ILLICIT DISCHARGE ELIMINATION PLAN TRAINING





Outline

- General StormwaterAwareness
- MS4 Permits
- □ IDEP Outfall Screening
- Public Reporting
- □ Field Training



Grand River

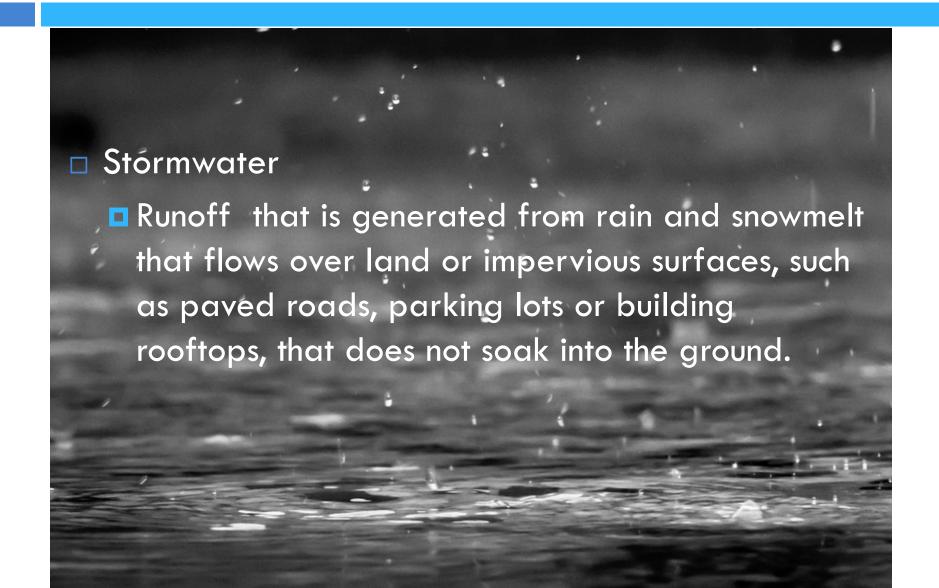


Introduction to Stormwater

- Municipal training video
- Wayne County:
- □ https://www.youtube.com/watch?v=qRljMX4eaS8
 - 11 minutes

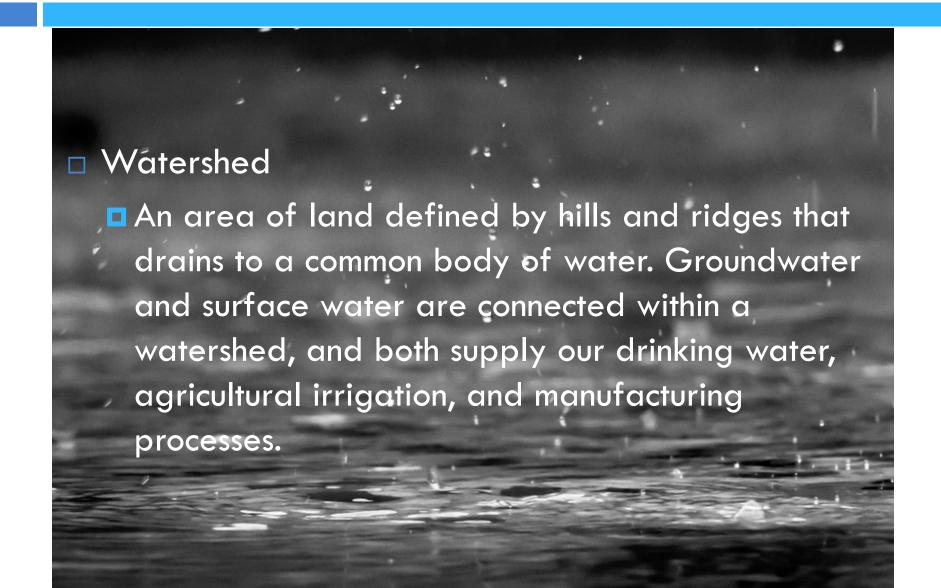


General Stormwater Education



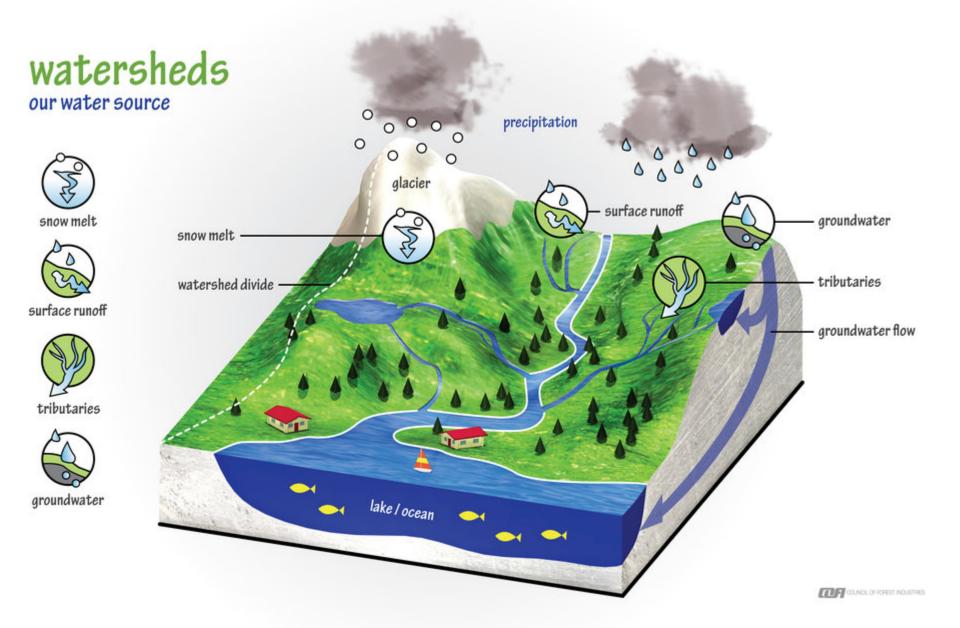


General Stormwater Education



Find My Watershed

□ https://www.lgrow.org/watersheds-1/





• Litter

Stormwater Runoff Pollutes





STORMWATER RUNOFF **CARRIES POLLUTANTS** INTO OUR WATERWAYS.



