses, 17 percent is covered by agriculture, and the remainder is covered by grassland, forested, or wetland areas. The watershed contains 96 total stream miles and over 6,780 wetland acres.¹

Stream and wetland modification, urban and rural runoff, construction site erosion and industrial point sources of pollution are the major contributors to degraded water and habitat quality within this watershed. The 2008 303(d) list, which is the most recent one approved by the U.S. Environmental Protection Agency, lists 11.7 miles of stream as being impaired. A water is considered impaired if a) the current water quality does not meet the numeric or narrative criteria in a water quality standard or b) the designated use that is described in Wisconsin Administrative Code is not achieved. A documented methodology called the Wisconsin Consolidated Assessment and Listing Methodology (WisCALM) describes the approach used to list waters as impaired. Table 1 shows the currently listed waters, as well as those proposed for listing based on new information for the 2012 Clean Water Act reporting cycle.

### Table 1. Menomonee River Watershed – Waterway Impairments

<table>
<thead>
<tr>
<th>Waterway Name</th>
<th>Segment Length (miles)</th>
<th>Location Description</th>
<th>Pollutant of Concern</th>
<th>Impairment</th>
<th>Listing Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goldendale Creek</td>
<td>3.5</td>
<td>STH 41 to confluence with Menomonee River Village of Germantown</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td>Honey Creek</td>
<td>8.96</td>
<td>43rd St. north of Edgerton Ave to confluence with Menomonee River Cities of Greenfield, West Allis, Milwaukee, and Wauwatosa</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td>8.96</td>
<td></td>
<td>Total Phosphorus</td>
<td>●</td>
<td>Proposed 2012</td>
</tr>
<tr>
<td>Little Menomonee Creek</td>
<td>3.9</td>
<td>Highland Road south to confluence with Little Menomonee River north of Donges Bay Rd City of Mequon</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td>Little Menomonee River</td>
<td>9</td>
<td>STH 167 south to confluence with Menomonee River at CTH EE</td>
<td>Total Phosphorus</td>
<td>●</td>
<td>Proposed 2012</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>City of Milwaukee</td>
<td>Creosote</td>
<td>△</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td></td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td>Menomonee River</td>
<td>2.67</td>
<td>35th St. east to confluence with Milwaukee River City of Milwaukee</td>
<td>Total Phosphorus</td>
<td>▲</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>2.67</td>
<td></td>
<td>PCBs</td>
<td>■</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>2.67</td>
<td></td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td>2.67</td>
<td></td>
<td>E. coli</td>
<td>+</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>2.67</td>
<td></td>
<td>Unspecified Metals</td>
<td>△</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>3.61</td>
<td>72nd St from confluence with Honey Creek to 35th St. Cities of Wauwatosa and Milwaukee</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td>Milwaukee River</td>
<td>2.9</td>
<td>North Avenue Dam to confluence with Kinnickinnic River City of Milwaukee</td>
<td>Total Phosphorus</td>
<td>▲</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>2.9</td>
<td></td>
<td>E. coli</td>
<td>+</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>2.9</td>
<td></td>
<td>Unspecified Metals</td>
<td>■</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>2.9</td>
<td></td>
<td>PCBs</td>
<td>■</td>
<td>1998</td>
</tr>
<tr>
<td>Underwood Creek</td>
<td>2.84</td>
<td>Bluemound Rd and UPS pedestrian bridge to confluence with Menomonee River south of North Ave. City of Wauwatosa</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td>2.84</td>
<td></td>
<td>Total Phosphorus</td>
<td>●</td>
<td>Proposed 2012</td>
</tr>
<tr>
<td>South Branch of Underwood Creek</td>
<td>5.7</td>
<td>Calhoun Rd to UPS pedestrian path/bridge at confluence with South Branch of Underwood Creek City of Brookfield and Village of Elm Grove</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td>5.7</td>
<td></td>
<td>Unknown Pollutant*</td>
<td>●</td>
<td>Proposed 2012</td>
</tr>
<tr>
<td>South Branch of Underwood Creek</td>
<td>1</td>
<td>Underwood Creek Pkwy to confluence with Underwood Creek at UPS pedestrian path/bridge Cities of West Allis and Brookfield</td>
<td>Total Phosphorus</td>
<td>●</td>
<td>Proposed 2012</td>
</tr>
</tbody>
</table>
### Table 1 Continued

<table>
<thead>
<tr>
<th>Waterway Name</th>
<th>Segment Length (miles)</th>
<th>Location Description / MS4(s)</th>
<th>Pollutant of Concern</th>
<th>Impairment</th>
<th>Listing Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Branch Menomonee River</td>
<td>2.45</td>
<td>STH 41 Hubertus Rd to confluence with Goldendale Creek Village of Germantown</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td>Butler Ditch</td>
<td>2.9</td>
<td>East of CTH YY and north of STH 190 south and east to confluence with Menomonee River south of CTH VV City of Brookfield and Village of Menomonee Falls</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td>Lilly Creek</td>
<td>4.7</td>
<td>East of CTH YY and north of STH 190 north and east to confluence with Menomonee River north of STH 175 City of Brookfield and Village of Menomonee Falls</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td>Nor-X-Way Channel</td>
<td>4.9</td>
<td>North of STH 167 south to confluence with Menomonee River south of STH 41 City of Mequon and Villages of Germantown and Menomonee Falls</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
<tr>
<td>Willow Creek</td>
<td>2.8</td>
<td>South of CTH Q north to confluence with Menomonee River south of STH 41 Villages of Menomonee Falls and Germantown</td>
<td>Fecal Coliform</td>
<td>+</td>
<td>2010</td>
</tr>
</tbody>
</table>

Key: + Recreational Restrictions – Pathogens (●); Degraded Biological Community (▲); Low DO (●); Contaminated Fish Tissue or Sediment (■); Chronic Aquatic Toxicity (▲)

*Federal regulations, specifically 40 CFR section 130.7(b)(1), provide that water bodies included on State section 303(d) lists are those water bodies for which pollution controls required by local, State, or Federal authority are not stringent enough to meet water quality standards applicable to such waters. In addition, 40 CFR section 130.7(b)(4) requires States to identify, in each section 303(d) list submitted to EPA, the "pollutants causing or expected to cause violations of the applicable water quality standards." These regulatory provisions apply even if the cause of the impairment or source of the pollutant cannot be identified at the time of listing. Therefore, water bodies that are biologically impaired by an unknown cause or source are included on the Wisconsin's section 303(d) lists. WDNR anticipates that the unknown pollutant will be identified when a Total Maximum Daily Load (TMDL) study is initiated. Supplemental data collected during a TMDL study should assist in identifying the impairing pollutant so that the TMDL can be established.

In addition to pollutant stressors, many streams in this watershed have been concrete-lined, or straightened to convey floodwaters off the land faster. Lined streams provide almost no habitat and also degrade conditions in unlined downstream steam sections by creating highly erosive flow velocities during wet weather conditions and excessively warm water during low flow conditions. Constructed u-shaped channels can also contribute to flooding problems, as there is typically no floodplain to accommodate flows during extreme weather conditions. About 14.5 miles of streams in the watershed are concrete-lined or enclosed.
C. WATERSHED-BASED PERMIT STRUCTURE: This permit is a multi-party watershed-based permit, meaning the Menomonee River Watershed Permittees, while being individually responsible for satisfying the permit conditions within their respective MS4 service areas, will also have the option of collaborating on WATERSHED PROJECTS designed to target specific stakeholders, pollutants, and/or geographic areas or land uses to meet the needs and characteristics of the Menomonee River watershed. The Department will deem a municipality in compliance with any number of permit conditions identified under Parts II and III of this permit for active participation in a watershed project dependent on the scope of work, projected goals, and successful completion of the project. The process for proposing watershed projects is identified under Part IV of the permit.

