A Successful MS4 Mindset: Resource Versus Requirement





CURRENT MINDSET?

Requirement Based: Checking Off Regulatory Boxes



ALTERNATIVE MINDSET EXAMPLE

Community Resource: Connecting Youth with Engaging Experiences



Today's presentation will review the six MS4 program Minimum Control Measures and provide examples of how to achieve a 'community resource' mindset for your local program.

What we mean by viewing the MS4 Program as a Community Resource in the words of elected officials:



Views of Elected Officials on the MS4 Program



Benefits:

- > Partnerships
- > Community Support
- > Economic Development
- > Quality of Life

Recommendations:

- > Cost Share
- > Educate Community
- > Partnerships
- > Just the Right Thing to Do





MCM 1: Public Education and Outreach

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MCM 5: Post-Construction
Runoff Control

MCM 6: Pollution Prevention & Good Housekeeping

EPA Guidance on MS4 Program Implementation

United States Environmental Protection Agency Office of Water (4203) January 2000 (revised December 2005) Fact Sheet 2.0

\$EPA

Stormwater Phase II Final Rule

Small MS4 Stormwater Program Overview

Stormwater Phase Final Rule Fact Sheet Series

Overview

1.0 – Stormwater Phase II Final Rule: An Overview

Small MS4 Program

2.0 - Small MS4 Stormwater Program Overview

2.1 – Who's Covered? Designation and Waivers of Regulated Small MS4s

2.2 - Urbanized Areas: Definition and Description

Minimum Control Measure

2.3 – Public Education and Outreach

2.4 – Public Participation/ Involvement

2.5 – Illicit Discharge Detection and Elimination

2.6 – Construction Site Runoff Control

2.7 – Post-Construction Runoff Control

2.8 - Pollution Prevention/Good Housekeeping

2.9 - Permitting and Reporting: The Process and Requirements

2.10 - Federal and State-Operated MS4s: Program Implementation

Construction Program

3.0 – Construction Program

3.1 – Construction Rainfall Erosivity Waiver

Industrial "No Exposure"

4.0 - Conditional No Exposure Exclusion for Industrial Activity Polluted storm water runoff is often transported to municipal separate storm sewer systems (MS4s) and ultimately discharged into local rivers and streams without treatment. EPA's Stormwater Phase II Rule establishes an MS4 stormwater management program that is intended to improve the Nation's waterways by reducing the quantity of pollutants that stormwater picks up and carries into storm sever systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and carelessly discarded trash, such as cigarette butts, paper wrappers, and plastic bottles. When deposited into nearby waterways through MS4 discharges, these pollutants can impair the waterways, thereby discouraging recreational use of the resource, contaminating drinking water supplies, and interfering with the habitat for fish, other aquatic organisms, and wildlife.

In 1990, EPA promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) stortwater program. The Phase I program for MS4s requires operators of "medium" and "large" MS4s, that is, those that generally serve populations of 100,000 or greater, to implement a stormwater management program as a means to control polluted discharges from these MS4s. The Stormwater Phase II Rule extends overage of the NPDES stormwater program to certain "small" MS4s but takes a slightly different approach to how the stormwater management program is developed and implemented.

What Is a Phase II Small MS4?

A small MS4 is any MS4 not already covered by the Phase I program as a medium or large MS4. The Phase II Rule automatically covers on a nationwide basis all small MS4s located in "urbanized areas" (UAs) as defined by the Bureau of the Census (unless waived by the NPDES permitting authority), and on a case-by-case basis those small MS4s located outside of UAs that the NPDES permitting authority designates. For more information on Phase II small MS4 coverage, see Fact Sheets 2.1 and 2.2.

What Are the Phase II Small MS4 Program Requirements?

Operators of regulated small MS4s are required to design their programs to:

- □ Reduce the discharge of pollutants to the "maximum extent practicable" (MEP);
- Protect water quality; and
- ☐ Satisfy the appropriate water quality requirements of the Clean Water Act.

Implementation of the MEP standard will typically require the development and implementation of BMPs and the achievement of measurable goals to satisfy each of the six minimum control measures.

The Phase II Rule defines a small MS4 stormwater management program as a program comprising six elements that, when implemented in concert, are expected to result in significant reductions of pollutants discharged into receiving waterbodies.

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Overall Strategic Plan

BMP	Responsible Party	Potential Partners	Milestones	Annual Report Tracking
TCPWQ Meetings	 TCPWQ determines 	Co-Permittees	<u>January:</u> Determine focus or annual theme of education	Number of meetings
	date/time/location	SWCD	and outreach efforts	Representatives in attendance
Monthly meetings to coordinate and	 Partners are free to provide 	SWMD	February: Determine list of potential partners relevant to	
communicate on Rule 13 activities	items to include on each	WREC	the annual focus	
Meeting summaries are to be prepared and	meeting agenda	Keep America Beautiful Chapters	 Gather names and contact information for each potential partner listed 	
provided to Partners			March: Contact suggested partners to gauge interest and	
			develop listing of events related to annual focus	
			On-going: address stormwater related issues and	
			compliance objectives during regular meetings	
TCPWQ Logo	TCPWQ	Co-Permittees	On-going: Logo is utilized when and where appropriate;	General description of use
	Public Educator	SWCD	Continue to utilize logo on all correspondence	Title of publication
Utilize Logo		SWMD	(letterhead, email signatures, brochures, etc.) or	Number printed or distributed
		WREC	information provided to the public	New efforts containing logo
K-12 Education	Public Educator	Lafayette School Corporation	June: Determine curricula that are related to the annual	Activity presented or attended and brief
		Tippecanoe County School Corporation	focus	description
Provide Project WET activities in K-12		West Lafayette Schools Corporation	July: Develop brochure highlighting what Project WET	Date and location
classrooms		Lafayette Catholic Schools	programs will be offered	Educator contact information
		NREC	July: Develop/adjust database of current K-12 contacts	Number of students in presentation
D. C.			and typical programs requested	Any feedback gathered from educator
Project Learning Tree (PLT)			July: Develop/adjust database of School Corporation	
KAB Curricula			contacts to provide information to educators via email,	
INAD CUITICUID			newsletter, etc.	
			August: Distribute brochure to individual School	

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BMP		Responsible Party	Potential Partners		Milestones	Annual Repor	t Tracking
Monthly meetings to coordin communicate on Rule 13 actions.	vities	TCPWQ determines date/time/location Partners are free to provide items to include on each meeting agenda	Co-Permittees SWCD SWMD WREC Keep America Beautiful Chapte	ers	January: Determine focus or annual theme of education and outreach efforts February: Determine list of potential partners relevant to the annual focus Gather names and contact information for each	Number of r Representat	neetings ives in attendance
Meeting summaries are to be provided to Partners		CURRENT MIND	SET?		ALTERNATIVE MINDSET		
TCDMO		Requirement Based			Resource Based		
TCPWQ Logo Utilize Logo K-12 Education		"We copy other communities flyers and brochures."		ł	"We develop brochures and activities based on our community's needs."		ription of use cation ted or distributed containing logo ented or attended and brief
Provide Project WET activities in K-12 classrooms Project Learning Tree (PLT)		West Lafayette Schools Corporation Lafayette Catholic Schools NREC		July: Develop brochure highlighting what Project WET programs will be offered July: Develop/adjust database of current K-12 contacts and typical programs requested July: Develop/adjust database of School Corporation	Date and location Educator contact information Number of students in presentation Any feedback gathered from educator		
KAB Curricula					contacts to provide information to educators via email, newsletter, etc. • <u>August</u> : Distribute brochure to individual School		