Pollution and Runoff

- Point source pollution
 - Any single identifiable source of pollution from which pollutants are discharged, such as a pipe, ditch, ship or factory smokestack



- Non-point source pollution
 - A combination of pollutants from a large area rather than from specific identifiable sources





CSO's vs. Separate Systems

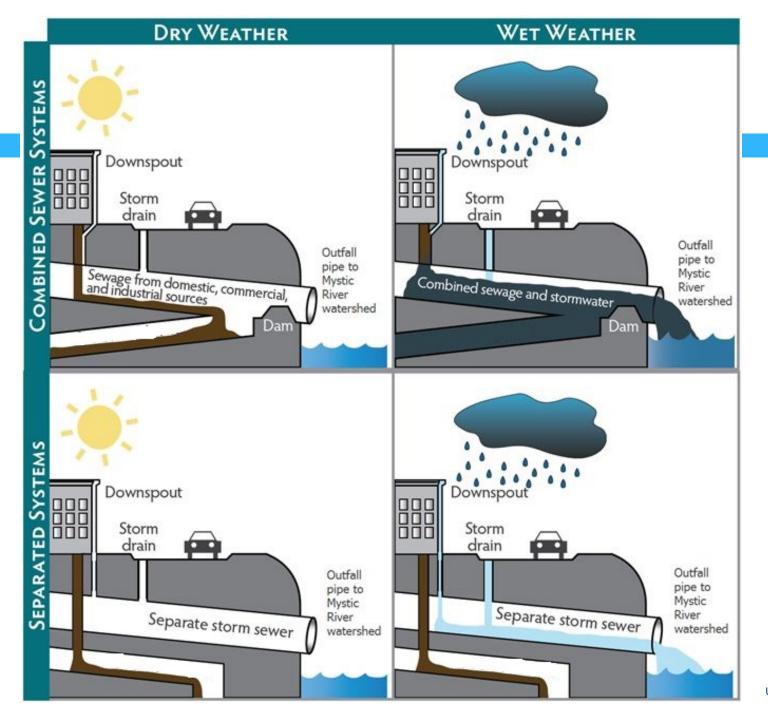
Combined Sewer Overflow

collects rainwater runoff, domestic sewage, and industrial wastewater into one pipe. Under normal conditions, it transports all of the wastewater treatment plant for treatment, then discharges to a water body. The volume of wastewater can sometimes exceed the capacity system (e.g., during heavy rainfall events or snowmelt). When this occurs, untreated stormwater and wastewater, discharges directly to nearby water bodies.

Separate Storm Sewer System

System of conveyances (e.g., roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, storm drains) that are designed to collect and convey stormwater, which is not a combined sewer and not a part of a Publicly Owned Treatment Works (POTW)







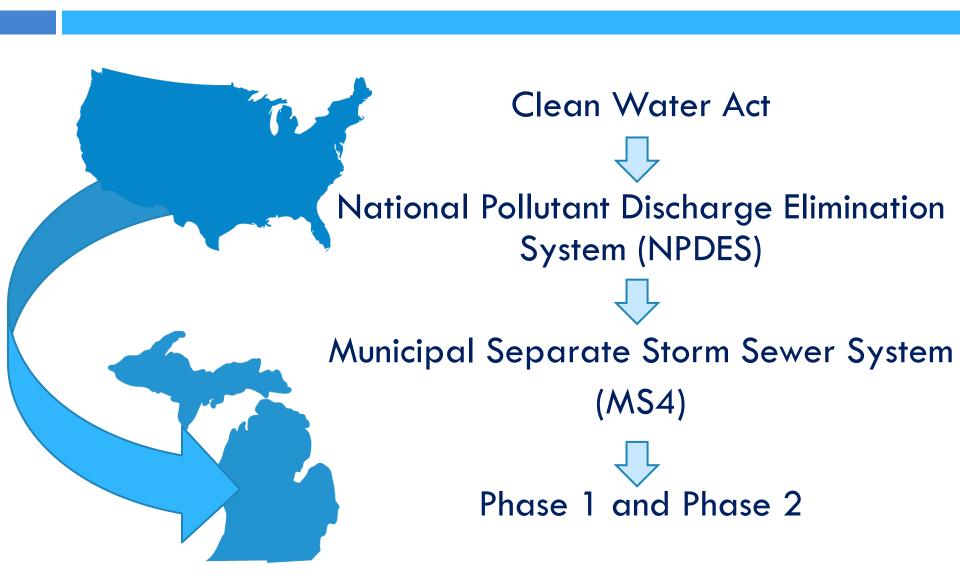
Why should we care?







Stormwater Regulation



MS4 Permit

- Municipal Separate Storm Sewer Systems
 - The MS4 is a conveyance or system of conveyances that is owned by a municipality that discharges to waters of the United States that is not a part of a combined sewer or sewage treatment plant.
 - To prevent harmful pollutants from entering the waterways through MS4s, certain municipalities are required to obtain permits and develop stormwater management programs.