Implementation of the GROUP CONDITIONS under Section II will be on a watershed-based scale while implementation of the INDIVIDUAL CONDITIONS under Section III will be primarily on a municipality-based scale. Should a municipality elect not to participate in the planning, implementation, and evaluation of a joint watershed project, then it will be responsible for compliance with the individual conditions under Part III and completion of an individual watershed project under Part IV. A municipality meeting a group condition will be in compliance with the permit even if implementation does not directly address discharges from the municipal separate storm sewer systems for which the municipality is the owner or operator.

D. AUTHORIZED DISCHARGES: This permit authorizes storm water point source discharges to waters of the state from the municipal separate storm sewer systems in the permitted areas. This permit also authorizes the discharge of storm water commingled 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.

E. WATER QUALITY STANDARDS

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 and NR 140, Wis. Adm. Code. For the term of this permit, compliance with water quality standards will be addressed by adherence to general narrative-type storm water discharge limitations and implementation of storm water management programs and practices.

2. This permit does not authorize water discharges that the Department, prior to authorization of coverage under this permit, 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 prior to authorization, 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.

F. WETLANDS: Each permittee’s MS4 discharge to a wetland shall comply with the wetland water quality standards provisions in ch. NR 103, Wis. Adm. Code.

G. ENDANGERED AND THREATENED RESOURCES: Each permittee’s MS4 discharge to an endangered or threatened resource shall comply with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats., and ch. NR 27, Wis. Adm. Code.

H. HISTORIC PROPERTY: No permittee’s MS4 discharge may 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.
I. GENERAL STORM WATER DISCHARGE LIMITATIONS: The Menomonee River Watershed Permittees may not discharge the following substances from the municipal separate storm sewer systems in amounts that have an unreasonable effect on receiving water quality or aquatic life:

1. Solids that may settle to form putrescence or otherwise objectionable sludge deposits.
2. Oil, grease, and other floating material that form noticeable accumulations of debris, scum, foam, or sheen.
3. Color or odor that is unnatural and to such a degree as to create a nuisance.
4. Toxic substances in amounts toxic to aquatic life, wildlife, or humans.
5. Nutrients conducive to the excessive growth of aquatic plants and algae to the extent that such growths are detrimental to desirable forms of aquatic life, create conditions that are unsightly, or are a nuisance.
6. Any other substances that may impair, or threaten to impair, beneficial uses of the receiving water.

J. INDIVIDUAL RESPONSIBILITY: Each Menomonee River Watershed Permittee is responsible for:

1. Compliance with conditions of this permit relating to discharges from those portions of the municipal separate storm sewer system where the municipality is the owner or operator.
2. Storm water management program implementation, as required by this permit, on portions of the municipalities that drain to the municipal separate storm sewer system where it is the owner or operator, except where the Department has determined that participation in the development and implementation of a watershed project on a watershed-based scale as identified under Part IV of this permit is acceptable. This includes carrying out programs and activities as required under Part III of this permit.
3. Working collaboratively with the other co-permittees as a member of the Menomonee River Watershed Permittees to meet the Group Conditions as required under Part II of this permit.
4. Maintaining an active role in the planning, implementation, and evaluation of watershed projects where the municipality has elected to participate.

K. SHARED RESPONSIBILITY: The Menomonee River Watershed Permittees will work together to comply with the provisions of Part II of this permit. The Menomonee River Watershed Permittees’ implementation of one or more of the conditions of this permit may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or organizations if the shared responsibility is approved by the Department.

L. EXCLUSIONS: The following are excluded from coverage under this permit:

1. Combined Sewer and Sanitary Sewer Systems:
Discharges of water from a wastewater treatment facility, 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 a separate individual permit.
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.

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 from an MS4, this permit does not satisfy the need to obtain any other permits for those discharges. This exclusion does not apply to each permittee’s responsibility to regulate construction sites within its jurisdiction in accordance with Part III - Sections C and D of this permit.

4. Indian Country:
Storm water discharges within Indian Country. The federal Clean Water Act requires that owners and operators of storm water discharges within Indian Country to obtain permit coverage directly from the United States Environmental Protection Agency.
Part II. GROUP CONDITIONS

The Menomonee River Watershed Permittees intend to collaborate and satisfy these conditions collectively. This does not prohibit the Menomonee River Watershed Permittees from continuing to develop and implement unique programs within their respective jurisdictional municipal boundaries.

A. PUBLIC INVOLVEMENT AND PARTICIPATION: The Menomonee River Watershed Permittees shall notify the public of activities required by this permit and to encourage input and participation from the public requiring these activities.

B. PUBLIC EDUCATION AND OUTREACH: The Menomonee River Watershed Permittees shall implement a public education and outreach program to increase the awareness of how the combined actions of human behavior influence storm water pollution and its effects on the environment. The public education and outreach program may incorporate cooperative efforts with other entities not regulated by this permit provided a mechanism is developed and implemented to track the results of these cooperative efforts and reported annually.

1. The Menomonee River Watershed Permittees shall be responsible for prioritizing education topics each year at an annual meeting. All topics shall be addressed at least once during the permit term with a minimum of 3 topics being addressed, either collectively or individually, each year. Topics may be repeated as necessary. The program shall identify target audiences, establish measurable goals, develop and implement a mechanism for evaluating effectiveness and, at a minimum, address the following:

   a. Illicit discharges from municipal separate storm sewer systems and associated water quality impacts.

   b. Sources of pollutant loadings and habitat degradation—such as sedimentation, thermal alterations, and increased flashiness of flows—in the watershed, including stormwater.

   c. Storm water runoff from residential properties and potential pollutant sources such as pet waste, hazardous household waste, automobile care, and lawn care.

   d. Storm water runoff from commercial properties and, where appropriate, educate specific businesses such as lawn care companies, golf courses, carwashes, and restaurants on storm water pollution prevention planning to reduce pollutant sources.

   e. Beneficial onsite reuse or proper management of leaves and grass clippings.

   f. Restorative and protective management of streambanks and shorelines by riparian landowners to minimize erosion and restore and enhance the ecological value of waterways.

   g. Infiltration and beneficial onsite reuse of residential storm water runoff from rooftops, driveways, and sidewalks through implementation of green infrastructure best management practices such as rain barrels, rain gardens, and permeable pavements.

   h. Proper design, installation, and maintenance of erosion and sediment control best management practices to minimize, with the intent of eliminating, sediment transport from construction sites. The program shall highlight the potential harmful effects on the environment from sediment in construction site runoff and shall target construction companies, individual operators, and developers as key audiences.
i. Routine inspection and maintenance of storm water best management practices by homeowner associations.

j. Watershed education and the contributions of point and nonpoint source pollution on waterbody and waterway impairments.

k. Best management practices for snow and ice removal and informing specific audiences such as snow removal/deicing companies, private residences, industrial and commercial facilities, and residents about resources that provide further information on methods of reducing application of chemical deicers while maintaining public safety.

