

**COUNTY OF MILWAUKEE  
INTEROFFICE COMMUNICATION**

Date: April 8, 2013

To: Marina Dimitrijevic, Chairperson, Milwaukee County Board of Supervisors

From: Greg High, Director, Architecture, Engineering and Environmental Services Section

Subject: **Milwaukee County NR 216 Permit Annual Report  
Informational Report**

**Background**

The Wisconsin Department of Natural Resources (WDNR) issued an NR 216 Stormwater Permit to Milwaukee County on December 15, 2006. The permit requires that Milwaukee County submit an annual report to the WDNR by March 31<sup>st</sup> each calendar year. The annual report provides status updates on each of the permit requirements. The permit further requires that the Milwaukee County Board of Supervisors review or be apprised of the content of the report.

Prepared by: Tim Detzer, P.E. Environmental Engineer

Approved by:

  
\_\_\_\_\_

Gregory High, P.E. Director  
Architecture, Engineering and Environmental Services Section.

Attachments: 2012 Annual Report, Milwaukee County NR 216 Permit

cc: Chris Abele, County Executive  
Supervisor Gerry Broderick, Parks, Energy & Environment Committee  
Chairman  
Amber Moreen, Chief of Staff  
Scott Manske, Comptroller  
Pam Bryant, Comptroller Office  
Craig Kammolz, Fiscal & Budget Director, DAS  
Josh Fudge, Budget Analyst, DAS  
Kimberly Walker, Corporation Counsel  
Martin Weddle, Research Analyst, County Board  
Don Tyler, Director, Department of Administrative Services  
Janelle Jensen, Parks, Energy & Environment Committee Clerk

## MS4 Annual Report (Due by March 31, 2013)

Please use this template to assist in compiling information for the annual report. Use of this template is optional. Please refer to the permit language for the information minimally required to be submitted in the reporting year. If you have any questions, please contact Bryan Hartsook at (262) 574-2129 or by email at [Bryan.Hartsook@wisconsin.gov](mailto:Bryan.Hartsook@wisconsin.gov). Please submit a signed copy of the annual report and any attachments to my attention at the Waukesha Service Center: 141 NW Barstow St., Rm 180, Waukesha, WI 53188

\*\* ELECTRONIC SUBMITTALS ARE ACCEPTABLE \*\*

Municipality: <b>Milwaukee County</b>		Reporting Year: <b>2012</b>	
Name of Permit Group (if applicable):	WPDES Permit No. <b>WI-S050113-1</b>	Facility ID No. (FIN):	
<b>Contact Information:</b>			
Name: <b>Tim Detzer</b>		Title: <b>Environmental Engineer</b>	
Mailing Address: <b>2711 W. Wells Street #213</b>	City: <b>Milwaukee</b>	State: <b>WI</b>	Postal Code <b>53208</b>
E-mail Address: <a href="mailto:tim.detzer@milwcnty.com">tim.detzer@milwcnty.com</a>		Telephone No: <b>(414) 278-2988</b>	
<b>Section I. Summarize program activities implemented during the reporting year to maintain compliance with the six minimum control measures identified in the permit. Please include the management practice, individual or department responsible, measurable goals, and activities planned for next year. Amendments to the planned activities and/or changes to measurable goals should also be identified. Add rows or attach additional sheets as needed</b>			
<b>A. PUBLIC INVOLVEMENT, EDUCATION, AND OUTREACH</b>			
<u>BMP Description:</u>			
<b>Turf Quality Workshop</b> On April 27, Milwaukee County hosted a workshop on maintaining turf quality while using less fertilizer. Fortin Consulting led the workshop. The intent of the workshop was to educate about ways to reduce fertilizer amounts, thereby saving money and reducing negative impacts on nearby waterways.			
<b>Franklin Sports Complex Parking lot</b> On November 8, a media event was held to recognize the opening of the reconstructed parking lot at the Sports Complex. The parking lot features permeable pavement, which will reduce the impact from storm water runoff to the nearby Root River. The Milwaukee County Parks also posted construction progress on their Facebook Page and permanent signage is planned for 2013 to educate Sports Complex visitors.			
<b>Menomonee River Group Public Education Committee</b> In 2012 Milwaukee County made a \$1,600.00 contribution to support a regional public education program spearheaded by the Menomonee River Group Public Education Committee. These funds were used to develop and implement a multi-media public education program.			
<b>Milwaukee County Zoo</b> The Milwaukee County Zoo has erected a sign to educate the more than 1.2 million yearly visitors on storm water runoff. They also plan to erect signs to describe the rainwater collection system that were installed in 2012 (See Section F).			
<u>Responsible Dept./Person:</u>			
Department of Administration, Facilities Management Division, Architecture, Engineering & Environmental Services Section			