GVMC



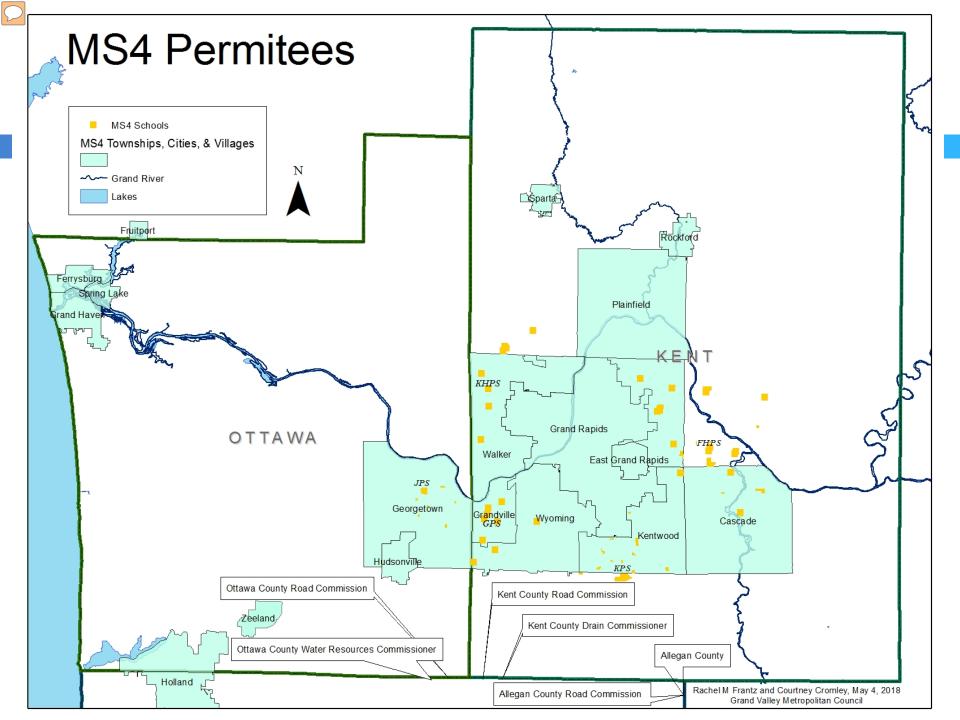


Macatawa Area Coordinating Council

A Cooperative Effort Among Units of Government



- Michigan offered a Watershed Permit
- Formed LGROW
- Permit Process
 - Collaboration starts with a shared strategy
- Implementation for Compliance
 - Sharing tools
 - Meeting common goals
- Going Above and Beyond
 - Watershed Data Repository
 - Regional Stormwater Ordinance









PUBLIC EDUCATION AND OUTREACH

Perform outreach to educate citizens about the impacts that polluted stormwater runoff discharges can have on water quality.



PUBLIC PARTICIPATION/ INVOLVEMENT

Provide opportunities for citizens to participate in program development and implementation



ILLICIT DISCHARGE DETECTION AND ELIMINATION

Develop and implement a plan to detect and eliminate illicit discharges to the storm sewer system.



CONSTRUCTION SITE RUNOFF CONTROL

Develop, implement, and enforce an erosion and sediment control program for construction activities that disturb 1 or more acres of land.



POST CONSTRUCTION RUNOFF CONTROL

Develop, implement, and enforce a program to address discharges from post-construction stormwater runoff from new development and redevelopment areas.



POLLUTION PREVENTION/ GOOD HOUSEKEEPING

Develop and implement a program to prevent or reduce pollutant runoff from municipal operations.

This information was taken from EPA Fact Sheet 2.0 - Ar Overview of the Small MS4 Stormwater Program

Where do I find my Illicit Discharge Elimination Plan?

Illicit Discharge Elimination Plan = IDEP

- LGROW
 - https://www.lgrow.org/ms4communities/
- MACC



IDEP

□ IDDE training video 14 minutes



Definition – Illicit Discharge

Illicit Discharge: "The discharge of pollutants or non-storm water materials to storm water drainage systems via overland flow, or direct dumping of materials into a catch basin."





Definition - Illicit Connection

Physical connection to the drainage system that:

- Primarily conveys illicit discharges into the drainage system and/or
- Is not authorized or permitted by MDOT (where MDOT requires such authorization or permit)



Definition - Point Source Discharge (PSD)

"An outfall from a drainage system to waters of the state, or a point where a storm water drainage system discharges into a system operated by another public body."





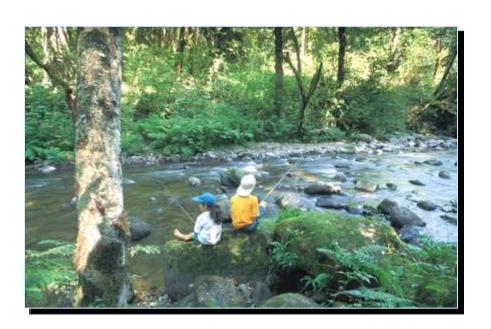
What are Waters of the State?

Includes:

- The Great Lakes and their connecting waters
- All inland lakes
- Rivers
- Streams
- Impoundments
- Open drains
- Wetlands
- Other surface bodies of water within the confines of the state

Does Not Include:

 Drainage Ways and ponds used solely for wastewater conveyance, treatment, or control







IDEP Inter-jurisdictional Cooperation

State and federal law requires regulated Municipal Separate Storm Sewer Systems (MS4s) to have effective programs to find and eliminate illicit discharges to their systems (Illicit Discharge Elimination Plan). In some cases one community's MS4 discharges into another community's MS4.

We, as Storm Water Program Managers for our communities, recognize this requirement. We agree to work cooperatively with other MS4 communities where an illicit discharge is suspected to originate across our jurisdictional boundaries.