2. The Menomonee River Watershed Permittees shall prepare and submit a joint report annually that includes the following:

   a. Public education and outreach programs executed during the calendar year, including topics addressed, target audiences reached, and the status of meeting measurable goals.

   b. A proposed work plan for public education and outreach programs to be conducted the following year. The work plan shall identify roles and responsibilities for each municipality.

3. The Menomonee River Watershed Permittees shall evaluate the effects of the outreach program through an updated survey of residents in the watershed or using other appropriate methods, and will document the results of the evaluation in a future annual report within this permit cycle.

C. ILLEGIT DISCHARGE NOTIFICATION: In the case of an illicit discharge which originates from any Menomonee River Watershed Permittee and which discharges directly to a storm sewer or property under the jurisdiction of any other Menomonee River Watershed Permittee, the municipality discovering the discharge shall notify the affected municipality within one working day.

D. ANALYSIS PROCEDURE FOR IDENTIFYING OUTFALLS LIKELY TO BE DISCHARGING SANITARY WASTEWATER: The Menomonee River Watershed Permittees will develop an analysis procedure to identify those outfalls which, based upon what is known about the age and condition of the associated stormwater conveyance systems and sanitary sewage conveyance systems, water quality conditions within receiving waters, and other available information the permittees consider relevant, are most likely to be conveying water contaminated with sanitary wastewater and should be screened for illicit discharges. This procedure shall address all known outfalls, regardless of size; however, all outfalls may not be identified for sampling. The permittees shall submit the procedure to the Department for its review and approval by March 31, 2014. Outfall screening according to the identified procedure shall be implemented within 6 months after receiving Department approval.

   **Note:** In partnership with the UW-Milwaukee Great Lakes Water Institute, Milwaukee Riverkeeper has monitored bacterial levels in storm sewer discharges to waterways in the Menomonee River watershed. This research has led to identifying sewersheds with a high likelihood of inflow and infiltration from failing sanitary sewer infrastructure and private sanitary laterals to municipal storm sewer systems as represented by the human strains of *Bacteroides* found in the monitored effluent. This kind of information, along with ongoing monitoring and research conducted by the Milwaukee Metropolitan Sewerage District, can assist the municipalities in refining the analysis approach and prioritizing areas for implementation.

   More information can be found at [http://www.milwaukeeriverkeeper.org/content/bacteria-testing](http://www.milwaukeeriverkeeper.org/content/bacteria-testing).

E. ANNUAL MEETING: The Menomonee River Watershed Permittees will meet once within the first twelve months of the permit cycle and annually thereafter to exchange information and set group
priorities. Topics to be addressed at these meetings shall include setting annual priorities for the permittee’s public education and outreach program; development, implementation, and modification of the permittee’s framework for desktop analyses for targeting illicit discharge detection and elimination efforts; review of progress since the last meeting toward implementation of joint projects, and other such topics as the permittees deem appropriate for discussion.

**Note:** The Menomonee River Watershed Permittees are encouraged to solicit comments and participation from nongovernmental organizations and other interested parties during the development and coordination of public education and outreach activities, illicit discharge detection and elimination analysis procedures, and preliminary planning of watershed projects.
Part III. INDIVIDUAL CONDITIONS

The following permit conditions apply to each municipality in the Menomonee River Watershed Permittees:

A. ILLICIT DISCHARGE DETECTION AND ELIMINATION: Each municipality shall continue to implement a program to detect and remove illicit connections and discharges to the municipal separate storm sewer system. Each municipality’s implementation of its program to detect and remove illicit connections and discharges may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or organizations if the shared responsibility is approved by the Department. The program shall include measurable goals and include all of the following:

1. An ordinance or other regulatory mechanism to prevent and eliminate illicit discharges and connections to the municipal separate storm sewer system. At a minimum, the ordinance or other regulatory mechanism shall:
   a. Prohibit the discharge, spilling or dumping of non-storm water substances or material into waters of the state or the storm sewer system.
   b. Identify non-storm water discharges or flows that are not considered illicit discharges. Non-storm water discharges that are not considered illicit discharges including 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 permittee as significant source of pollutants 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. Field screening during dry weather periods (typically 72 hours after any measurable rainfall) of the following municipal separate storm sewer system outfalls:
   a. Effective immediately at the start of permit coverage – All major outfalls which showed no indication of illicit discharges during the previous permit term. In any single year at least one fifth of such major outfalls shall be screened, on a rolling basis such that at the end of the permit term all major outfalls which showed no indication of illicit discharges during the previous permit term have been screened.
   b. Effective immediately at the start of permit coverage – All major outfalls which showed evidence of illicit discharges during the last two samplings under the preceding permit term shall be evaluated annually, at a minimum one time per year.
   c. Within 6 months of receiving approval by the Department for the analysis procedure described in Part II-Section E – Other outfalls, regardless of size, identified for illicit discharge screening under Part II-Section E, shall be evaluated on an ongoing basis, at a minimum one time per year or at an increased frequency as deemed appropriate by the municipality.
3. 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 illegal dumping. (include narrative in annual report)

   b. Field Analysis - If flow is observed, field analysis shall be conducted to determine the presence of illicit non-storm water discharges or illegal dumping. The field analysis shall include sampling total copper, total phenol, detergent, ammonia, and either fluoride or total chlorine unless written concurrence is obtained from the Department allowing use of alternative indicator parameters to more effectively detect illicit discharges such as with potassium or bacteria.

Note: The Department has written a guidance document to assist municipalities with development of field screening programs to determine the presence of illicit discharges from MS4 outfalls. The guidance can be found on the Departments website at: http://dnr.wi.gov/topic/stormwater/documents/MS4_IDDE_Guidance_3-2012.pdf

   i. Field screening points shall, where possible, be located downstream of any source of suspected illegal or illicit activity.

   ii. 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.

   iii. 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 building in the area, history of the area and land use types.

4. For those outfalls on an annual cycle, when evidence of illicit discharges is not found in two consecutive years, the outfall can be placed on the list for sampling once every five years. At a minimum, field screening shall be documented and include the visual observations and field analyses described under Part III-Section A-3.

5. Following approval of the analysis procedure described above in Part II-Section E, each municipality shall adapt the procedure to its local conditions. Each municipality shall screen those outfalls identified by the adapted analysis procedure using the procedures described in Part III-Section A-2-a and b.

For those outfalls for which bacterial testing indicates human fecal contamination the municipality, in consultation with the Department, shall initiate a systematic examination of the catchment area tributary to the outfall in an effort to determine and eliminate the source of the illicit discharge.

Note: The purpose of Part II-Section E is to identify sanitary cross connections or inflow and infiltration from aging sanitary sewer systems into the MS4. While fecal contamination from nonhuman sources in storm water runoff does pose a threat to water quality and human health, it is not considered an illicit discharge. However, the municipality may want to screen for fecal coliform to address concerns with contamination from nonhuman sources.
6. Procedures for responding to known or suspected illicit discharges. At a minimum, procedures shall be established for:

   a. Immediately investigating portions of the municipal separate storm sewer system 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 municipal separate storm sewer system including tracking the source of the spill if unknown.

   c. Preventing and containing spills that may discharge into or are already within the municipal separate storm sewer system.

   d. Immediately notifying the Department 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 results 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 Department in efforts to investigate and prevent such discharges from polluting waters of the state.

   e. Identified illicit discharges or connections shall be eliminated to the maximum extent practicable. If neither the source nor the non-stormwater discharge has been identified or observed within 6 months of beginning the investigation, then the municipality must maintain written documentation of the actions undertaken for review by the Department. A minimum of 3 separate investigations to observe and sample flow at the identified outfall must be made within the 6 month period. Outfalls with indeterminate sources and non-stormwater discharges shall continue to be screened annually.