Measurable Goal(s):

Please see above section BMP Description

Progress Made Towards Achieving Goal(s):

Please see above section BMP Description

Planned Activities for Next Reporting Year:

A green roof was installed on top of one of the flat roof buildings connecting the Domes at Mitchell Park Conservatory. An educational display will be installed inside the building to show how the green roof was constructed and to describe its benefits.

Milwaukee County intends to continue its support of the Menomonee River Group Public Education Committee.

Program Modifications or Changes to Measurable Goal(s):

NA

**B. ILLICIT DISCHARGE DETECTION AND ELIMINATION**Screening Strategy (priority areas identified in plan?):

Milwaukee County's strategy for detecting illicit discharges and connections is described by the following activities:

1. maintenance and upgrades at County facilities
2. development and implementation of SWPPPs at applicable facilities
3. field screening of major outfalls
4. tracking and containing spills
5. regular maintenance of storm sewers
6. continued refinement of the County's stormwater map
7. education of County employees
8. Milwaukee County's CMOM Program
9. targeted illicit connection program

Number of Outfalls Screened, Parameters Used, Detection Limits:

See Attachment 1

Number of Illicit Discharges / Illegal Connections Detected (identify outfall ID numbers):

No illicit discharges or detection were found in 2012.

In 2012 Milwaukee County investigated an incident where foaming was reported at stormwater pond #1 on the County Grounds. After investigation it was determined that the foaming was caused by a fire suppressant that entered the storm system as a result of the Wauwatosa Fire Department putting out a coal fire at the WE Energies power plant on Watertown Plank Road.

Screening Strategy for Next Reporting Year (identify priority areas / basins and outfall ID's):

The standard screening strategy as outline above will continue in 2013.

Milwaukee County will also be continuing an investigation into sources of human fecal contamination in stormwater outfalls owned by Milwaukee County. The investigation will be conducted by Clark Dietz using storm sewer and sanitary sewer mapping and the analytical results of outfall sampling performed by the Great Lakes Water Institute. In 2013, several outfalls along the Menomonee River with a history of human fecal contamination will be monitored during dry weather for flow and water samples will be taken if flow is present.

Storm Sewer Map Updated? (summarize changes identifying basins and outfall ID's):

There were no updates to Milwaukee County's storm sewer map in 2012.

**C. CONSTRUCTION SITE POLLUTANT CONTROL**Target Number of Inspections (measurable goal, can be represented as percentage of permits issued):

Milwaukee County does not issue construction site erosion control permits, but defers to municipalities within Milwaukee County to write and enforce ordinances. Milwaukee County conforms to local municipal erosion control ordinances on all applicable construction sites.

Number of Permit Applications Received / Number of Permits Issued:

NA

Individual(s) Responsible for Plan Review, Inspection, and Enforcement Procedures:

NA

Number of Inspections Completed:

NA

Number of Enforcement Actions and Description:

NA

Changes in Inspection and /or Enforcement Strategy and Protocol:

NA

**D. POST-CONSTRUCTION STORM WATER MANAGEMENT**Number of Storm Water Management Plans Reviewed:

Milwaukee County reviews stormwater management plans for development on and connections to County stormwater structures within County Trunk Highways. These plans are also reviewed by the local municipality. There were no plans reviewed in 2012.

Approved or Scheduled Ordinance Updates:

None. Milwaukee County defers to local municipalities within the County to write and enforce post-construction storm water management ordinances.

Number of Redevelopment Sites Reviewed:

There were no redevelopment sites reviewed in 2012.

Are you Documenting TSS Reductions Achieved on Redeveloped Sites? (for later inclusion in MS4 pollutant loading analysis):

Milwaukee County will not be taking TSS reduction credit for redevelopment along County Trunk Highways.

Inspection and/or Scheduled Maintenance of Facilities Where a Long-Term Maintenance Agreement was Recorded:

None.