We agree to work cooperatively with other MS4 communities where an illicit discharge is suspected to originate across our jurisdictional boundaries.

Stormwater Program Manager for City of Grand Rapids

Wastewater Treatment Administrative Offices 1300 Markel Avenue SW Grand Rapids, MI 49503 Tel: (616) 456-3625 Fax: (616) 456-3711 Engineering 1900 Oak Industrial Dr. NE Grand Rapids, MI 49505 Tel: (616) 456-3690 Fax: (616) 456-3138 Sewer Maintenance 660 Market Avenue. SW Grand Rapids, MI 49503 Tel: (616) 456-3246 Fax: (616) 456-3736 Stormwater Maintenance 1120 Monroe NW Grand Rapids, MI 49503 Tel: (616) 456-3253/3127 Fax: (616) 456-4088



Q & A

Which of the following types of operations can be a source of illicit discharge?

- a. Private homes
- b. Industrial facilities
- c. Restaurants
- d. Municipal facilities
- e. All of the above











Non-Stormwater Discharges: EXEMPTIONS

- Landscape irrigation
- Discharges from potable water sources
- Air conditioning condensate
- Water from crawl space pumps
- Foundation drains
- Groundwater



What about swimming pools?

DRAINING YOUR SWIMMING POOL?

3 easy steps to drain your residential pool while protecting the environment

1. Dechlorinate

- Sunlight
- Stop adding chlorine and expose to sunlight for two weeks
- Continue to run pump during this time
 OR



- Purchase dechlorination agent that meets EPA standards
- Vitamin C-based dechlorination tablets are also acceptable and safer to handle
- Follow directions provided by manufacturer

2. Infiltrate

- Find a grassy area, garden, or other natural area on your property
- Slowly pump pool water into designated area and allow to soak into ground
- Salt Water Pools
- NEVER drain a salt water pool into a storm sewer
- Drain in stages on your property where water can absorb
- Too much salt in one spot may kill vegetation and no longer sustain growth
- · Failure to pump slowly may flood the drainage area

3. Storm Grate

- If you don't have a natural area available, you may slowly pump dechlorinated pool water to storm drain (salt water pool discharges prohibited!)
- Failure to remove chlorine or sediment from pool water before draining may result in fines







Q & A

Pure stormwater run-off...

- a. Is cloudy
- b. Is foamy
- c. Is clear and bright
- d. Has rainbow sheen
- e. All of the above





Q & A

Which of the following are allowed in municipal separate storm sewer systems(MS4)?

- Rainwater run-off
- Sanitary wastes from hospitals and long-term care facilities
- c. Milk
- d. Floor mat rinse water
- e. Water from draining a swimming pool



Inspection of outfalls

- How to execute dry-weather screening
 - **Dry Weather Conditions** exist if there has been less than 0.1" of prcipitation in the previous 48-72 hours.

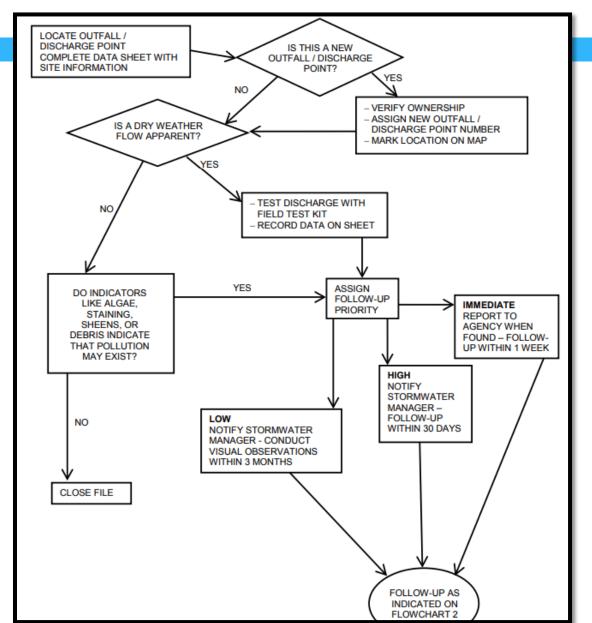


Inspection Form

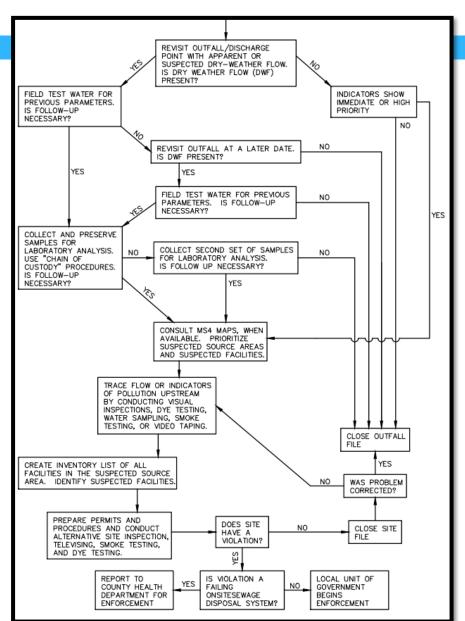
	IDEP DRY W	EATHER SCRE	ENING DAT	A SHEET		ficeh
GENERAL				Outfall ID		
Date	Time	Air Temp	°F Recei	iving Water		
Crew Name		_	ast Rain	_	Clear	/Sunny
Photograph #					Partly	
GPS Coordinates	*N		°W (decima	I degrees)	Overd	,
TYPE OF OUTFALL Material & Size						
,						
FLOW OBSERVATION Odor None Color Clear Turbidity Clear Floatables None OUTFALL AREA OBSE Deposits/Stains	Musty Light Brown Slightly Trash ERVATIONS None M	Sewage Dark Brown Moderate Sewage	Rotten Egg Green Highly Foam	Gasoline Grey Opaque Oil Sheen	Oil Black	Other** Other**
Vegetation			xcessive	Algae		Other**
Debris	None Ti	ssue	Other**	-	If Other, include	comments
OTHER OBSERVATION Pollution Source	NS NEAR OUTFALL Debris/Trash Septic System Upland Source Cobble/Gravel Hardpan (solid clay	Const Streat Tile C Sand	ruction Runoff mbank Erosion outlet (coarse) ial	G	coad Crossing fully Erosion ther** luck/Silt (fine) ther** If Other, include	
FIELD TEST KIT ANAL	YSES	OTHER ANALYS	ES			
Parameter Value pH	Units SU H, M, L, or None mg/L °F		lue Units	Parameter	Value	Units
Follow Up Nor Low	ne High F v Priority Imme		er - explain	Additional attached		on
Comments						