   Once an illicit discharge is identified, the investigating municipality must contact the Department within 24 hours.

   f. To the maximum extent practicable, eliminating or minimizing leakage from sanitary conveyance systems into the municipal separate storm sewer system.

   g. Providing the Department with advance notice of the time and location of dye testing within a MS4. (Because the dye may get reported to the Department as an illicit discharge, the Department requires prior notification of dye testing.)

   h. In the case of an illicit discharge that originates from the municipality’s permitted area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the first municipality shall notify the affected municipality within one working day.

   i. The name, title, and phone number of the individual(s) responsible for responding to reports of illicit discharges and spills shall be included in the illicit discharge response procedure and submitted to the Department in accordance with Part V.B.3.

7. Once the source of an illicit discharge is detected and remediated, and confirmed by screening, no further field screening at the affected outfall(s) will be required during the permit term.

B. CONSTRUCTION SITE POLLUTANT CONTROL: The permittee shall continue to implement and enforce a program that establishes measurable goals and reduces the discharge of sediment and
construction materials from construction sites. The permittee through implementation of this program shall:

1. Conduct plan reviews to ensure site erosion control plans are in accordance with design, installation, and maintenance standards and specifications that meet or exceed the Department’s technical standards or permittee’s ordinance.

2. Conduct erosion control inspections at all sites within the permittee’s jurisdiction following the frequency and actions outlined in the permittee’s construction site pollutant control program. The permittee shall contact the Department if there are significant or repeat violations at a site, or if there are threats or impacts to waters of the state.

3. Maintain records of site inspections, including any follow up necessary on sites out of compliance with their site-specific erosion control plans, as identified in the permittee’s program.

4. Notify landowners who apply for local construction or land disturbance permits of the possible applicability of Subchapter III of NR 216, Wis. Adm. Code, Construction Site Storm Water Discharge Permits, or other Department waterway and wetland permits.

5. Enforce construction site performance standards equivalent to, or more restrictive than, those in ss. NR 151.11, Wis. Adm. Code on all sites including municipal projects applicable under the permittee’s ordinance.

6. Enforce erosion and sediment control plan requirements for landowners of construction sites equivalent to those contained in s. NR 216.46, Wis. Adm. Code including municipal projects applicable under the permittee’s ordinance.

7. Maintain and enforce the municipal ordinance regarding construction site storm water discharges. Within 12 months of the effective date of this permit, the municipal ordinance shall be updated to include all erosion and sediment control planning requirements, sediment control performance standards, and preventative measures promulgated January 1, 2011 under s. NR 151.11(6m), Wis. Adm. Code.

   **Note:** The County has identified in their permit application that in lieu of a County ordinance, the County defers to the applicable municipal construction erosion control ordinance for all county projects. Construction activities undertaken by Milwaukee County, as well as all other construction activities occurring on Milwaukee County owned lands, are required to follow the construction erosion control ordinance of the applicable municipality that the project is within.

8. Enforce permit coverage termination requirements for landowners of construction sites equivalent to those contained in s. NR 216.55, Wis. Adm. Code including removal of all temporary erosion and sediment control best management practices and complete site restoration with perennial vegetative cover.

C. POST-CONSTRUCTION STORM WATER MANAGEMENT. Each municipality shall continue to implement and enforce a program to control the quantity and quality of discharges from areas of new development and redevelopment, after construction is completed. The program shall include:

1. An ordinance or other regulatory mechanism to regulate post-construction storm water discharges from new development and re-development. Within 12 months of the effective date of this permit, the municipal ordinance shall be updated to include all post-construction

**Note:** The County has identified in their permit application that in lieu of a County ordinance, the County defers to the applicable municipal post-construction storm water discharge ordinance for all county projects. Construction activities undertaken by Milwaukee County, as well as all other construction activities occurring on Milwaukee County owned lands, are required to follow the post-construction storm water discharge ordinance of the applicable municipality that the project is within. To fulfill this permit requirement, the County can submit to the Department a declaration or other written policy that identifies this procedure.

At a minimum, the ordinance or other regulatory mechanism shall establish or include:

a. Applicability and jurisdiction that 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 within the jurisdiction of the permittee. To the extent possible, the jurisdiction shall include any adjacent developing areas that are planned to have a minimum density of 500 people per square mile, the urbanized area, and developing areas whose runoff will connect to the MS4.


c. Post-construction performance standards equivalent to or more restrictive than those in ss. NR 151.121 through 151.125, Wis. Adm. Code.

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

e. Permitting requirements, procedures and fees.

f. Long-term maintenance requirements for landowners and other persons responsible for long-term maintenance of post-construction storm water control measures.

g. Inspection and enforcement authority.

2. Procedures that will be used to for site planning which incorporate consideration of potential water quality impacts.

3. Procedures that will be used to ensure the long-term maintenance of storm water management facilities.

D. POLLUTION PREVENTION: Each municipality shall develop and implement a pollution prevention program that establishes measurable goals for pollution prevention. The program shall include:

1. Routine inspection and maintenance of municipal owned or operated structural storm water management facilities to maintain their pollutant removal operating efficiency.
2. Street sweeping and catch basin cleaning where appropriate. The program proposal shall identify the frequency of street sweeping and catch basin cleaning activities at specific locations in the municipality.

3. Management and disposal of street sweeping and catch basin cleaning waste.

4. If road salt or other deicers are applied by the permittee, no more shall be applied than necessary to maintain public safety.

   **Note:** The Wisconsin Department of Transportation (DOT) “Highway Maintenance Manual”, chapter 35, contains guidance on application of road salt and other deicers that can be used to determine whether or not application is necessary and what application rate is appropriate for deicing and ice prevention. This information is held on a secured server and users must first register with the state of Wisconsin to obtain and ID and password. You can learn more about getting connected to this secured server at: [http://www.dot.wisconsin.gov/business/extranet/](http://www.dot.wisconsin.gov/business/extranet/) The Wisconsin Department of Transportation (DOT) highway salt storage requirements are contained in ch. Trans 277, Wis. Adm. Code.

5. Management of leaves and grass clippings, which may include beneficial reuse and/or collection.

6. Storm water pollution prevention planning for municipal garages, storage areas and other municipal sources of storm water pollution, including quarterly inspections of these facilities.

7. Application of lawn and garden fertilizers on municipally controlled properties, with pervious surfaces over 5 acres each, no more frequently than a site-specific nutrient application schedule based on soil tests.