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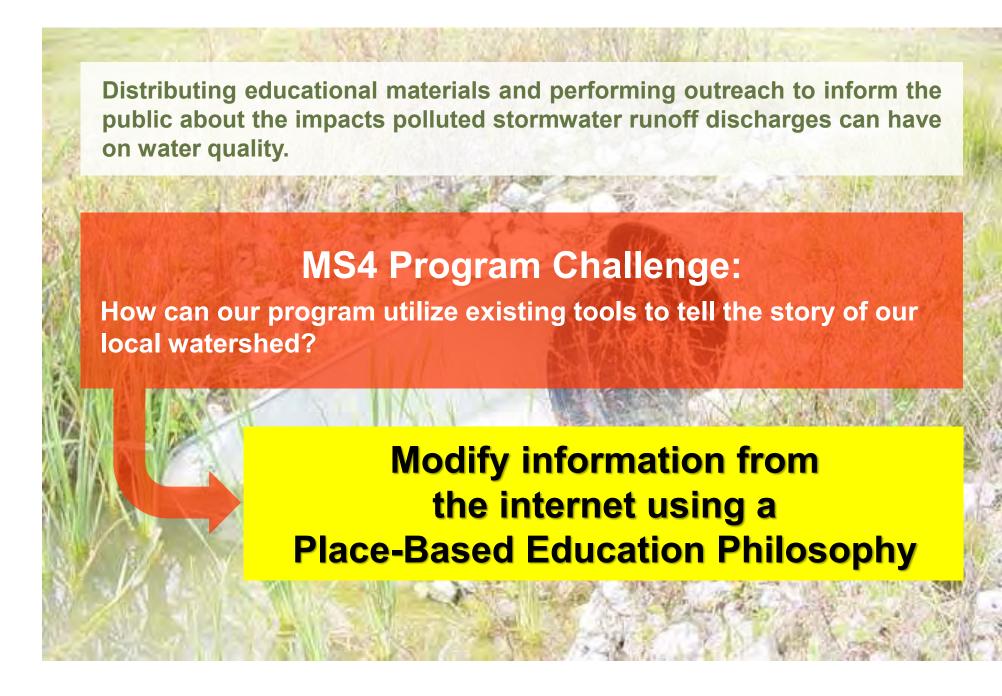
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"Perch Game" Developed by Ohio State University as a Sea Grant Project

6 MINIMUM CONTROL MEASURES (MCMs):

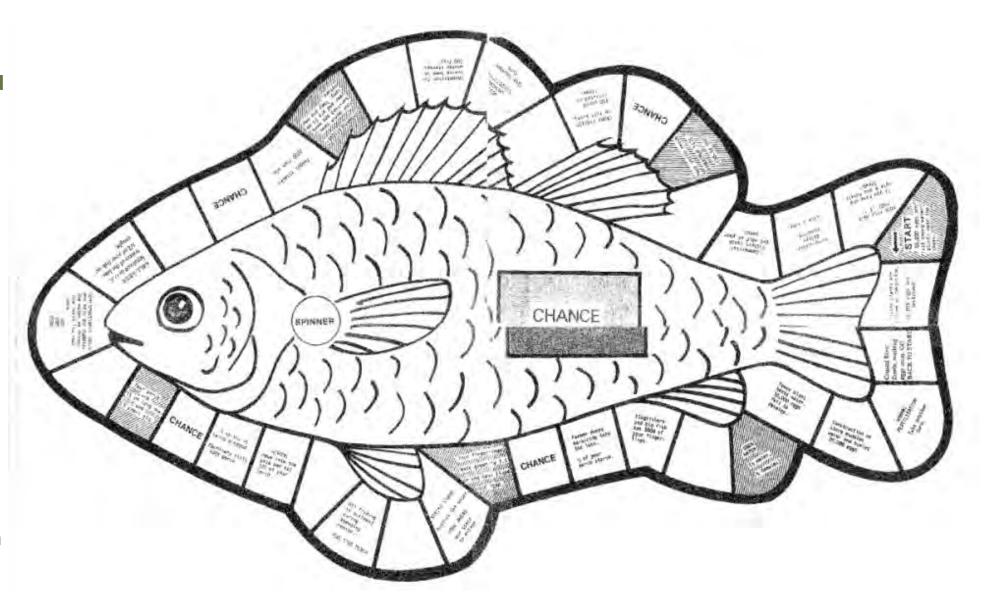
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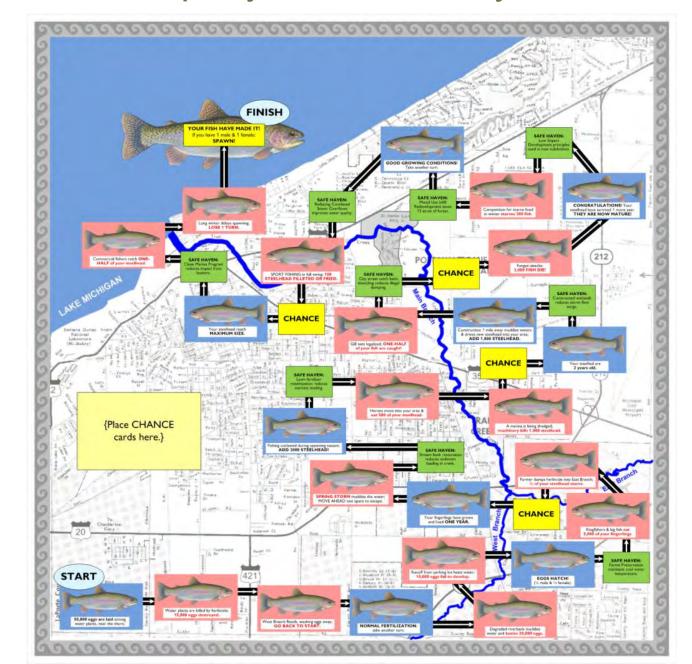
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CURRENT MINDSET?

Requirement Based

"We distribute flyers and brochures we find on the internet."

ALTERNATIVE MINDSET

Resource Based

"We use information from the internet as a guide to implement Place-Based Education based on our local watershed."



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MCM 1: Public Education and Outreach

MCM 2: Public Participation and Involvement

MCM 3: Illicit Discharge **Detection and Elimination**

MCM 4: Construction Site **Runoff Control**

MCM 5: Post-Construction **Runoff Control**

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New South Shore poster promotes water quality

CHAS REILLY Times Correspondent

MERRILLVILLE - There's a quality, and it's appealing to the we want in our waterways." eyes.

week at the Merrillville Storm- igan. water Resource Center, and the and heading into Lake Michi- ing the artwork for years.

The artwork also shows water puddling on a road followused for recreation.

lives," said Matt Lake, executive ter management. director of Merrillville's Stormwater Utility.

west Indiana Stormwater Advi- to discuss the concept for the quality and quantity issues.

the idea for the poster.

He said the title of the art- project. new method being used to pro- work, "Clean and Clear," is permote awareness of local water fect because it "represents what

Lake said what people do on The latest in the South Shore land ends up in local waterways Poster series was unveiled last before heading into Lake Mich-

NISWAG, a coalition of painting created by artist Mitch Stormwater entities from Lake to sell reproductions of the Markovitz depicts a waterway and Porter counties, discussed traveling through the Region the possibility of commission-

"They're popular," Lake said

He is pleased with the outmany view as a unique way to in the poster project. "Water is a vital part of our increase awareness of stormwa-

creating the poster, NISWAG the painting to schools to help Lake also is part of the North- members met with Markovitz teach students about water

sory Group, which came up with artwork. Markovitz said he enjoyed working with them on the

> Many of the municipalities that are involved in NISWAG. other local government entities, engineering companies and other groups contributed to funding the \$11,000 poster project, Lake said.

> All involved have the rights paintings. They also can use the artwork on cards, promotional items and for other purposes.