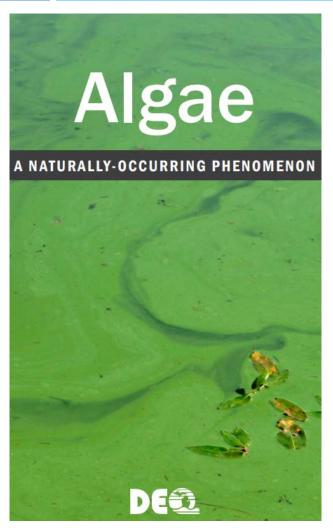
Use form and flowchart



Use form and flowchart



Things you may see





Naturally Occurring Phenomena

- MDEQ
 - □ https://www.michigan.gov/deq/0,4561,7-135-3313 3681 3686 3728-304354--,00.html



Foam





Suds



Suds may be harmful to fish because suds deplete oxygen levels in the water. Suds often enter lakes and streams as a result of improperly connected car washes or washing machines.

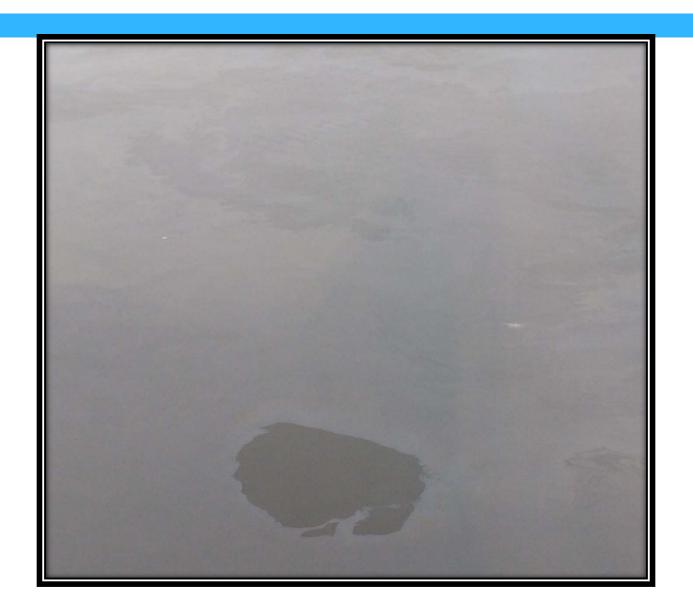
Bacteria



Bacteria create oil-like films when they attach themselves to the water surface. Sunlight bounces off the films, giving them an oily appearance. To test the difference between a bacterial film and oil floating on the water, break the film. If the film stays broken, it is a natural bacterial film. If it flows back into place, it is petroleum, which indicates pollution.

Bacteria produce different color films, coatings, and slimes. Bacteria that precipitate (settle out of water as a solid) copper minerals may make turquoise blue films. Green and purple bacterial slimes may appear when sulfur is present, while white slimes occur in the presence of aluminum, sulfur, or calcium minerals. Iron bacteria produce brown or reddish-brown deposits.

Bacteria

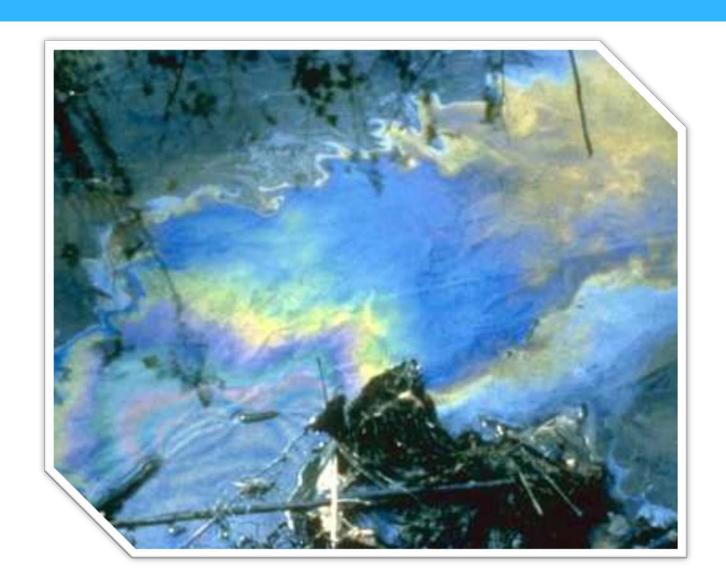


Oil

Oil/Gas is recognized as a sheen on the water.