8. Education of appropriate municipal and other personnel involved in implementing this program.

9. Measures to reduce municipal sources of storm water contamination within source water protection areas. Wisconsin’s source water assessment program information is available at: [http://dnr.wi.gov/topic/drinkingwater/swap.html](http://dnr.wi.gov/topic/drinkingwater/swap.html)

E. **STORM WATER QUALITY MANAGEMENT:** Each municipality shall develop and implement a municipal storm water management program that controls the discharge of total suspended solids from the MS4 system to waters of the State. Since much of the phosphorus found in urban runoff is adsorbed to soil particles, it is reasonable to expect that implementation of actions under this permit that reduce total suspended solids loads will also reduce phosphorus proportionally with the intent to achieve designated use conditions in impaired waterways. The storm water management program shall achieve compliance with the developed urban area performance standards of s. NR 151.13(2), Wis. Adm. Code, for those areas of the municipality that were not subject to the post-construction performance standards of s. NR 151.12 or 151.24, Wis. Adm. Code. (Note: projects prior to Oct. 1, 2004). The program shall include:

1. If applicable, a storm water management plan that identifies a schedule for implementing best management practices necessary to achieve a 20 reduction in the annual average mass of total suspended solids discharging from the MS4 to waters of the state as compared to no controls. The municipality may elect to meet the 20 percent total suspended solids standard on a watershed or regional basis by working with other permittee(s) to provide regional treatment or other
measures that collectively meets the standard. Municipalities currently not achieving at least a 20 percent reduction must prepare and submit this plan to the Department within 12 months of the permit start date. Existing controls that collectively contribute to a given MS4 achieving greater than a 20 percent reduction in TSS loads from areas of existing development as of July 1, 2011, shall not be applied to increase the level of compliance of an MS4 with a level of reduction below 20 percent. The plan shall include the following:

a. Assessment of compliance with s. NR 151.13(2), Wis. Adm. Code must include an updated pollutant loading analysis using a model such as SLAMM, P8 or equivalent methodology approved by the Department.

b. Any agreements with an adjacent municipality, or with municipalities within a 10 digit hydrologic unit code level, to implement the required total suspended solids reduction.

c. Any long-term maintenance agreements with owners of non-public control measures where credit for the total suspended solids reduction is included in the analysis.

d. A cost-effectiveness analysis including the systematic comparison of alternatives to meet the 20 percent total suspended solids reduction based on the cost per pound of pollutant removed. This analysis shall take into account anticipated redevelopment or reconstruction projects and the cost to retrofit existing practices versus the cost to install practices during redevelopment or reconstruction. The analysis shall consider the cost to ensure long term maintenance of nonpublicly owned control practices for which the municipality is taking credit as well as publicly owned control practices, the source of funding for installation and maintenance of control measures, and competing interests for that funding source. The municipality may include an analysis of affordability in the cost–effectiveness analysis. The analysis shall consider the feasibility and commensurate increase in cost of installing a control measure where there are competing issues such as human safety and welfare, endangered and threatened resources, historic properties, and geographic features.

Note: Pursuant to s. NR 151.13(2), Wis. Adm. Code, the total suspended solids reduction requirements are applied to runoff from areas of urban land use and are not applicable to agricultural or rural land uses and associated roads. Additional MS4 modeling guidance for modeling the total suspended solids control is given on the Department’s Internet site at: http://dnr.wi.gov/topic/stormwater/standards/index.html

2. To the maximum extent practicable, continued operation and maintenance of all best management practices implemented on or before July 1, 2011 to achieve a total suspended solids reduction of more than 20 percent as compared to no controls.

F. IMPAIRED WATERBODIES AND TOTAL MAXIMUM DAILY LOAD REQUIREMENTS: Each municipality shall determine whether any part of its MS4 discharges to an impaired water body 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). Impaired waters are those that are not meeting applicable water quality standards.

1. If a permittee’s MS4 discharges to an impaired water body, 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 water body. 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 pollutant(s) of concern that contribute to the impairment of the water body and explain why these control measures and practices were chosen as opposed to other alternatives. Pollutant(s) of concern means a pollutant that is causing impairment of a water body.

**Note:** Tables showing identified impairments in the Menomonee, Fox, Kinnickinnic, Milwaukee, and Root River watersheds; the Oak Creek watershed; and the estuary area are included in Appendix A. There are 303(d) listings for bacteria and Total Phosphorus, along with certain other pollutants. Work is currently underway on TMDLs which will address the bacteria and phosphorus-related impairments in the Menomonee, Milwaukee, and Kinnickinnic River watersheds and the estuary area. Since much of the phosphorus found in urban runoff is adsorbed to soil particles, it is reasonable to expect that implementation of actions under this permit that reduce total suspended solids loads will also reduce phosphorus proportionally with the intent to achieve designated use conditions in impaired waterways.

The Department maintains a searchable database of impaired waterways. This publicly accessible database is available at [http://dnr.wi.gov/water/impairedSearch.aspx](http://dnr.wi.gov/water/impairedSearch.aspx)

2. After a permittee’s start date of coverage under this permit, the permittee may not establish a new MS4 discharge of a pollutant of concern to an impaired water body or increase the discharge of a pollutant of concern to an impaired water body unless the new or increased discharge causes the receiving water to meet applicable water quality standards.

**Note:** Once the Department approves a TMDL for an impaired water body to which the permittee discharges, the Department anticipates that when this permit is reissued in the next permit cycle it will include requirements necessary to achieve the TMDL wasteload allocation for the MS4. Approved TMDLs are listed on the Department Internet site at [http://dnr.wi.gov/topic/tmdls/tmdlreports.html](http://dnr.wi.gov/topic/tmdls/tmdlreports.html)

Table 2 provides an example of the way that wasteload allocations may be presented in the next permit cycle.

**Table 2. TEMPLATE FOR MS4 WASTE LOAD ALLOCATIONS BY MUNICIPALITY**

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Reach</th>
<th>Water Body Name</th>
<th>Water Body Extents</th>
<th>Reach Description</th>
<th>Annual TSS Waste Load Allocation (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCD Name</td>
<td>Reach No.</td>
<td>Local Name</td>
<td>Stream Mile to Mile</td>
<td>Landmark to Landmark</td>
<td>tons</td>
</tr>
<tr>
<td>MCD Name</td>
<td>Reach No.</td>
<td>Local Name</td>
<td>Stream Mile to Mile</td>
<td>Landmark to Landmark</td>
<td>tons</td>
</tr>
<tr>
<td>MCD Name</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>tons</td>
</tr>
</tbody>
</table>

G. **STORM SEWER SYSTEM MAP:** Each municipality shall develop and maintain a municipal separate storm sewer system map. The municipal storm sewer system map shall include:

1. Identification of waters of the state, watershed boundaries, name and classification of receiving waters, identification of whether the receiving water is listed as an impaired water under s. 303 (d) of the Clean Water Act, stormwater drainage basin boundaries for each MS4 outfall and municipal separate storm sewer conveyance systems.

2. Identification of all known municipal storm sewer system outfalls discharging to waters of the state or other municipal separate storm sewer systems. Major outfalls shall be categorized and priority outfalls for illicit discharge detection and elimination shall be identified.
3. Location of any known discharge to the municipal separate storm sewer system that has been issued a WPDES permit by the Department. A list of WPDES permit holders in the permittee’s area may be obtained from the Department.

4. Location of municipally owned or operated structural storm water facilities including detention basins, infiltration basins, and manufactured treatment devices. If the permittee will be taking credit for pollutant removal from privately-owned facilities they must be identified.

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

6. Location of municipal garages and other public works facilities.

7. Identification of streets.

H. ANNUAL REPORT. Each municipality shall submit an annual report for each calendar year unless the Department authorizes biannual reporting to be submitted the 2nd and 4th year of the permit term pursuant to s. NR 216.07(8) Wis. Adm. Code. The municipal governing body, interest groups and the general public shall be encouraged to review and comment on the annual report. The annual report shall include:

1. The status of implementing the permit requirements identified under Sections III and IV, including the status of meeting measurable program goals and compliance with permit schedules.