"This is an educational tool," of the South Shore Poster series, said Reggie Korthals, of Butler, Fairman & Seufert, an engineering rain, and the waterway being come of the project, which ing company that participated

> Korthals said stormwater directors from local municipali-As part of the process of ties can take reproductions of

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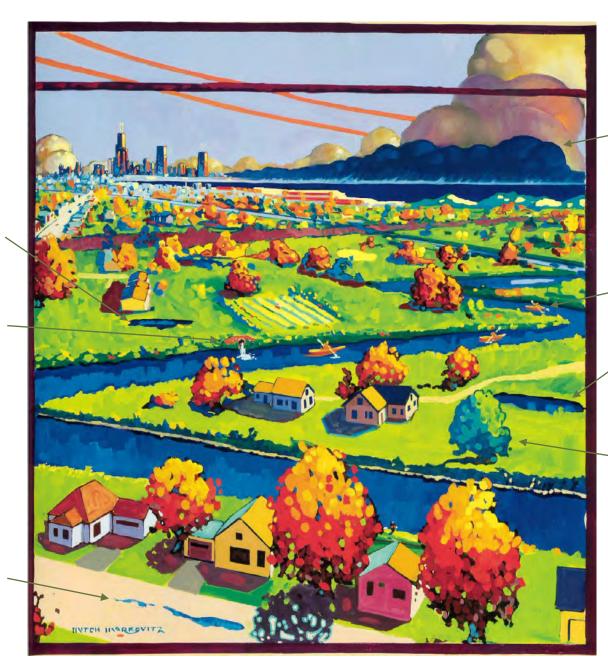
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Rain Garden

Outfall

Street Drainage

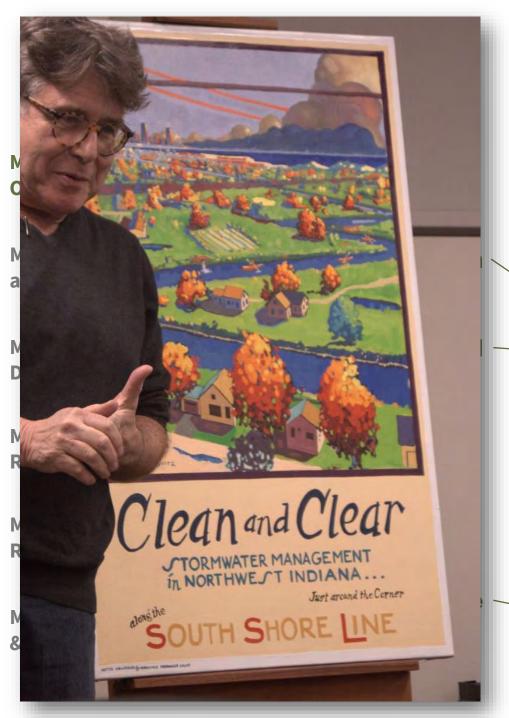


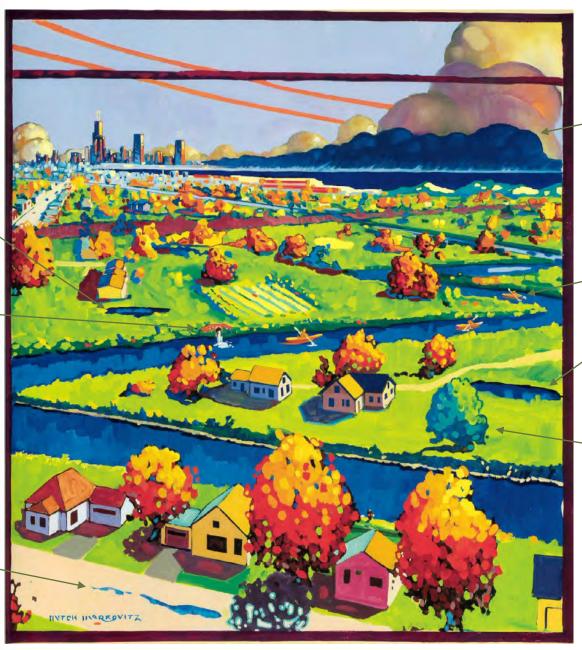
Receding Storm

Kayakers

Stormwater Pond

Trees





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Life as a Fish: Can I Drink that Water?				
Ist Week	Mon 6/16/08	Tue 6/17/08	Wed 6/18/08	Thu 6/19/08
10:45-12:45 8:45-10:30	Concepts of a watershed; local water resources; local threats Resources: Christine Meador, Struct. Briana Bosse, Structurepoint SDMC Staff Person	Field Trip to DNR Building (Leave KMS @8:45; leave from DNR @11:30) Resources: Brian Briedert, DNR SDMC Staff Peson	Stream testing: how, what, when, where & why Introduction in classroom Walk to Karwick Nature Park Resources: Joe Exl, DNR Erin Crofton, STD SDMC Staff Person Wrap-up in classroom	Field Trip to Indiana Dunes State Park Nature Center (Leave KMS @8-45; leave from Park @12:15) Resources: Erin Crofton, STD SDMC Staff Person Nicole Messacar(?), SWCD

Clean Water? Naturally!				
2 nd Week	Mon 6/23/08	Tue 6/24/08	Wed 6/25/08	Thu 6/26/08
8:45-10:30	Hydrogeology model experiments Resources: Nicole Messacar, SWCD SDMC Staff Person	Field Trip to J.F. New in Walkerton, IN (Leave KMS @8:45; leave from JFNew @11:45)	Field Trip to Striebel Pond: identifying mature wetland plants. (Leave KMS @8:45; leave from Striebel Pond @ 12:30)	Planting the Michigan Boulevard rain garden (Leave KMS @8:45; leave from Blvd. @ 12:30)
15-min. break	Designing the planting scheme for the Michigan Boulevard rain garden. Resources: Steve Barker, JFNew SDMC Staff Person	Resources: SDMC Staff Person	Resources: Sarah Wright, Burke Eng. Erin Crofton, STD SDMC. Staff Person	Resources: Christine Livingston, STD Erin Crofton, STD JFNew Dave McCormick SDMC Staff Person

Pollution: what we do really matters				
3 rd Week	Mon 6/30/08	Tue 7/1/08	Wed 7/2/08	Thu 7/3/08
10:45-12:45 8:45-10:30	Renewable or not? Project Learning Tree Activity & Game related to natural resources The Waste Stream; how MSW affects community health Vermicomposting Landfill Enviroscape Resources: Nicole Messacar, SWCD	Field Trip the Sanitary District Wastewater Treatment Plant (Leave KMS @8.45; leave from WWTP @12:00) Resources: Kathy Janatik, SDMC Sue Claussen, SDMC Mike Hoffman, SDMC	Point-Source Pollution Sum of the Parts: Project Wet Activity related to non-point & land use Intro to erosion/ sediment principles Create a soil erosion lab Resources: Nicole Messacar, SWCD	Responsible Living: Recycling Sort trash collected as part of The Waste Stream Field Trip to Tryon Farms (Leave KMS @9.45; return from WWTP @12:00) Resources: Nicole Messacar, SWCD SDMC Staff Person
_	Nancy Gibson, SWD SDMC Staff Person	Wrap-up in classroom	Nancy Gibson, SWD SDMC Staff Person	Wrap-up in classroom

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Requirement Based

ALTERNATIVE MINDSET

MCM 3: Illicit Disch **Detection and Elim**

MCM 4: Construction

Runoff Control

"We lecture students in a classroom."

Resource Based

"We partner with Out-of-School Time providers to run a watershed-based Summer Camp."