Natural sheens may be differentiated from an oil/gas sheen by swirling the sheen around in the water. If it re-attaches, the sheen is oil/gas. Natural sheens will remain separated. Oil/Gas enters waterbodies via storm water runoff (spills while topping off at gas stations, oil leaks on pavement, etc.) and illegal dumping

Oil



Sewage

Sanitary Sewage may be present if there is black staining inside the drainage pipe; visible evidence of sanitary waste, such as toilet paper; or opaque or gray water. Sewage may originate from septic tank overflow pipes or improperly dumped travel trailer waste

Septic Systems

- □ Failing septic systems
 - Cheater pipes
 - Tomato plants

Coordinate with the health department

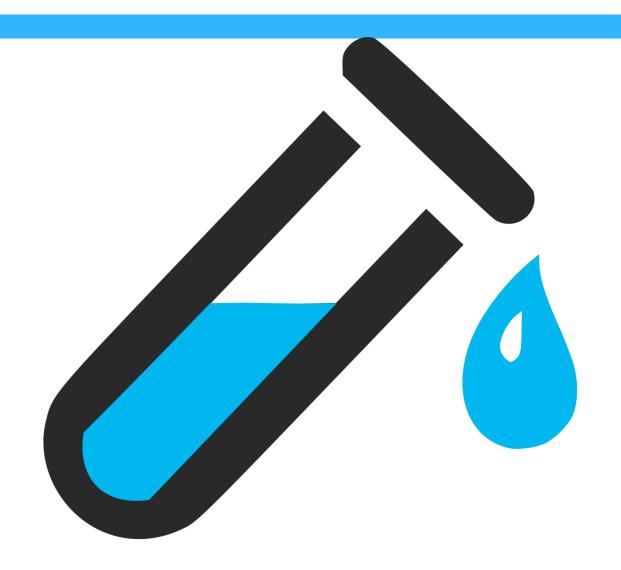
Using maps to find outfalls

- System info in GIS
- Using Arc Collector
 - Can attach inspection form and photos
 - Determine accuracy of outfalls



Sampling in the field

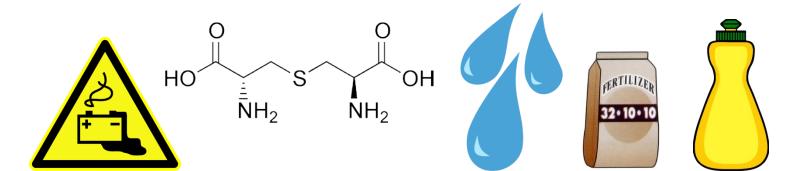
- Temperature
- Surfactants
- □рН
- Ammonia





Field Test Experiment

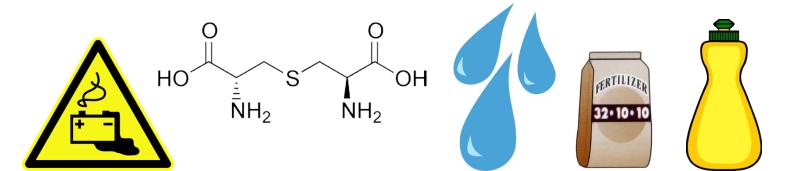
	Field Test	Experiment	
Sample	Represents	PH	Amonia
	1 Battery Acid		
	2 Lye		
	3 Ground Water		
	4 Fertlizer		
	5 Detergents		





Field Test Experiment

	Field Test	Experiment		
Sample	Represents	PH	Amo	onia
	1 Battery Acid		4	6
	2 Lye		8	0.5
	3 Ground Water		7	0
	4 Fertlizer		3	3
	5 Detergents		6	6





Outfall Prioritization

Table 1 - Field Testing Results Evaluation Guidelines

Parameter	Test Range	None	Low	High	Immediate
Temperature °F	32-100	44 - 75	40 - 43 or 76 - 85	32 - 39 or 86 - 99	<32 or >100
pH	0-14	6 - 9.5	5 - 6 or 9.5 - 10.5	4 - 5 or 10.5 - 11	<4 or >11
Surfactants	detect presence	none	low or medium	high	
Ammonia ppm	0-6	0 - 1	1 - 3	3 - 6	>6

Follow Up



Follow Up — Working your way upstream





Follow Up

- Lab samples
- □ Televising the sewer
- Dye testing
- Smoke testing







How long after the last significant rainfall should flow in a stormwater outfall make you suspicious?

- a. 1 hour
- b. 8 hours
- c. 1 day
- d. 2-3 days



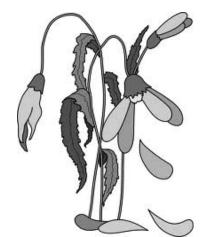




Which of the following would be suspicious if observed at a stormwater outfall?

- a. Vapors of fumes
- b. Dead or dying vegetation
- c. Discolored water
- d. All of the above









What could cause a strong odor at a stormwater outfall?

- a. Sanitary sewage
- b. Garbage
- c. Gasoline
- d. Any of the above



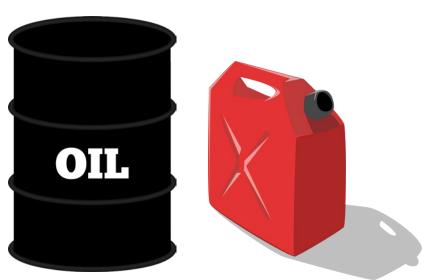






A stained storm drain inlet is probably a sign of...

- a. A recent MS4 maintenance work
- b. A marking to indicate it need repair
- c. Past illicit discharges
- d. Dye testing







What is the most likely illicit discharge from construction site?

