

City of Middleton



Stormwater Quality Plan NR216/NR151 TSS Reductions

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NPDES

The Phase II rule of the Federal National Pollutant Discharge Elimination System (NPDES) storm water program extends to small municipal separate storm sewer systems (MS4s) including all municipalities with a population of 10,000 or more.

In Wisconsin, the DNR is the EPA designated permitting authority. Phase II permits in Wisconsin, will be issued according to the procedures established in proposed revised rule NR 216 and must meet the standards in sub. 3 of NR 151.

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NPDES

NR216.06(2) Minimum Control Measures

To comply with NPDES rules, Middleton must develop and implement a storm water program that includes all of the following areas:

1. Public education and outreach
2. Public involvement and participation
3. Illicit discharge detection and elimination
4. Construction site pollution control
5. Post-construction stormwater management
6. Pollution prevention (“good housekeeping”)

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PROFESSIONAL ENGINEERS

MSA
PROFESSIONAL ENGINEERS

NPDES

NR216.06(6) Pollution Prevention

NR151.13(2)(b) Program

The standards outlined within these two chapters require that regulated communities, including the City of Middleton, achieve:

- A 20% reduction in total suspended solids in runoff that enters waters of the state as compared to no controls by 2008, and
- Implement management practices to achieve a 40% reduction in total suspended solids in runoff that enters waters of the state as compared to no controls, by March 10, 2013.

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TSS Assessment

Regulated TSS Load

City of Middleton Baseline Annual Total Suspended Solids Loads

Description	Area	Annual TSS Load
Study Area	14,714 ac	1084.5 tons/yr
City Limits	5,189 ac	678.9 tons/yr
Regulated Areas within City	3,670 ac	611.7 tons/yr

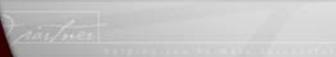


TSS Assessment

Current System Performance

City of Middleton Current Total Suspended Solids Reduction Performance

No Controls Annual Regulated Load	611.7 tons/yr
TSS Removed by Street Sweeping	15.3 tons/yr
Additional TSS Removed by Structural BMPs	202.0 tons/yr
Total TSS Removed	217.3 tons/yr
TSS Reduction Rate	35.5%



TSS Assessment

Street Sweeping Alternatives

City of Middleton Alternative Street Sweeping Programs TSS Reduction Performance

Description	Annual TSS Reduction		
	Current Sweeping Schedule	All Areas Swept Once per Week	All Areas Swept Twice per Week
Mechanical, No Parking Controls	2.5% ¹	5.3%	6.7%
Mechanical, With Parking Controls	3.7%	7.5%	N/A ²
Vacuum, No Parking Controls	5.2%	10.9%	15.1%
Vacuum, With Parking Controls	7.1%	14.2%	N/A ²

1. Reflects the City's current street sweeping program
2. Twice-per-week sweeping with parking controls was not evaluated because it is felt to be infeasible to ban parking twice per week for street sweeping activities.



TSS Assessment

Recommended Alternatives

City of Middleton Proposed BMPs for compliance with NR151 TSS Reduction Requirements

Alternative	Description	Total Annual TSS Reduction	Estimated Capital Cost
1	<ul style="list-style-type: none"> • Increase Mechanical Sweeping Program To Once Per Week Schedule – No Parking Controls • Construct Structural BMPs 200.01, 300.01, 1200.01 	40.1%	\$330,000
2	<ul style="list-style-type: none"> • Implement High Efficiency Street Sweeping, Once-per-Week with Parking Controls 	40.3%	\$400,000
3	<ul style="list-style-type: none"> • Implement High-Efficiency Street Sweeping At Current Frequency, No Parking Controls • Construct Structural BMPs 200.01, 300.01, 1200.01, 1100.01 	40.2%	\$615,000
4	<ul style="list-style-type: none"> • Maintain Current Sweeping Program • Construct Structural BMP 100.01 	43.0%	\$880,000