:ted

MCM 5: Post-Construction **Runoff Control**

MCM 6: Pollution Prevention & Good Housekeeping

8:45-

15-min. break

0:45-12:45

Game related to natural resources

 The Waste Stream: how MSW affects community health

- Vermicomposting
- Landfill Enviroscape

Resources:

Nicole Messacar, SWCD Nancy Gibson, SWD SDMC Staff Person

(Leave KMS @8:45; leave from WWTP @12:00)

Resources:

Kathy Janatik, SDMC Sue Claussen, SDMC Mike Hoffman, SDMC

Wrap-up in classroom

related to non-point & land use

- Intro to erosion/ sediment principles
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as part of The Waste Stream

Field Trip to Tryon Farms

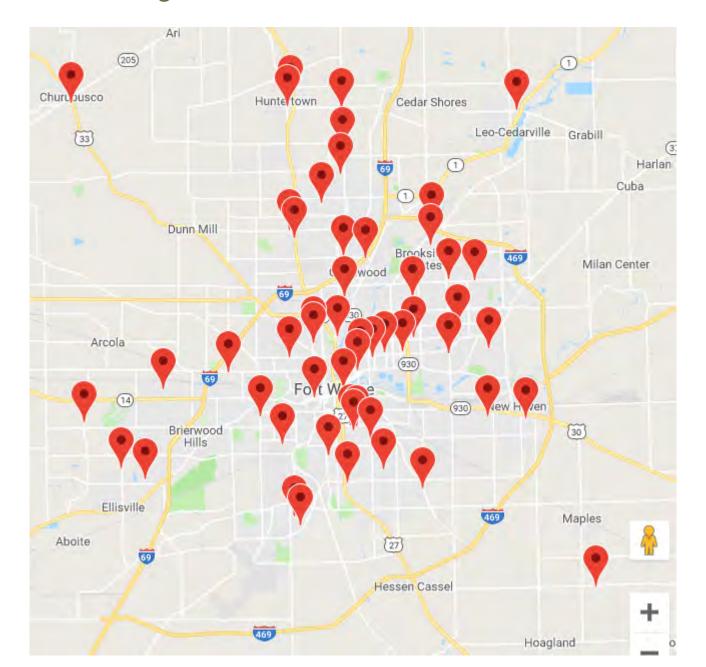
(Leave KMS @9:45; return from WWTP @12:00)

Resources:

Nicole Messacar, SWCD SDMC Staff Person

Wrap-up in classroom

Is there an Afterschool Program Near You? Check with the Indiana Afterschool Network



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INAFSM Video Series

Indiana MS4 Videos

INAFSM is a supporter of this on-going Indiana MS4 entities lead project to develop a series of MS4 and Stormwater-topic, web-based videos. Since 2012, the project has been coordinated by the <u>Tippecanoe County Partnership for Water Quality</u> and the <u>Muncie Sanitary District</u>. Participating MS4s voluntarily pool their resources to develop videos annually.







- MS4 for Elected Officials This 8 minute video features MS4 communities' experienced, elected
 officials giving their advice and recommendations on why the MS4 program is important and
 explaining how it helps them with their duties (2016)
- Blue is the New Green Blue is the new Green" completed in 2015, this 10 minute video reviews the Do's and Don'ts of basic stormwater pollution prevention practices that should be implemented by everyone in their home, in their yard, and when they are out and about. This training tool will assist with educating the general public so they can learn to do the right things to help protect our environment; especially focusing on ways to help keep our waterways clean. Since the green, environmental movement is very popular, the video's title is a play on turning stormwater or "blue" into the next, new "green" movement! (2015)
- Stormwater Quality: Inspection Completed in 2015, this 7 minute video explains the Inspector's
 overall responsibilities (whether they represent a governmental entity or a private firm) when they
 inspect an active construction site for compliance with its stormwater quality runoff permit
 and/or applicable regulatory requirements. An overview of what needs to occur before, during,
 and after the inspection is presented. This training tool can be used to help inform governmental

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CURRENT MINDSET?	ALTERNATIVE MINDSET
Requirement Based	Resource Based
"We have limited resources so we link to EPA documents."	"We work with multiple partners to make limited resources go farther."

implemented by everyone in their home, in their yard, and when they are out and about. This training tool will assist with educating the general public so they can learn to do the right things to help protect our environment; especially focusing on ways to help keep our waterways clean. Since the green, environmental movement is very popular, the video's title is a play on turning stormwater or "blue" into the next, new "green" movement! (2015)

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Use Creative, Local Resource Programming



"Wonders on the Wabash"

tcpwq.org

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Use Creative, Local Resource Programming



CURRENT MINDSET?	ALTERNATIVE MINDSET
Requirement Based	Resource Based
"We have public comment and input at our Stormwater Board Meetings."	"We organized a rafting trip to showcase the Wabash River."



"Wonders on the Wabash"

tcpwq.org

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CURRENT MINDSET?

Requirement Based

"We lecture kids about rain gardens."

ALTERNATIVE MINDSET

Resource Based

"We teach kids how to build rain gardens."



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Developing and implementing a plan to identify and eliminate illicit discharges to the separate storm sewer system, including developing a system map and informing the community about the hazards associated with illegal discharges and improper disposal of waste.



MCM 1: Public Education and Outreach

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MCM 3: Illicit Discharge Detection and Elimination

MCM 4: Construction Site Runoff Control

MCM 5: Post-Construction Runoff Control



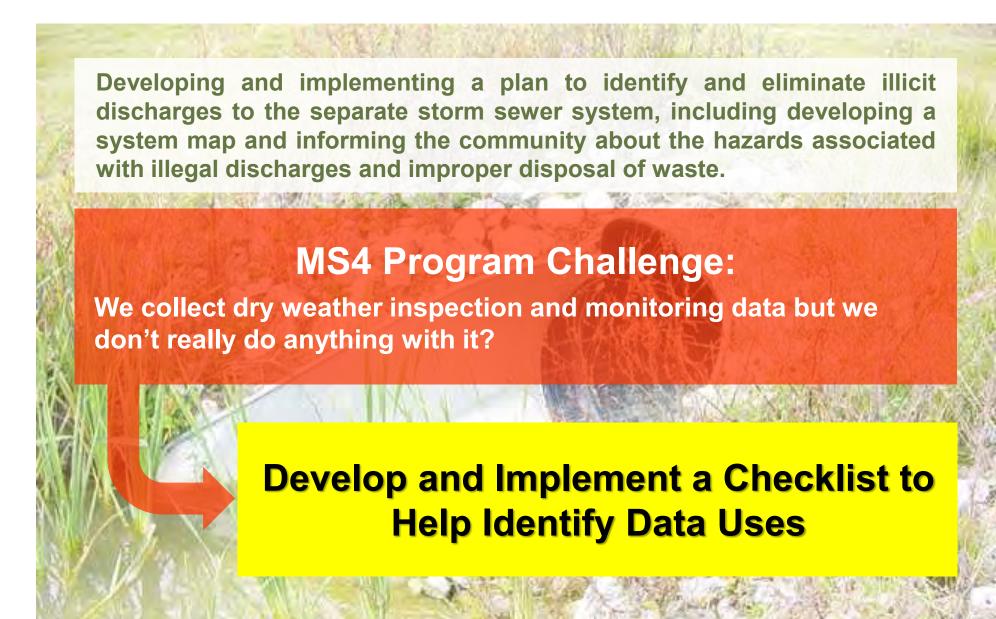
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IDDE Data Uses Checklist

Tippecanoe County Surveyors' Office MS4 IDDE DATA USES Data Reviewer: Date:

Specific watershed, Educational effort subshed, or other MCMs Noted Items needed? area? YES NO Grass/Yard Waste Detergents E. coli Paint Motor oil 1 & 2 - Public Education, Outreach, Participation, & Dry cleaning chemicals Involvement Grease Dumpster fluids Sediment Land within 75 Feet of bank of a Regulated Drain

Form revision date: 10/30/18

MCM 1: Public Education and Outreach

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IDDE Data Uses Checklist

Data Reviewer: Date:	Tippecanoe County MS4 IDDE DA	-	' Office			
CURRENT MINDS	ET?		AL1	TERN/	ATIVE MINDSE	T
Requirement Ba	sed			Reso	urce Based	
"We collect dry weather and monitoring d	•				ur data (a resc nanage our pro	•
Outreach, Participation, & Involvement	Dry cleaning chemicals	i				
I III III III III III III III III III	Grease					_
	Dumpster fluids					
	Sediment					
	Land within 75 Feet of Regulated Drain	bank of a				
				1	Form revision date: 10/3	0/18