**E. POLLUTION PREVENTION**

Estimate quantity of Street Sweepings and Catch Basin Cleanings Collected:

Milwaukee County has collected approximately 426 cubic yards of material through street sweeping and 44 cubic yards from catch basin cleaning. Please see attachment 2.

Summarize Findings of Municipal Yard Inspection(s), SWPPP Implemented and Up to Date?:

All Stormwater Pollution Prevention Plans are up to date. See attachment 3 for inspection reports.

Updates to Yard Waste Collection:

Milwaukee County does not collect residential yard waste. Plant material from parks and County facilities is collected and reused. Woody materials are chipped for mulch and grass clippings and leaves are left in place except on golf courses where they are moved to a different location.

Winter Road Maintenance Program (description and estimate quantity of anti-icing or deicing materials used):

		STATE	COUNTY
Salt:	26,438 tons	22,962	3,476
Liquid CaCl:	25,670 gals.	21,150	4,520
Dry CaCl:	15.33 tons	14	1.33
Salt Brine:	39,085 gals.	35,885	3,200
Sand/Salt:	0 tons	0	0

Planned Activities for Next Reporting Year:

Milwaukee County has hired Sigma Environmental to design a catch basin dewatering system to dewater material removed from catch basins prior to disposal at a licensed landfill. The intent is to lower the cost of landfilling the material to be able to clean more catch basins within existing budgets. The design has been on hold because the target site is within areas being considered for the Wisconsin Department of Transportation's Zoo Interchange reconstruction.

Program Modifications or Changes:

NA

**F. STORM WATER QUALITY MANAGEMENT**

Have there been any changes in implementation, maintenance, mapping or modeling of storm water management practices in the past year? If yes, please complete the remainder of Section F.

Yes	No

Pollutant Loading Analysis:

Date of last model run:	2010	"No Controls" Load (tons/yr):	1,218,826.20	"With Controls" Load (tons/yr):	782,880.40
Model Version Used:	SLAMM 9.4.0	Average Unit Area Load (lbs/acre/yr):		TSS Reduction %	35.8

Storm Water Management Plan:

If TSS percent reduction is less than 20%, has a strategy been developed under a municipal-wide storm water management planning effort to achieve compliance?

Projected Timeframe to Achieve 20% TSS Reduction (if applicable):

BMPs Implemented in Reporting Year:

The Milwaukee County Sports Complex parking lot was reconstructed and includes a large 2-acre area of permeable pavers to reduce the amount of polluted storm water runoff from the site that flows into the nearby Root River.

The Doctors Park parking lot reconstruction included a sedimentation chamber to reduce polluted runoff and a 30% reduction in total impervious area.

A green roof was installed at the Milwaukee County Domes.

The Milwaukee County Zoo installed two cisterns that collect roof runoff. The water is used for washing pavement.

BMP Maintenance Activities in Reporting Year:

Street sweeping and catch basin cleaning were completed. See Attachment 2.

BMP Inspections are completed twice annually. See Attachment 4.

Agreements or Discussions with Other Municipalities to Employ a Regional Watershed Approach?

Milwaukee County has joined the Menomonee River Watershed-Based MS4 Permit group.

Milwaukee County is assisting the MMSD on their efforts to develop a Regional Green Infrastructure (GI) Plan, that will serve to document the locations and benefits of existing GI, and identify mechanisms for stimulating more widespread implementation of GI in the MSSD service area. Environmental Services and Parks staff serve on the Technical Steering Committee.

Milwaukee County is also collaborating with 1000 Friends of Wisconsin, MMSD, and participating municipalities to promote watershed scale adoption of green infrastructure through updates to municipal codes and ordinances. The project will identify local codes and ordinances that are barriers to the implementation of green infrastructure and make recommendations and provide assistance to revise the codes. The project's focus area is the Menomonee River Watershed.

Planned Activities for Next Reporting Year:

General Mitchell International Airport is designing a green roof for the new baggage claim area. The green roof will be visible from the skywalks that lead from the parking garage to the terminal presenting another educational opportunity.

Milwaukee County is currently designing a treatment wetland at a stormwater outfall in the Menomonee River. The wetland will receive stormwater from a 100-acre treatment area. The project also involves the removal of a small dam. Construction is scheduled for 2014.

Milwaukee County is currently redesigning the 11-acre McKinley Marina parking lot. The design will incorporate stormwater BMPs to curb contaminated runoff from boat maintenance and vehicle parking areas. Construction is scheduled for 2014.