- a. Silt and sediments
- b. Waste oil
- c. Floatables
- d. Pet wastes
- e. Waste pesticides





Health and Safety Plan

- Hazards:
 - Water samples
 - Confined spaces
 - Poisonous plants
 - Bug bites
 - Heat Exhaustion
 - Heat Stroke (medical emergency)
- If you feel unsafe in the field, leave
- Carry a first-aid kit



Logistics of Outfall Screening 2018

- GVMC
- Ottawa County



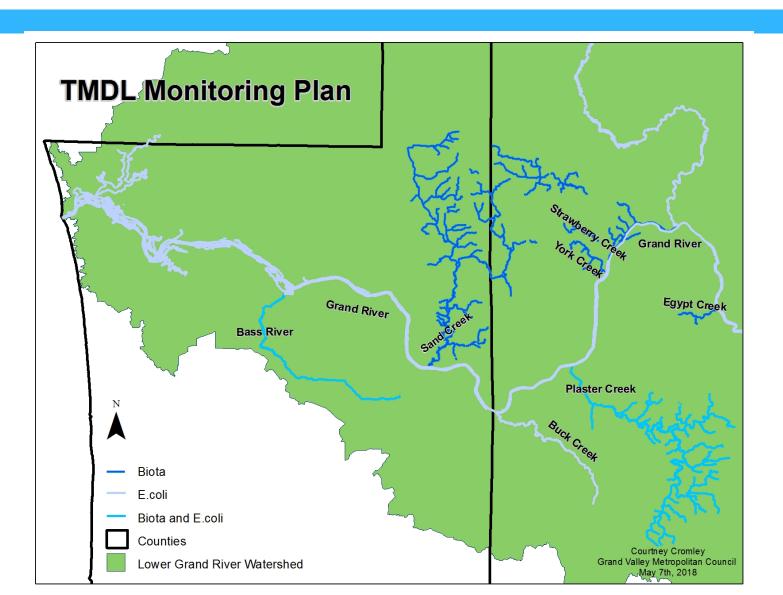
2013-2014 Results

Lower Grand River Organization of Watersheds - 2014 IDEP Report

		Table	5 - IDEP Dr	y Weather S	creening	Analysis	s:				
	Outfalls	Outfalls	Total Couldn't		Priority	Level:		Outfalls	High Ammonia	Very High/Low	Total New
Location:	Expected	Surveyed	Locate	Immediate	High	Low	None	With Flow	Levels	pH Levels	Outfalls
Cascade	7	7	2	0	0	3	4	1	0	0	0
East Grand Rapids	64	64	4	2	0	10	52	4	1	0	0
Ferrysburg, City of	28	28	0	0	2	2	26	8	0	2	0
Forest Hills Public Schools	10	10	0	0	0	0	10	0	0	0	0
Georgetown Charter Township	2	2	0	0	0	0	2	0	0	0	0
Grand Haven, City of	20	20	0	0	2	10	8	8	0	6	0
Grand Rapids Charter Township	1	1	0	0	0	0	1	0	0	0	0
Grand Rapids, City of	364	364	0	0	3	4	355	97	2	3	0
Grandville, City of	87	40	10	0	0	11	25	1	0	0	0
Hudsonville, City of	62	50	12	0	0	12	50	16	0	0	0
Kent County Drain Commissioner	522	519	3	1	0	113	410	123	3	0	5
Kent County Road Commission	373	333	40	0	2	89	282	10	4	0	2
Kentwood	345	345	0	0	0	27	318	108	0	1	0
Plainfield	4	4	3	0	0	3	1	0	0	0	0
Rockford	53	54	3	0	0	8	49	15	0	0	4
Sparta	29	26	2	0	0	7	19	3	0	0	0
Spring Lake, Village of	16	16	0	0	0	1	15	2	1	1	0
Walker	139	140	5	0	1	25	113	22	1	0	6
Wyoming	159	148	11	0	0	5	143	27	1	2	0
Totals:	2285	2171	95	3	10	330	1883	445	13	15	17
			4%	0.14%	0.46%	15%	87%	20%	1%	1%	



TMDL Monitoring



TMDL Monitoring

Table 6. TMDLs Addressed in Regu	lated Area	
Community	E. coli TMDL	Biota TMDL
East Grand Rapids, City of	Grand River, Plaster Creek	Plaster Creek
Forest Hills Public Schools	Grand River	n/a
Georgetown Charter Township	Bass River	Bass River
Grand Rapids, City of	Grand River, Plaster Creek, Buck Creek	Unnamed Tributary to the Grand River, Plaster Creek
Grand Rapids Charter Township	n/a	Unnamed Tributary to the Grand River
Grand Valley State University	Grand River	n/a
Grandville, City of	Grand River, Buck Creek	n/a
Kent County Drain Commissioner	Grand River, Plaster Creek, Buck Creek	Sand Creek, York Creek, Plaster Creek, Strawberry Creek, and Unnamed Tributary to the Grand River
Kent County Road Commission	Grand River, Plaster Creek, Buck Creek	Sand Creek, York Creek, Plaster Creek, Strawberry Creek, and Unnamed Tributary to the Grand River
Kentwood, City of	Grand River, Plaster Creek, Buck Creek	Plaster Creek
Plainfield Charter Township	Grand River	n/a
Walker, City of	Grand River	Sand Creek
Wyoming, City of	Grand River, Plaster Creek, Buck Creek	Plaster Creek



Illicit Discharges- what can you do?