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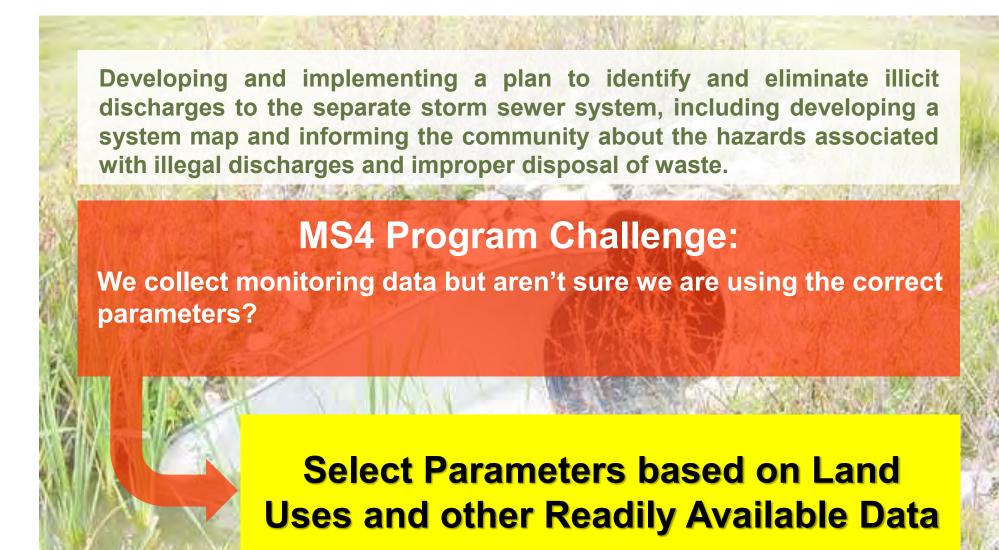
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IDDE Land Use Data Parameters: Nutrients, *E. coli*, Metals, Oil & Grease, etc.



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CURRENT MINDSET? ALTERNATIVE MINDSET Requirement Based Resource Based "We collect dry weather monitoring for "We collect dry weather monitoring data." specific parameters tied to upgradient land uses and other data resources."

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MCM 6: Pollution Prevention & Good Housekeeping

Development of an ordinance and establishment of a construction program that controls polluted runoff from construction activities that disturb one or more acres of land in the MS4 area.



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Development of an ordinance and establishment of a construction program that controls polluted runoff from construction activities that disturb one or more acres of land in the MS4 area.

MS4 Program Challenge:

"We do have a local ordinance, but developers and designers seem confused about the depth and breath of local requirements regarding land disturbing activity."

Prepare and Distribute a Fact Sheet on the local Permitting Process for Land Disturbing Activities

	1 Acre of Land Disturbance and Greater	Individual Lots with less than 1 acre of land disturbance that are developed within a larger permitted project site	Land Disturbance of at least 7,000 square feet and less than 1 acre; NOT developed within a larger permitted project site
STORMWATER QUANTITY MANAGEMENT Chapter 3 of the Crown Point Stormwater Management Ordinance	"The storage and controlled release rate of excess stormwater runoff shall be required for all new business, commercial and industrial developments, residential subdivisions, planned development, rural estate subdivisions, and any redevelopment or other new construction located within the City of Crown Point."	Storage and controlled release rate of excess stormwater runoff is part of the "larger permitted project site" design, submittal and approval.	The storage and controlled release rate of excess stormwater runoff shall be required for any redevelopment or other new construction located within the City of Crown Point. "The City Engineer, after thorough investigation and evaluation, may waive the requirement of controlled runoff for minor subdivisions and parcelization."
STORMWATER POLLUTION PREVENTION FOR CONSTRUCTION SITES Chapter 4 of the Crown Point Stormwater Management Ordinance	"The City Engineer will require a Stormwater Pollution Prevention Plan (SWPPP), which includes erosion and sediment control measures and materials handling procedures, to be submitted as part of the construction plans and specifications."	The individual lot operator must comply with the terms and conditions of the stormwater permit approved for the larger project site. The stormwater permit application for the larger project site must include detailed erosion and sediment control measures for individual lots.	Developments must comply with this chapter unless the total combined disturbance is less than one (1) acre and is not part of a larger common plan of development or sale.
STORMWATER QUALITY MANAGEMENT FOR POST- CONSTRUCTION Chapter 5 of the Crown Point Stormwater Management Ordinance	The SWPPP must also include post-construction stormwater quality measures. These measures are incorporated as a permanent feature into the site plan and are left in place following completion of construction activities to continuously treat stormwater runoff from the stabilized site.	Post-Construction site Best Management Practices (BMPs) for Individual Lots are part of the "larger permitted project site" design, submittal and approval.	Post-Construction requirements do not apply to: A single family residential dwelling disturbing less than 5 acres and is not part of a larger development. Single family homes consisting of four or less lots. A single-family residential strip development where the developer offers for sale or lease without land improvements and the project is not part of a larger common plan of development.
PERMIT REQUIREMENTS & PROCEDURES Chapter 7 of the Crown Point Stormwater Management Ordinance	The Stormwater Permit Application elements include: • Draft Notice of Intent • Proof of Publication of a Public Notice • Construction Plans • Drainage Technical Report • SWPPP for Construction Site • Post-Construction SWPPP Items When project is complete and the site is stabilized, a Notice of Termination (NOT) will be issued.	A formal review and issuance of an Individual Lot Plot Plan Permit will be required before a building permit can be issued. Stormwater management measures must be implemented in accordance with the permitted plan for the larger project, including: • Weekly and Rain Event Inspections • Installation and maintenance of all lot erosion and sediment control measures until the lot is stabilized • At completion, an Occupancy Permit can be issued	A formal review and issuance of an Individual Lot Plot Plan Permit will be required before a building permit can be issued. All stormwater management erosion and sediment control measures necessary to comply with the Ordinance must be implemented, including: • Weekly and Rain Event Inspections • Installation and maintenance of all lot erosion and sediment control measures until the lot is stabilized • At completion, an Occupancy Permit can be issued

Individual Lots with less than 1 acre of land Land Disturbance of at least 7,000 square 1 Acre of Land Disturbance disturbance that are developed within a feet and less than 1 acre; NOT developed and Greater larger permitted project site within a larger permitted project site "The storage and controlled release rate of excess Storage and controlled release rate of excess The storage and controlled release rate of excess stormwater runoff shall be required for all new business, stormwater runoff is part of the "larger permitted stormwater runoff shall be required for any commercial and industrial developments, residential project site" design, submittal and approval. redevelopment or other new construction located within subdivisions, planned development, rural estate the City of Crown Point. subdivisions, and any redevelopment or other new construction located within the City of Crown Point." "The City Engineer, after thorough investigation and evaluation, may waive the requirement of controlled **CURRENT MINDSET? ALTERNATIVE MINDSET** unless the acre and POL FO **Requirement Based Community Resource Based** "We facilitate the stormwater quantity and "Permitting requirements for land disturbing quality permitting process by explaining the activities are stipulated in our local STO submittal requirements based on size of land irbing less ordinances." lopment. disturbing activity." ent where thout land improvements and the project is not part of a larger common plan of development. The Stormwater Permit Application elements include: A formal review and issuance of an Individual Lot Plot A formal review and issuance of an Individual Lot Plot Draft Notice of Intent. Plan Permit will be required before a building permit Plan Permit will be required before a building permit PERMIT REQUIREMENTS · Proof of Publication of a Public Notice can be issued. Stormwater management measures must can be issued. All stormwater management erosion and Construction Plans be implemented in accordance with the permitted plan sediment control measures necessary to comply with the & PROCEDURES for the larger project, including: Ordinance must be implemented, including: Drainage Technical Report Chapter 7 of the Crown Point Weekly and Rain Event Inspections Weekly and Rain Event Inspections SWPPP for Construction Site Stormwater Management Ordinance · Installation and maintenance of all lot erosion and · Post-Construction SWPPP Items · Installation and maintenance of all lot erosion and When project is complete and the site is stabilized, a sediment control measures until the lot is stabilized sediment control measures until the lot is stabilized

Notice of Termination (NOT) will be issued.