The Milwaukee County Department of Transportation through an MMSD Green Infrastructure grants will install permeable, articulating concrete block mats along three County highway shoulders to reduce erosion, improve water quality and lower right-of-way maintenance costs. In addition, one of the sites will be retrofitted with a subsurface gravel wetland to provide additional water quality benefits.

Locations of the work are: W. Rawson Ave between S. 92nd St. and state Highway 100; W. Layton Ave from S. 28th St. to S. 35th St.; and N. 107th St., between Brown Deer and County Line roads.

Program Modifications or Changes to Measurable Goal(s):

NA

**Section II. Identify any known or perceived water quality improvements or degradation in the receiving water to which the MS4 system discharges. Where degradation is identified, identify why and what actions are being taken to improve the water quality of the receiving water. Please describe the stream reach or lake effected and the basin / outfall ID contributing to the improvement or degradation.**

Milwaukee County anticipates that projects carried out in within the permit period will have positive water quality impacts. These projects include:

- Lake Michigan Outfalls as described in the NR 216 Permit (Bradford and McKinley Beaches)
- Pond & Lagoon Demonstration Projects (various locations)
- Boerner Botanical Gardens Rainwater Harvesting System
- Rain gardens, permeable pavers and green roof at the Milwaukee County Zoo
- Green Roof and pervious pavement installed at the Domes
- Franklin Sports Complex Pervious Pavers
- Doctors Park sedimentation chamber and pavement reduction

**Section III. Fiscal Analysis**

<i>Program Element</i>	<i>Annual Expenditure</i>	<i>2012 Budget</i>	<i>Source of Funds</i>
Public Involvement, Education and Outreach		\$ 31,900.00	
IDDE		\$ 27,364.00	
Construction Site Pollutant Control			
Post-Construction Storm Water Management			
Pollution Prevention		\$ 77,633.00	
Storm Water Quality Management	\$ 556,781.00	\$ 118,600.00	
Total	\$ 556,781.00	\$ 255,497.00	

This fiscal analysis reflects the permit obligation costs associated with the Environmental Services Unit of Milwaukee County's Architecture, Engineering and Environmental Services Division, the group tasked with compliance of the MS4 permit. Additional costs of permit compliance not included in this analysis are located within other departmental and/or project budgets. For example each construction project completed by Milwaukee County would have a construction site pollution control component as part of the specific project budget. Also, stormwater related projects completed by other departments such as the installation of pervious pavement at the zoo are not in this analyses.

The Annual Expenditure column reflects actual costs for the Environmental Services Unit in 2012 as described above. Milwaukee County does not track the various components of the analyses (e.g. Education, Public Involvement, IDDE, etc.) in Milwaukee County's accounting system. The total sum of all categories is contained in the "Storm Water Quality Management" category.



**Section IV. Certification Statement**

*I hereby certify that I am an authorized representative of the municipality covered under the MS4 permit for which this annual report*

Authorized Representative Printed Name:

Timothy Detzer

Title:

Environmental Engineer

Authorized Representative Signature:

Timothy Detzer

Date Signed:

3/28/13

**Attachment 1**  
**Outfall Screening**



Milwaukee County  
MS4 Annual Report  
Reporting Year 2012

**Attachment 2**  
**Street Sweeping and Catch Basin Cleaning**

**Attachment 2**  
**Street Sweeping and Catch Basin Cleaning**

County Highway	Sweeping Frequency*	Collected (Cubic yards)	CBs Cleaned	Collected (Cubic yards)
Silver Spring Dr	7	24	0	
Hampton Ave	3	18	0	0
Beloit Road	1	6	0	
S. 92nd St	1	3	0	
Oklahoma Ave	1	2	0	
Layton Ave	2	15	2	1
S. 76 St	4	24	3	1
Rawson Ave	1	3	0	
Mill Road	10	50	2	
Good Hope Rd	10	50	2	**
Teutonia Ave	5	24	2	**
43rd St	5	21	2	**
Port Washington Rd	6	18	2	**
107th St	3	12	2	**
College Ave	7	21	3	2
Layton Ave	6	18	4	2
Rawson Ave	7	21	1	1
South 13th Street	-	-	-	-
Zoo	177	78	25	19
Parks	2	18	-	-
<b>Total</b>		<b>426</b>		<b>26</b>

\*One unit is equal a distinct sweeping event not necessarily the entire roadway.