2. Updated storm sewer system maps, where necessary, to identify any new outfalls, structural controls, or other noteworthy changes.

3. A summary describing:
   a. The number and nature of inspections and enforcement actions conducted to ensure compliance with the required ordinances.
   b. Spill responses.
   c. Street sweeping frequency and the amount collected.
   d. Catch basin cleaning frequency and the amount collected.
   e. Department of Public Works yard inspections.
   g. Any other activities that have measurable results.

4. A summary of revisions made to the storm water management plan.

5. Proposed revisions to the storm water management plan.

6. A fiscal analysis which includes the annual expenditures and budget for the reporting year, and the proposed budget for the next year.
7. Identification of any known or perceived 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.

8. A duly authorized representative of each municipality shall sign and certify the annual report and include a statement or resolution that the municipal governing body or delegated representatives have reviewed or been appraised of the content of the annual report. A signed copy of the annual report and other required reports should be submitted to Bryan Hartsook, DNR Waukesha Service Center, 141 NW Barstow Street Room 180, Waukesha, WI 53188.
Part IV. WATERSHED PROJECTS

Each Menomonee River Watershed Permittee must participate in at least one project (joint or individual) designed to target specific stakeholders, pollutants, and/or geographic areas or land uses to meet the needs and characteristics of the Menomonee River watershed. Completion of these projects may satisfy any number of permit conditions identified under Parts II and III of this permit even if the participating municipality is not the owner and operator of the municipal storm sewer discharge directly affected by implementation of the watershed project.

A. PROJECT PROPOSALS: For each watershed project proposed, the participating Menomonee River Watershed Permittee(s) shall submit the following items to the Department for review and approval prior to implementation:

1. A project description including the scope, project budget and potential funding source(s), project schedule, anticipated water quality benefits from the project, and a description of how the project will satisfy compliance with other permit conditions.

2. A scientifically credible method estimating pollutant reductions that will be achieved.

3. Signed letters of support and/or all inter-municipal agreements identifying participation in the project.

   Note: Watershed restoration plans have been developed by Watershed Action Teams (WATs) in cooperation with the Southeastern Wisconsin Watersheds Trust, Inc. (SWWT) that identify priority project lists for implementation in the Menomonee River Watershed. Watershed data and recommendations from SEWRPC’s Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds as well as stakeholder involvement were used to develop the WAT plans. The Menomonee River Watershed Restoration plan can be accessed at http://www.swwtwater.org/home/publications.cfm

B. PROJECT EVALUATION: The participating Menomonee River Watershed Permittees shall report on the status of the project through submittal of the annual report, or annually if on a two-year reporting cycle, until project completion.
Part V. COMPLIANCE SCHEDULE

The Menomonee River Watershed Permittees shall comply with the specific permit conditions contained in Parts II. and III. in accordance with the following schedule:

PART II. GROUP CONDITIONS

A. PUBLIC EDUCATION AND OUTREACH: A joint public education and outreach program report shall be submitted to the Department by **March 31st of each year.** Survey results or other appropriate method for tracking behavioral change due to public education and outreach activities shall be submitted along with the joint report at least once during the permit term.

D. ANALYSIS PROCEDURE FOR IDENTIFYING OUTFALLS LIKELY TO BE DISCHARGING SANITARY WASTEWATER: An analysis procedure for identifying outfalls that have a stronger likelihood of discharging sanitary wastewater due to screening factors determined by the Menomonee River Watershed Permittees shall be submitted to the Department by **March 31, 2014.** Outfall screening according to the identified procedure shall be implemented within 6 months after receiving Department approval.

PART III. INDIVIDUAL CONDITIONS

B. CONSTRUCTION SITE POLLUTANT CONTROL: Each municipality shall submit a proposed updated construction site pollutant control ordinance to the Department by **December 1, 2013** for the Department’s review and approval. The Department shall provide the municipality the results of its review within 60 days of submission. Each municipality shall adopt the construction site pollutant control ordinance by **March 31, 2014.** Existing construction site pollutant control ordinances shall be enforced until Department approved ordinances are adopted.

C. POST-CONSTRUCTION STORM WATER MANAGEMENT: Each municipality shall submit a proposed updated post-construction storm water management ordinance to the Department by **December 1, 2013** for the Department’s review and approval. The Department shall provide the municipality the results of its review within 60 days of submission. Each municipality shall adopt the post-construction storm water management ordinance by **March 31, 2014.** Existing post-construction storm water management ordinances shall be enforced until Department approved ordinances are adopted.

E. STORM WATER QUALITY MANAGEMENT: If applicable, the long-term storm water management plan to achieve a 20 percent reduction of total suspended solids, including any updated pollutant loading analyses, to the Department by **December 1, 2013.**

G. STORM SEWER SYSTEM MAP: Each municipality shall submit an updated storm sewer system map to the Department with the Annual Report by **March 31**st of each year.

H. ANNUAL REPORT: Each municipality shall submit an annual report for the preceding calendar year by March 31**st** of each year. The first annual report (for calendar year 2012) shall be submitted to the Department by **March 31, 2013.**
Part VI. STANDARD CONDITIONS

The conditions in s. NR 205.07(1) and (3), Wis. Adm. Code, are incorporated by reference in this permit. The Menomonee River Watershed Permittees shall meet these requirements. Some of these requirements are outlined below in paragraph A. through R.. Requirements not specifically outlined below can be found in s. NR 205.07(1) and (3), Wis. Adm. Code.

A. DUTY TO COMPLY: The municipalities shall comply with all conditions of the permit. Any permit noncompliance is a violation of the permit and is grounds for enforcement action, permit revocation or modification, or denial of a permit reissuance application.

B. 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 schedule 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 municipality's ability to meet the remaining schedule dates.

C. NONCOMPLIANCE NOTIFICATION:
   1. Upon becoming aware of any permit noncompliance that may endanger public health or the environment, each municipality shall report this information by a telephone call to the Department within 24 hours. A written report describing the noncompliance shall be submitted to the Department within 5 days after the municipality 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.

   2. Reports of any other noncompliance not covered under General Condition's B, C.1, or E shall be submitted with the annual report. The reports shall contain all the information listed in General Condition C.1.

D. DUTY TO MITIGATE: Each municipality shall take all reasonable steps to minimize or prevent any adverse impact on the waters of the state resulting from noncompliance with the permit.

E. SPILL REPORTING: Each municipality shall immediately notify the Department, in accordance with ch. NR 706, Wis. Adm. Code, in the event of a spill or accidental release of hazardous substances which results in a discharge of pollutants into waters of the state. The Department shall be notified via the 24-hour spill hotline (1-800-943-0003).

F. PROPER OPERATION AND MAINTENANCE: Each municipality 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.
G. BYPASS: Each municipality may temporarily bypass storm water treatment facilities if necessary for maintenance, or due to runoff from a storm event which exceeds the design capacity of the treatment facility, or during an emergency.

H. DUTY TO HALT OR REDUCE ACTIVITY: Upon failure or impairment of best management practices identified in the storm water management program, each municipality shall, to the extent practicable and necessary to maintain permit compliance, modify or curtail operations until the best management practices are restored or an alternative method of storm water pollution control is provided.