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MCM 1: Public Education and Outreach

MCM 2: Public Participation and Involvement

MCM 3: Illicit Discharge Detection and Elimination

MCM 4: Construction Site Runoff Control

MCM 5: Post-Construction Runoff Control



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MS4 Pre-Construction Meeting Agenda

Pre-Construction Meeting	Agenda Item Covered?		Notes
Agenda Item	YES	NO	
48-hr. Notice Requirement			
Posting Requirement			
Record Copy of SWPPP			
Documenting SWPPP Changes			
Construction Schedule			
Construction Sequence			
Construction Entrance			
Perimeter Controls			
Sensitive Areas			
Impact Drainage Areas			
Priority Inspection Areas			
Concrete Washout			
Stockpiles			
Disposal of Paint & Dyes			
Spill Prevention			
Self-Inspections			
Failed BMPs			
Sub-Contractors			

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MCM 3: Illicit Discharge **Detection and Elimination**

MCM 4: Construction Site Runoff Control

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MCM 6: Pollution Prevention & Good Housekeeping

MS4 Pre-Construction Meeting Agenda

Pre-Construction Meeting	Agenda Item Covered?		Notes
Agenda Item	YES	NO	
48-hr. Notice Requirement			

CURRENT MINDSET? ALTERNATIVE MINDSET

Requirement Based

"Our local requirements are available on our website."

Community Resource Based

"We educate Contractors on how to protect local waterways by conducting a Pre-Construction Meeting to identify specific measures and practices that must be implemented and maintained at construction sites.

Disposal of Paint & Dyes		
Spill Prevention		
Self-Inspections		
Failed BMPs		
Sub-Contractors		

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Development of an ordinance and establishment of a construction program that controls polluted runoff from construction activities that disturb one or more acres of land in the MS4 area.

MS4 Program Challenge:

"It's hard to know when construction projects are complete because we rarely receive a copy of the project site Notice of Termination (NOT).

Make Release of Bond & Occupancy Permit Contingent upon a successful MS4 Notice of Termination Inspection

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MS4 Notice of Termination Inspection

	Notice of Termination (NOT) Verification Inspection Items	YES	NO	N/A
1.	Have all earth disturbing activities been completed?			
2.	Has the site been stabilized (70% uniform density of permanent vegetation)?			
3.	Are all drainageways stabilized with either vegetation, rip rap, or other armament?			
4.	Have all temporary erosion and sediment control measures been removed?			
5.	Has all construction waste, trash, and debris been removed from the site?			
6.	Has all construction equipment and material been removed from the site?			
7.	Have all the permanent stormwater quality BMPs been installed in accordance with the plans, specifications, and details?			
8.	Are all the permanent BMPs free of sediment accumulation resulting from construction activities?			

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MS4 Notice of Termination Inspection

	Notice of Termination (NOT) Verification Inspection Items	YES	NO	N/A
1.	Have all earth disturbing activities been completed?			
2.	Has the site been stabilized (70% uniform density of permanent vegetation)?			
3.	Are all drainageways stabilized with either vegetation, rip rap, or other armament?			
4.	Have all temporary erosion and sediment control measures been removed?			
5.	Has all construction waste, trash, and debris been removed from the site?			
6.	Has all construction equipment and material been removed from the site?			
7.	Have all the permanent stormwater quality BMPs been installed in accordance with the plans, specifications, and details?			
8.	Are all the permanent BMPs free of sediment accumulation resulting from construction activities?			

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MS4 Notice of Termination Inspection

Notice of Termination (NOT) Verification	Inspection Items	YES	NO	N/A	н
Have all earth disturbing activities been completed?)				
CURRENT MINDSET?	ALTERNAT	IVE M	INDSE	T	
Requirement Based	Community F	Resou	rce Ba	ased	
The Contractor is responsible for submitting the Notice of Termination to the state."	"We protect local was with our Building Department required measures and practic correctly and are	oartmo I storr ces ha	ent to nwate ve be	ensure er-relaten	that ted alled
6. Has all construction equipment and material been r	emoved from the site?				
7. Have all the permanent stormwater quality BMPs b the plans, specifications, and details?				ı	
Are all the permanent BMPs free of sediment accumulation resulting from construction activities?					п

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Development of an ordinance and establishment of a post-construction program that addresses runoff from new development and redevelopment areas.



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Development of an ordinance and establishment of a post-construction program that addresses runoff from new development and redevelopment areas.

MS4 Program Challenge:

With limited MS4 resources, we have difficulty in tracking and monitoring Post-Construction BMPs installed by private developers.

Create a Base Map of Post-Construction BMPs and add New BMPs as NOTs are Approved

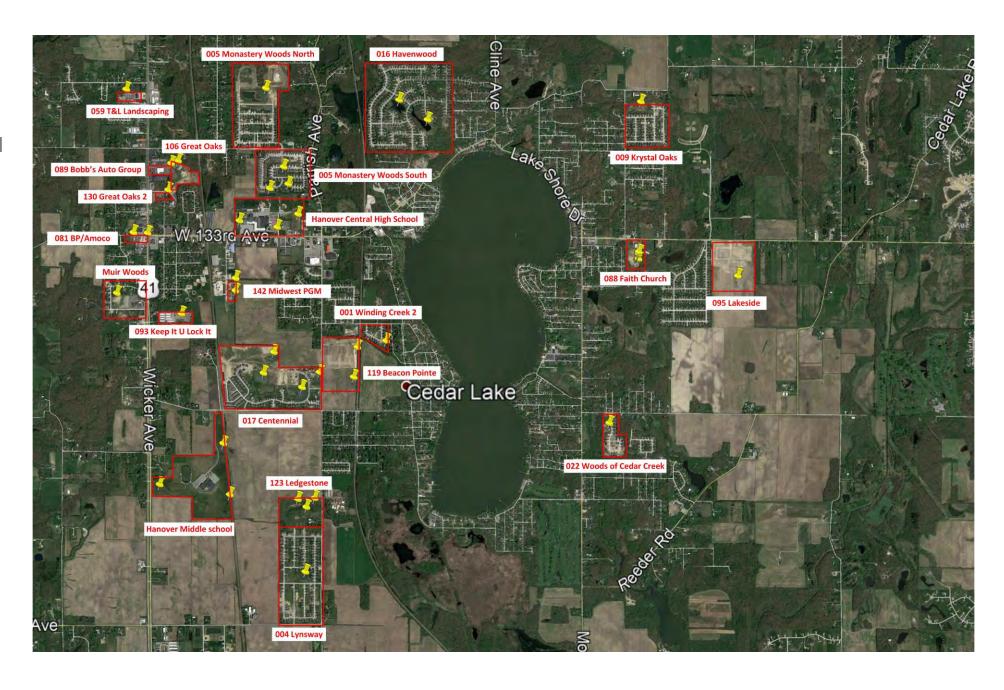
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MCM 1: Public Education and Outreach

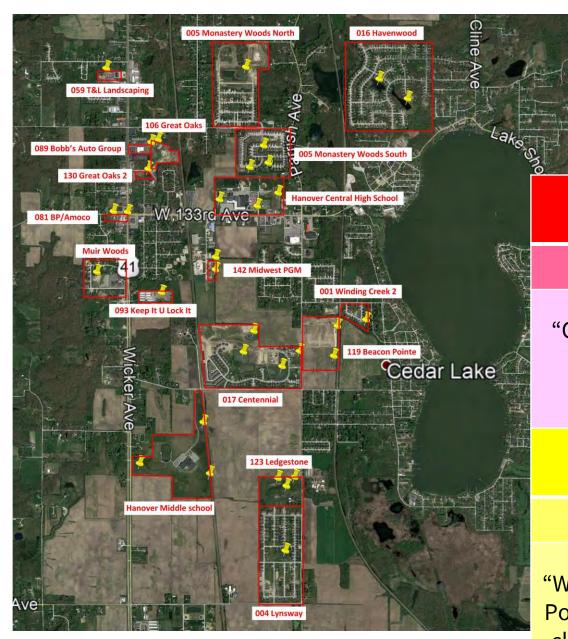
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CURRENT MINDSET?

009 Krystal Oaks

Requirement Based

"Our ordinance requires property owners to maintain Post-Construction BMPs in perpetuity."

ALTERNATIVE MINDSET

Community Resource Based

"We protect local waterways by prioritizing Post-Construction BMP monitoring at sites closest to our most sensitive waterways."