Village of Spring Lake Illicit Discharge Elimination Plan Log

Item	Date	Data/Description	Person Entering Data
Incident Number			
Initial Report Description			
Person Assigned to Follow-up			
Initial Follow-up Report			
Subsequent Follow-up Report			
Final Resolution			
Resolution Verified			

IDEP REPORT FORM

FOR CITY OF FERRYSBURG EMPLOYEES

	NT NUMBER
	otion of IDEP.
	IDEP was observed:
Locatio	on of observed IDEP (address, street):
Name	of person(s) or company involved (if known):
Please	describe the IDEP (include photographs if possible):
Date th	is report was submitted:
	ame:
	Assigned to follow up:
Initial I	follow-up Report:
Subseq	uent Follow-up Report (Repeat as necessary):
	uent Follow-up Report (Repeat as necessary): esolution:
Final R	
Final R	esolution:
Final R	esolution:
Final R	esolution: tion Verified:
Final Resolution	esolution: tion Verified: Return Form:
Final Resolu	esolution: tion Verified: Return Form: tdumping, please fill out this report completely. Return it to our Storm Water Coordinator.
Resolution How to	esolution: tion Verified: Return Form: t dumping, please fill out this report completely. Return it to our Storm Water Coordinator. bessinger@ferrysburg.org Fax: (618) 844-0200
How to	Return Form: tom Verified: Return Form: tomping, please fill out this report completely. Return it to our Storm Water Coordinator. thesinger@fervisburg.org Fax: (618) 844-0200 Phone: (618) 842-5803
How to	esolution: tion Verified: Return Form: t dumping, please fill out this report completely. Return it to our Storm Water Coordinator. bessinger@ferrysburg.org Fax: (618) 844-0200



Reporting

https://www.lgrow.org/report/



ОМЕ

ABOUT US

WATERSHEDS

STORMWATER

PROJECTS

OTHER RESOURCE

EVENT





Q

Illicit Discharge Reporting Directory

KENT COUNTY

Kent County Drain Commissioner 616-336-3688

Kent County Road Commission 616-242-6910

Cascade Township online here

City of East Grand Rapids 616-940-4817 or online here

City of Grand Rapids dial 311 within City limits or 616-456-3000 outside City limits

City of Grandville dial 616-538-1990

City of Kentwood call 616-554-0737 Monday - Friday 8am - 5pm or 616-554-0751 after business hours or by email

City of Walker call 616-791-6327 Monday - Friday 8am - 5pm or nonemergency 24 hour police hotline after hours at 616-453-5441 or online here

City of Wyoming report here

OTTAWA COUNTY

Ottawa County Water Resources (Drain Commissioner) 616-994-4530

Georgetown Township call 616-994-4530

City of Ferrysburg 616-842-5803 or by email

MUSKEGON COUNTY

Muskegon County Drain Commissioner 231-724-6219

Contract the second of the second second of the second of

What is an illicit discharge?

For more information about what an illicit discharge is, isn't, and what to look for, go here.



Report ANY dumping into storm drains, streams or other water bodies.

Visit www.LGROW.org/report for community specific phone numbers.





Preventative Measures

- Regulatory Authority
 - Communities with MS4 permits are required to have an ordinance, or other regulatory mechanism, to enforce
 - the prohibition of illicit discharges
- Education
 - Stenciling storm drains







What information about a suspected illicit discharge would be useful to collect and report?

- a. Weather conditions
- b. Date and time
- Location
- d. Description of the discharge





A suspected illicit discharge from which of the following types of operations would not need to be reported?

- a. Apartment complex
- Retail shopping center
- c. Service station
- d. Public park
- e. Report all of them





Is water from a Commercial Car Wash facility an illicit discharge?

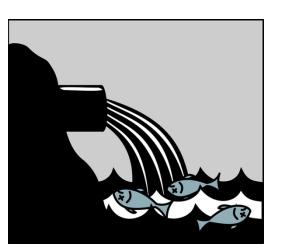
- a. Yes, always
- b. Sometimes, only when polluted
- c. No, never





What are the proper actions of notification of an illicit discharge?

- a. Do nothing, someone else will take care of it
- b. Send an email to Cara
- c. Notify your municipality or other proper authority



Illicit Discharge: Examples





Illicit Discharge: Overturned Truck

Problem: "A truck turned over on the I-96 to US 131 ramp. The diesel tank broke and caused approximately 100 gallons of fuel to spill over the road. Also, the truck was hauling granular fertilizer, and approximately 2 cubic yards spilled from the truck".







Illicit Discharge: Overturned Truck

Solution: "Walker emergency personnel addressed the immediate diesel spill. The truck company removed the spilled fertilizer from the shoulder. Young's Environmental completed the cleanup, including dirt excavation where diesel went over the shoulder of the road. Neither material entered area drainage or waterways."





Illicit Discharge: Grass Dumper

Problem: "Walker DPW employee reported a citizen observed someone dumping grass clippings into Sand Creek."

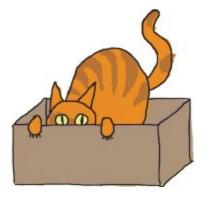
Solution: "Because the offender was unknown, the brochure "Stormwater Information for Landscapers and Homeowners" was mailed to all residents in the areas".



Illicit Discharge: Kitty Litterer

Problem: "We received a complaint late in the afternoon on Wednesday, December 2 from a resident that someone was dumping kitty litter into the storm drain".

Solution: "We dispatched a vactor truck to clean it up on Thursday morning, December 3. No evidence of dumping of kitty litter was noticed in the area, but the operator still cleaned out the catch basin. We distributed educational brochures to this block on December 8. That day, we noticed evidence of kitty litter being dumped into the catch basin. We requested that a vactor truck be re-dispatched this morning to clean it up".





Other stories?



Documentation Reporting

- Progress report to MDEQ
 - What needs to be documented:
 - Completed outfall screening
 - Known or resolved illicit discharges during the reporting period and status of elimination (specific # and type)
 - Status and schedule for elimination
 - Septic fields and Health Department involvement
 - Determine the effectiveness of the program and the method used to make the determination
 - New point source discharges
 - New maps



Contacts

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Kelly Goward

Watershed Project Manager Macatawa Area Coordinating Council kgoward@the-macc.org 616-395-2688





Macatawa Area Coordinating Council

A Cooperative Effort Among Units of Government