\*\* Amount collected not recorded.

\*\*\* Material was collected from trench drains, settling basins, grates and basins.

**Attachment 3**  
**Storm Water Pollution Prevention Plan Inspections**

For the purposes of this informational report, Pages 14 through 95 (Storm Water Pollution Prevention Plan Inspection Reports) have been deleted to save paper. They will be made available upon request.

Milwaukee County  
MS4 Annual Report  
Reporting Year 2012

**Attachment 4**  
**Storm Water Management Facility Inspections**

Spring 2012 Storm Water Management Facility Inspections

Inspection Type	Location Notes	Major Outfall?	Date Inspected	Date Sediment Depth Taken	GPS STRUCTURES	Serious Problems Reported to Owner?	Comments
Rain Garden & Infiltration		No					
Bradford Beach Outfalls		No	5/18/2012			X	Yes sent 8/21/12
Bradford Beach Parking lot Bio R		No	5/18/2012			X	Yes sent 8/21/12
Bradford Beach Parking lot and Chem		No	5/18/2012			X	Yes sent 8/21/12
Bradford Beach Outfall 7 (Lake Park	Tree saplings in Lake Park	No	6/14/2012			X	Received certificate of acceptance of MAASD Construction 2/13/12
Rain Garden & Infiltration	Near Dr	No					
Pond	Wisconsin Ave ponds	Yes					
County Grounds Basin 2 - Pond 1	Wisconsin Ave ponds	Yes					
County Grounds Basin 2 - Pond 2	Wisconsin Ave ponds	Yes					
County Grounds Basin 2 - Pond 3	Wisconsin Ave ponds	Yes					
County Grounds Pond 3	Near Underwood Parkway	Yes	6/14/2012				Pond to change with Zoo interchange work.
County Grounds Pond 10	Behind Children's Court	No					
Pond		No					
Benetmore Parkway		No					
Pond		No					
Pond		No					
Pond		No					
Pond		No					
Pond		No					
Pond		No					
Pond		No					
Pond		No					
Washington Park		No					
McKinley Rilligarden		No	5/18/2012				Pond awarded F.M. grant to convert to a wetland in 2013
McKinley Subsurface		No	5/18/2012				8/8/12 sent out pond and logan improvements main plan
College Ave		No	6/14/2012		X		8/8/12 sent out pond and logan improvements main plan
College Ave @ Loomis	College ave south east of airport	No	6/14/2012			X	Added to GIS
							Bad erosion issues Notified Transportation Engineering and Highways



Fall 2012 Storm Water Management Facility Inspections

Inspection Type	Location Notes	Major Outfall?	Date Inspected	Date Sediment Depth Taken	GPS STRUCTURES	Serious Problems Reported to Owners?	Comments
Bradford Beach Outfalls	Bradford Beach	No					
Bradford Beach Parking lot Bldg R	Bradford Beach	No					
Bradford Beach Parking lot and Charn	Bradford Beach	No					
Bradford Beach Outfall 7 (Lake Park	Bradford Beach	No					
County Grounds Pond 1	Near Dwyer Ave	Yes	11/19/2012				more from noticed. Wrote a memo to Steve Smith re investigation work
County Grounds Basin 2 - Pond 1	Wisconsin Ave ponds	Yes					
County Grounds Basin 2 - Pond 2	Wisconsin Ave ponds	Yes					
County Grounds Basin 2 - Pond 3	Wisconsin Ave ponds	Yes					
County Grounds Pond 3	Near Lindenwood Parkway	Yes					Pond to change with Zoo Interchange work. Reviewed and commented on plans 2012
County Grounds Pond 10	Behind Children's Court	No					
Greenfield Park		No					
Menomonee Parkway		No					
Brown Deer Park		No	10/18/2012				Pond awarded FUM grant to convert to a wetland in 2013
McGovern Park		No	10/16/2012				
Thompson Park		No					
Washington Park		No					
Washington Park		No					
Washington Park		No	10/24/2012				
Washington Park		No	10/24/2012				
Washington Substation		No					
Zoo Pavousa Pavement	Various Locations	no					Substantially Complete 10/2012
Sparks Complex Parking Lot		no					
Collage Ave	Collage Ave south east of airport	no					
Collage Ave @ Loomis		no	Many Times				Write recommendations and applied for 2014 capital budget to repair
Deeters Park Sed Sump			10/16/2012				