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Development of an ordinance and establishment of a post-construction program that addresses runoff from new development and redevelopment areas.

MS4 Program Challenge:

With limited staff, resources and time, it can be difficult to monitor if property owners are in compliance with Post-Construction BMP inspections and maintenance.

Implement Tracking Binder (Paper or Electronic) of Post-Construction BMP Commitments

Pages from Required Owner-Supplied O&M Manual

DVG Team Inc.

There are typical maintenance items associated with a dry detention pond that should be followed. The following maintenance schedule is provided for the dry detention pond.

Dry Detention Pond Maintenance Schedule

	Activity	Schedule
Þ	Note erosion of pond banks or bottom	Semiannual inspection
	Inspect for damage to the embankment Monitor for sediment accumulation in the facility Examine to ensure that inlet and outlet devices are free of debris and operational	Annual inspection
	Repair undercut or eroded areas Mow side slopes Limit pesticide use to the control of invasive species. Limit fertilizer use to the establishment of desired plant growth. Remove litter and debris	Standard maintenance
٠	Seed or sod to restore dead or damaged ground cover	Annual maintenance (as needed)
	Outlet control Structure - See BMP location map for location Located in the East side of the pond, the restrictor is located inside the catch basin structure and can be accessed by the structure.	After rain event greater than 0.5°, and quarterly
٠	Monitor sediment accumulations, and remove sediment when the pond volume has been reduced by 25 percent. The accumulated volume shall be determined by comparing the approved as-built topography to a current as-built topography. The pond is designed to provide 2.10 acre feet of volume.	25- to 50-year maintenance

Ledgestone Storm Water Operation & Maintenance Manual Cedar Lake, Indiana DVG Team Inc.

Catch Basin Operation, Maintenance, and Management Inspection Checklist

Project:	
Location:	
Date:	Time:
Inspector;	Title:
Signature:	

Maintenance Item	Satisfactory/ Unsatisfactory	Comments	
1. Debris Cleanout	,		
Catch basin clean of debris (litter, branches, etc.)		7*	
Inlet and outlet pipes free of blockages			
2. Sediment Deposits/Accumulation			
Sumps are not more than one-third full from basin bottom to lowest invert.			

Actions to be Taker	13		

Ledgestone Storm Water Operation & Maintenance Manual Cedar Lake, Indiana DVG Team Inc.

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
3. Dry Detention Basin Areas		
Vegetation ground cover condition		
No signs of erosion on embankment.		
No animal burrows.		
Embankment is free of cracking, bulging, or sliding.		
Embankment is free of woody regetation.		
Embankment is free of leaks or seeps		
Emergency spillway is clear of obstructions, condition of riprap or scour mats at the spillway		
Vertical/horizontal alignment of top of dam "As- Built"		
No undesirable woody vegetation		
Low flow channels clear of obstructions		
No evidence of sediment and/or trash accumulation		
4. Condition of Outfall to the sediment basin		
No scour stop failures		
No evidence of slope erosion or scouring		
Storm drain pipes are in good condition, with no evidence of non-stormwater discharges		
End Sections are in good condition		

Ledgestone Storm Water Operation & Maintenance Manual Cedar Lake, Indiana

- 0

Pages from Required Owner-Supplied O&M Manual

nere are typical maintenance items associated with a dry detention pond that should be llowed. The following maintenance schedule is provided for the dry detention pond.	Catch Basin Operation, Maintenance, and Management Inspection Checklist	Maintenance Item Satisfactory Comments
Regulatory Audit Asses	sment Item: Post-Construction	BMP Control measures
implemented on priva	tely-owned projects are the re	sponsibility of the site
		-
lowner to maintain an	id monitor. But the MS4 en	tity that regulates the
	d monitor. But, the MS4 ent	
privately-owned sites i	is responsible to have a Post-Co	onstruction site run-off
privately-owned sites i	•	onstruction site run-off
privately-owned sites inspection program	is responsible to have a Post-Cowith procedures for implem	onstruction site run-off entation, including a
privately-owned sites inspection program mechanism to enfor	is responsible to have a Post-Cowith procedures for implemode to maintain a	onstruction site run-off entation, including a
privately-owned sites inspection program	is responsible to have a Post-Cowith procedures for implemode to maintain a	onstruction site run-off entation, including a
privately-owned sites inspection program mechanism to enfor	is responsible to have a Post-Cowith procedures for implemode to maintain a	onstruction site run-off entation, including a
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Pages from Required Owner-Supplied O&M Manual



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STORMWATER FACT SHEET:

Proper Disposal of Oil-Soaked Items and Solvent-Contaminated Wipes

WHAT IS THE RISK OF POLLUTION FROM OIL-SOAKED ITEMS?

OVER 200 MILLION GALLONS OF OIL IS TOSSED INTO THE TRASH, SPILLED ONTO THE GROUND OR POURED DOWN DRAINS & SEWERS EACH YEAR

Used oils may include lubricants, hydraulic fluids, and heat transfer fluids.

PROBLEMS TO LOOK FOR:

Used oil, used oily shop rags, used oil filters, and used oil dry can be sources of oil pollution if not controlled properly.







GOOD HOUSEKEEPING PRACTICES:

USED OIL:

- By choosing to recycle used oil, a facility does not have to manage used oil as a hazardous waste if Indiana's "Used Oil Rule" requirements are followed, which include:
- Tanks/Containers storing used oil must be in good condition and be marked as "Used Oil".
- · Facility must have and follow spill cleanup procedures.

USED OILY RAGS AND USED OIL DRY ABSORBENT (THAT DO NOT CONTAIN OTHER CONTAMINANTS):

- 'Dry' Items: Used oil rags and absorbents should be allowed to air dry until visibly dry before either
 recycling them or disposing of them in the regular trash.
- Oversaturated Items: If used oily rags and used oily dry absorbent is oversaturated and has free liquids, they should be placed in a "double system" (two nested-buckets where the first bucket has holes so that the free liquid can drain away and be collected in the bottom of the second bucket). The free liquids that drain MUST be collected.

SOLVENT-CONTAMINATED WIPES are wipes used to clean a solvent/degreaser considered to be a hazardous waste with a "T" (Toxic Waste) or "I" (Ignitable Waste) Hazard Code. These wipes may be considered as Solid Waste If certain conditions are met: stored in non-leaking, closed containers that can contain free likely and have reported in the containers.

For more information on controlling spills, contact:

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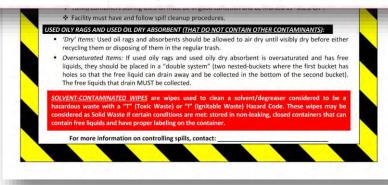
MCM 6: Pollution Prevention & Good Housekeeping



WHAT IS THE RISK OF POLLUTION FROM OIL-SOAKED ITEMS?

OVER 200 MILLION GALLONS OF OIL IS TOSSED INTO THE TRASH, SPILLED ONTO THE GROUND OR POURED DOWN DRAINS & SEWERS EACH YEAR

Used oils may include lubricants, hydraulic fluids, and heat transfer fluids.



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WHAT IS THE RISK OF POLLUTION AT FUEL ISLANDS?

Unintended Spills & Drippings Add up over Time

- After a rain or snow, drippings and spill residue can be washed off of hoses, pumps, or ground surfaces, and will be transported to local stream, rivers and groundwater.
- These pollutants negatively impact nearby waterways and water quality.

ONE GALLON OF GAS CAN CONTAMINATE UP TO 1 MILLION GALLONS OF WATER



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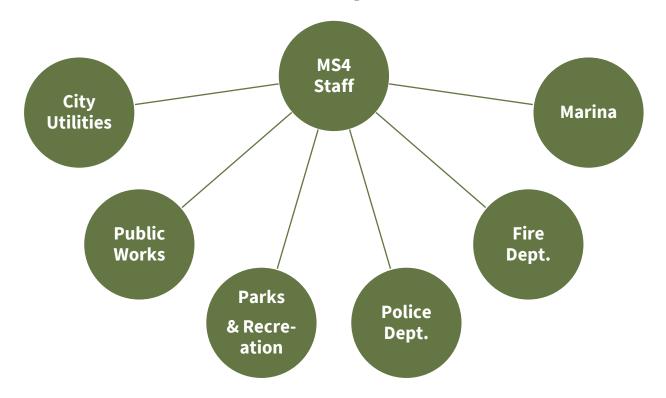
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Providing Services can Foster Relationships with City Staff

- > Training Sessions
- > Routine Inspections
- > Annual Report Data



Providing Services can Foster Relationships with City Staff

CURRENT MINDSET?