I. 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.

J. ADDITIONAL MONITORING: If a municipality monitors any pollutant more frequently than required by the permit, the results of that monitoring shall be recorded and reported in accordance with this chapter. Results of this additional monitoring shall be included in the calculation and reporting of the data submitted in the annual report.

K. INSPECTION AND ENTRY: Each municipality shall allow an authorized representative of the Department, upon the presentation of credentials, to:

   1. Enter upon the municipal premises where a regulated facility or activity is located or conducted, or where records are required under the conditions of the permit.
   2. Have access to and copy, at reasonable times, any records that are required under the conditions of the permit.
   3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under the permit.
   4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

L. DUTY TO PROVIDE INFORMATION: Each municipality shall furnish the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking or reissuing the permit or to determine compliance with the permit. Each municipality shall also furnish the Department, upon request, copies of records required to be kept by the municipality.

M. 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.

N. DUTY TO REAPPLY: If any of the Menomonee River Watershed Permittees wish to continue an activity regulated by the permit after the expiration date of the permit, the municipality shall apply for a new permit at least 180 days prior to the expiration date of the permit. If a timely and complete application for a new permit is filed and the permit is not reissued by the time the existing permit expires, the existing permit remains in effect until the application is acted upon.

O. OTHER INFORMATION: Where a municipality becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the department, it shall promptly submit such facts or correct information to the department.
P. RECORDS RETENTION: Each municipality shall retain records of all monitoring information, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 5 years from the date of the sample, measurement, report or application. The Department may request that this period be extended by issuing a public notice to modify the permit to extend this period.

Q. PERMIT ACTIONS: As provided in s. 283.53, Wis. Stats., after notice and opportunity for a hearing the permit may be modified or revoked and reissued for cause. If a municipality files a request for a permit modification, revocation or reissuance, or a notification of planned changes or anticipated noncompliance, this action by itself does not relieve the municipalities of any permit condition.

R. SIGNATORY REQUIREMENT: All applications, reports or information submitted to the Department shall be signed for by a ranking elected official, or other person authorized by them who has responsibility for the overall operation of the municipal separate storm sewer system and storm water management program activities regulated by the permit. The representative shall certify that the information was gathered and prepared under their supervision and based on inquiry of the people directly under their supervision that, to the best of their knowledge, the information is true, accurate, and complete.

S. ENFORCEMENT ACTION: The Department is authorized under s. 283.89 and 283.91, Wis. Stats., to use citations or referrals to the 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 violation.

T. ATTAINMENT OF WATER QUALITY STANDARDS AFTER AUTHORIZATION: Except for situations where a TMDL has been approved by US EPA during the term of this permit, 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:

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

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.
Part VII. DEFINITIONS

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

**Controls Condition** means a pollutant-loading analysis that includes pollutant reductions from storm water management practices.

**Department** means Department of Natural Resources.

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

**Hazardous substance** means any substance 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.

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

**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 water line flushing, landscape irrigation, individual residential car washing, firefighting and similar discharges.

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

**Infiltration system** means a device or practice such as a basin, trench, rain garden or swale designed specifically to encourage infiltration, but does not include natural infiltration in pervious surfaces such as lawns, redirecting of rooftop downspouts onto lawns or minimal infiltration from practices, such as swales or road side channels designed for conveyance and pollutant removal only.

**Jurisdiction** means the area where the permittee, or co-permittee, has authority to enforce its ordinance(s) or otherwise has authority to exercise control over a particular activity of concern.

**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, but is not limited to, clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities.

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

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

2. A single pipe with an inside diameter of 12 inches or more or equivalent conveyance (cross sectional area of 113 square inches) which receives runoff from land zoned for industrial activity and is associated with a drainage area of more than 2 acres.

**Maximum Extent Practicable** means a level of implementing management practices in order to achieve a performance standard or other goal which takes into account the best available technology, cost
effectiveness and other competing issues such as human safety and welfare, endangered and threatened resources, historic properties and geographic features.

**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:

1. Owned or operated by a municipality.
2. Designed or used for collecting or conveying storm water.
3. Which is not a combined sewer conveying both sanitary and storm water.

**No Controls Condition** means a pollutant-loading analysis that does not include pollutant reductions from storm water management practices.

**Outstanding and Exceptional Resource Waters** are listed in ss. NR 102.10 and 11, Wis. Adm. Code.

**Outfall** means the point at which storm water is discharged to waters of the state or leaves one municipality and enters another.

**Permittee** means the owner or operator, or a group of owners or operators, of a municipal separate storm sewer system authorized to discharge storm water into waters of the state.

**Permitted Area** refers to the areas of land under the jurisdiction of the Menomonee River Watershed municipalities that drains into their MS4, which is regulated under a permit issued pursuant to subch. I of NR 216, Wis. Adm. Code.

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

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

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

**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.

**Storm Water Pollution Prevention Planning** 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.

**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.

**Waters of the State** include surface waters, groundwater and wetlands.

**WPDES Permit** means a Wisconsin Pollutant Discharge Elimination System permit issued pursuant to ch. 283, Wis. Stats.
### Appendix A

#### Table A-1

**IMPAIRED WATERS WITHIN THE MENOMONEE RIVER WATERSHED: 2012**

<table>
<thead>
<tr>
<th>Stream</th>
<th>Impairment</th>
<th>Extent (river mile)</th>
<th>Contributing Pollutants</th>
<th>Listing Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butler Ditch</td>
<td>Recreational restrictions-pathogens</td>
<td>0-2.9</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>Goldendale Creek</td>
<td>Recreational restrictions-pathogens</td>
<td>0-3.5</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>Honey Creek</td>
<td>Degraded biological community</td>
<td>0-8.96</td>
<td>Total phosphorus</td>
<td>Proposed 2012</td>
</tr>
<tr>
<td></td>
<td>Recreational restrictions-pathogens</td>
<td>0-10</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>Lilly Creek</td>
<td>Recreational restrictions-pathogens</td>
<td>0-4.7</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>Little Menomonee Creek</td>
<td>Recreational restrictions-pathogens</td>
<td>0-3.9</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>Little Menomonee River</td>
<td>Chronic aquatic toxicity</td>
<td>0-9</td>
<td>Creosote</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Degraded biological community</td>
<td>0-9</td>
<td>Total phosphorus</td>
<td>Proposed 2012</td>
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<td></td>
<td>Recreational restrictions-pathogens</td>
<td>0-3.9</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>Menomonee River</td>
<td>Low dissolved oxygen</td>
<td>0-2.67</td>
<td>Total phosphorus</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Chronic aquatic toxicity</td>
<td>0-2.67</td>
<td>Unspecified metals</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Contaminated fish tissue</td>
<td>0-2.67</td>
<td>PCBs</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Recreational restrictions-pathogens</td>
<td>0-2.67</td>
<td><em>Escherichia coli</em></td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Recreational restrictions-pathogens</td>
<td>0-2.67</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td>Recreational restrictions-pathogens</td>
<td>2.67-6.27</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>Nor-X-Way Channel</td>
<td>Recreational restrictions-pathogens</td>
<td>0-4.9</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>South Branch Underwood Creek</td>
<td>Degraded biological community</td>
<td>0-1</td>
<td>Total phosphorus</td>
<td>Proposed 2012</td>
</tr>
<tr>
<td>Underwood Creek</td>
<td>Degraded biological community</td>
<td>0-2.84</td>
<td>Total phosphorus</td>
<td>Proposed 2012</td>
</tr>
<tr>
<td></td>
<td>Degraded biological community</td>
<td>2.84-8.54</td>
<td>Unknown pollutant</td>
<td>Proposed 2012</td>
</tr>
<tr>
<td></td>
<td>Recreational restrictions-pathogens</td>
<td>0-8.54</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>West Branch Menomonee River</td>
<td>Recreational restrictions-pathogens</td>
<td>0-2.45</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>Willow Creek</td>
<td>Recreational restrictions-pathogens</td>
<td>0-2.8</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
</tbody>
</table>

*Source: Wisconsin Department of Natural Resources.*
# Table A-2

## IMPAIRED WATERS IN MENOMONEE RIVER WATERSHED MUNICIPALITIES LOCATED IN WATERSHEDS ADJACENT TO THE MENOMONEE RIVER WATERSHED: 2012

<table>
<thead>
<tr>
<th>Stream</th>
<th>Impairment</th>
<th>Extent (river mile)</th>
<th>Contributing Pollutants</th>
<th>Listing Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fox River Watershed</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Deer Creek</td>
<td>Degraded habitat</td>
<td>0-8.09</td>
<td>Elevated water temperature</td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td>Degraded habitat</td>
<td>0-8.09</td>
<td>Sediment/total suspended solids</td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td>Excess algal growth</td>
<td>0-8.09</td>
<td>Total phosphorus</td>
<td>1998</td>
</tr>
<tr>
<td>Fox River</td>
<td>Contaminated fish tissue</td>
<td>151.34-196.64</td>
<td>PCBs</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Contaminated fish tissue</td>
<td>151.34-180.1</td>
<td>PCBs</td>
<td>1998</td>
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<tr>
<td></td>
<td>Contaminated fish tissue</td>
<td>175.32-176.13</td>
<td>Mercury</td>
<td>1998</td>
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<td></td>
<td>Degraded biological community</td>
<td>113.24-151.34</td>
<td>Total phosphorus</td>
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<tr>
<td></td>
<td>Degraded habitat</td>
<td>171.45-175.32</td>
<td>Sediment/total suspended solids</td>
<td>1998</td>
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<tr>
<td></td>
<td>Low dissolved oxygen</td>
<td>176.13-187.16</td>
<td>Sediment/total suspended solids</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Low dissolved oxygen</td>
<td>176.13-187.16</td>
<td>Total phosphorus</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Low dissolved oxygen</td>
<td>171.45-175.32</td>
<td>Total phosphorus</td>
<td>1998</td>
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<td>Low dissolved oxygen/turbidity</td>
<td>175.32-176.13</td>
<td>Sediment/total suspended solids</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Low dissolved oxygen/turbidity</td>
<td>175.32-176.13</td>
<td>Total phosphorus</td>
<td>1998</td>
</tr>
<tr>
<td>Lannon Creek</td>
<td>Degraded habitat</td>
<td>0-5.48</td>
<td>Sediment/total suspended solids</td>
<td>1998</td>
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<tr>
<td>Master Disposal Drainage Channel</td>
<td>Chronic aquatic toxicity</td>
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<td>Unknown pollutant</td>
<td>1998</td>
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<td>Poplar Creek</td>
<td>Low dissolved oxygen</td>
<td>0-8.06</td>
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<tr>
<td>Kinnickinnic River Watershed</td>
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<tr>
<td>Cherokee Creek</td>
<td>Recreational restrictions-pathogens</td>
<td>0-1.6</td>
<td>Fecal coliform bacteria</td>
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<td>Holmes Avenue Creek</td>
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<td>Kinnickinnic River</td>
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<td>Total phosphorus</td>
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</tr>
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<td></td>
<td>Contaminated fish tissue</td>
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<td>PCBs</td>
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<td></td>
<td>Chronic aquatic toxicity</td>
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<td>Metals</td>
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<td>Degraded biological community</td>
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<td>Recreational restrictions-pathogens</td>
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<td>Escherichia coli</td>
<td>1998</td>
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<td></td>
<td>Recreational restrictions-pathogens</td>
<td>0-9.61</td>
<td>Fecal coliform bacteria</td>
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<td>Lyons Park Creek</td>
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<td>0-1.5</td>
<td>Fecal coliform bacteria</td>
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<td>South 43rd Street Ditch</td>
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<td>Total phosphorus</td>
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<td>Recreational restrictions-pathogens</td>
<td>0-1.16</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
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<tr>
<td>Stream</td>
<td>Impairment</td>
<td>Extent (river mile)</td>
<td>Contributing Pollutants</td>
<td>Listing Date</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------</td>
<td>---------------------</td>
<td>------------------------------------------</td>
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</tr>
<tr>
<td>Kinnickinnic River Watershed (continued)</td>
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<td>Villa Mann Creek</td>
<td>Recreational restrictions-pathogens</td>
<td>0-1.2</td>
<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>Wilson Park Creek</td>
<td>Recreational restrictions-pathogens</td>
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<td>Fecal coliform bacteria</td>
<td>2010</td>
</tr>
<tr>
<td>Milwaukee River Watershed</td>
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<tr>
<td>Beaver Creek</td>
<td>Chronic aquatic toxicity</td>
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<tr>
<td>Lincoln Creek</td>
<td>Chronic aquatic toxicity</td>
<td>0-9.0</td>
<td>Unspecified metals</td>
<td>1998</td>
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<tr>
<td></td>
<td>Chronic aquatic toxicity</td>
<td>0-9.0</td>
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<td></td>
<td>Degraded biological community</td>
<td>0-9.7</td>
<td>Total phosphorus</td>
<td>Proposed 2012</td>
</tr>
<tr>
<td></td>
<td>Degraded habitat</td>
<td>8.5-9.0</td>
<td>Sediment/total suspended solids</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Elevated water temperature-degraded habitat</td>
<td>0-8.5</td>
<td>Sediment/total suspended solids</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Low dissolved oxygen</td>
<td>0-9.0</td>
<td>Total phosphorus</td>
<td>1998</td>
</tr>
<tr>
<td>Milwaukee River</td>
<td>Contaminated fish tissue/contaminated sediment</td>
<td>0-2.9</td>
<td>PCBs</td>
<td>1998</td>
</tr>
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<td></td>
<td>Contaminated fish tissue</td>
<td>2.9-19.35</td>
<td>PCBs</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Contaminated sediment</td>
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<td>Unspecified metals</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Low dissolved oxygen</td>
<td>0-2.9</td>
<td>Total phosphorus</td>
<td>1998</td>
</tr>
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<td></td>
<td>Recreational restrictions-pathogens</td>
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<td>Escherichia coli</td>
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<td>Oak Creek</td>
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<td></td>
<td>Degraded biological community</td>
<td>0-13.32</td>
<td>Total phosphorus</td>
<td>Proposed 2012</td>
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<tr>
<td>Root River Watershed</td>
<td>Low dissolved oxygen</td>
<td>20.48-43.95</td>
<td>Sediment/total suspended solids</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>Low dissolved oxygen</td>
<td>20.48-43.95</td>
<td>Total phosphorus</td>
<td>1998</td>
</tr>
</tbody>
</table>

Source: Wisconsin Department of Natural Resources.