Requirement Based

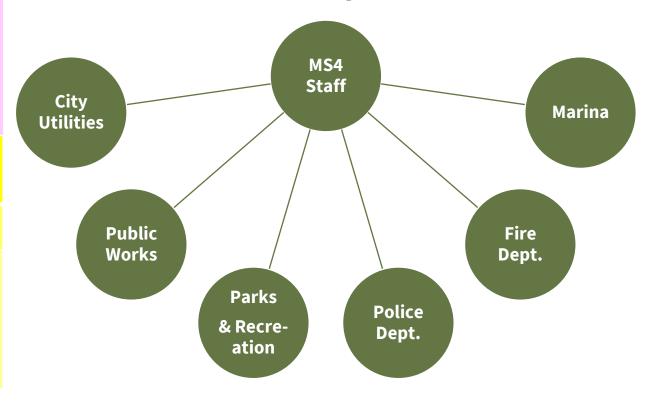
"Copies of SWPPPs are located in each municipal facility."

ALTERNATIVE MINDSET

Community Resource Based

"We provide training and monitoring services as a community resource to other City Departments."

- > Training Sessions
- > Routine Inspections
- > Annual Report Data



MCM 1: Public Education and Outreach

MCM 2: Public Participation and Involvement

MCM 3: Illicit Discharge Detection and Elimination

MCM 4: Construction Site Runoff Control

MCM 5: Post-Construction Runoff Control



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MS4 Inspections Can Identify: Scouring Conditions, Sedimentation or Overflows



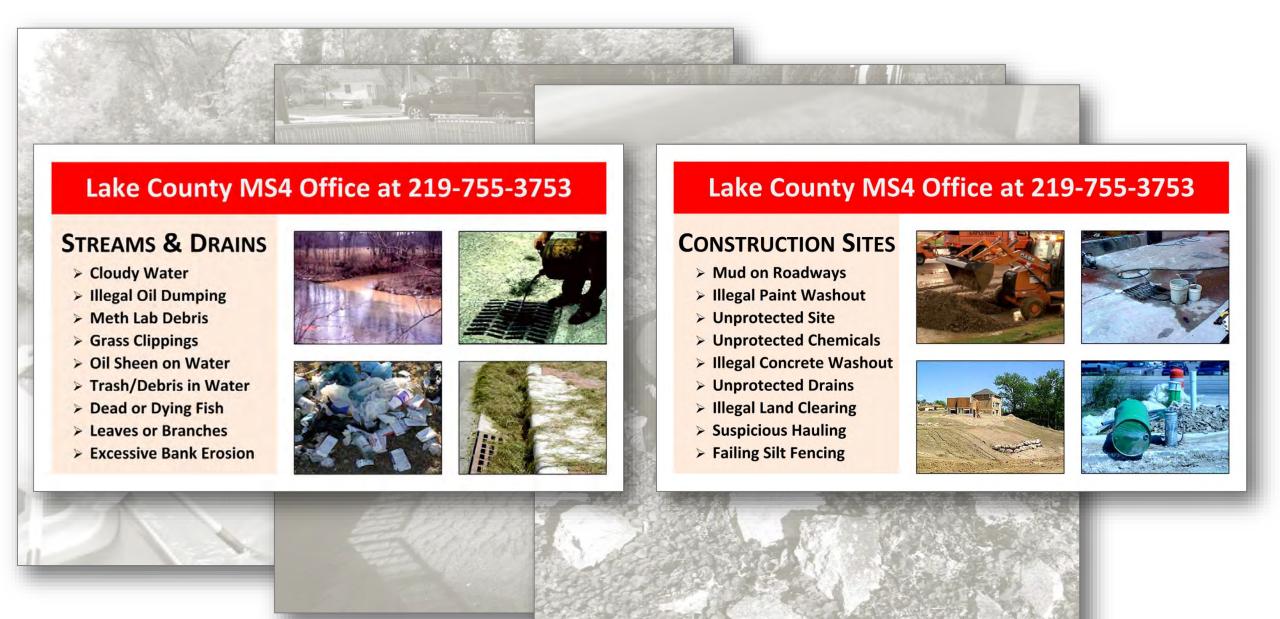
MS4 Inspections Can Identify: Scouring Conditions, Sedimentation or Overflows

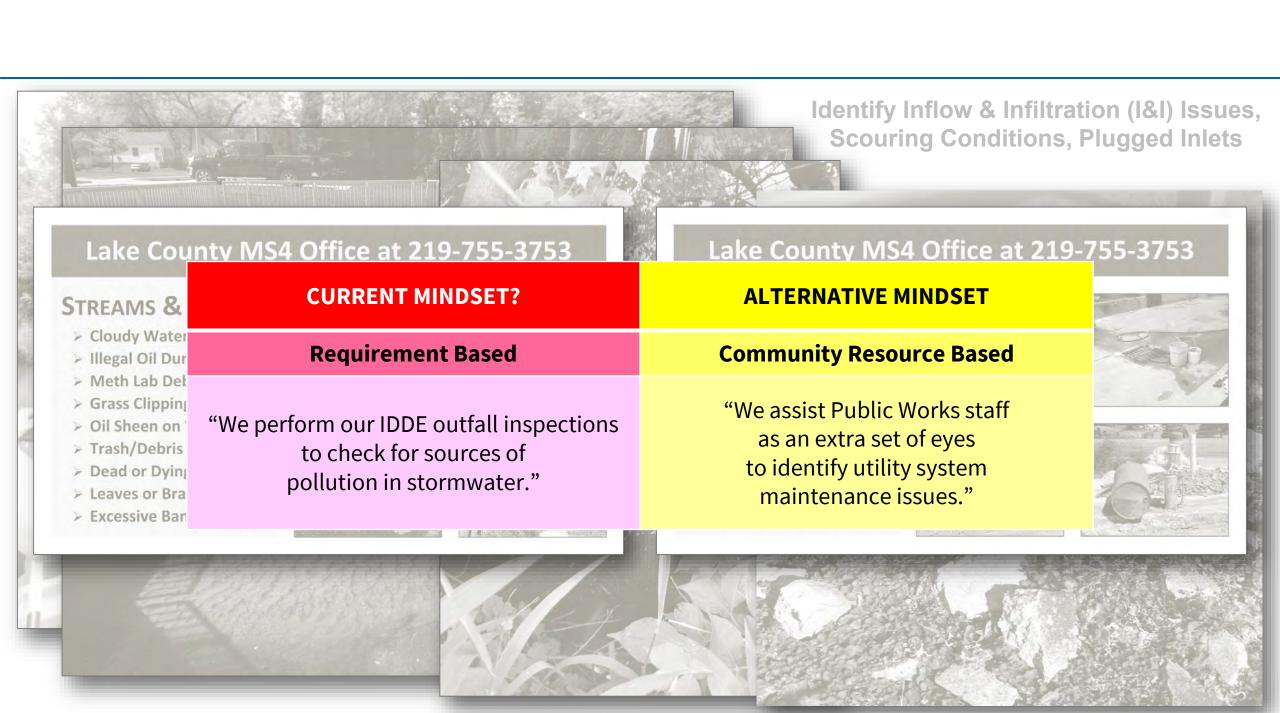


MS4 Inspections Can Identify: Scouring Conditions, Sedimentation or Overflows



Information Can Be Shared Both Ways







A Successful MS4 Mindset: Resource Versus Requirement





CHRISTOPHER B.
BURKE
ENGINEERING, LLC