

### Maintenance Services Contractor Training Drainage Rehabilitation, Repair, Replacement Contractors





October 2020



Rodney Way
Maintenance Liaison
rway@dot.ga.gov

David Sparks
Maintenance Liaison
dsparks@dot.ga.gov

Brad McManus
MS4 Program Manager
Office of Design Policy and Support
bmcmanus@dot.ga.gov



There are many parties involved in MS4 Program implementation at GDOT. Brad McManus with the Office of Design Policy Support is the MS4 Program Manager. David Sparks and Rodney Way are the Maintenance Liaisons to the MS4 Program.



## **Directions for Training**

Contractor managers/supervisors shall:

- 1. Review the contents of the applicable portions of the training with employees of MSC contractors
- 2. Record participation and understanding, and
- 3. Submit record of training to the respective GDOT Assistant District Maintenance Manager-Assets.

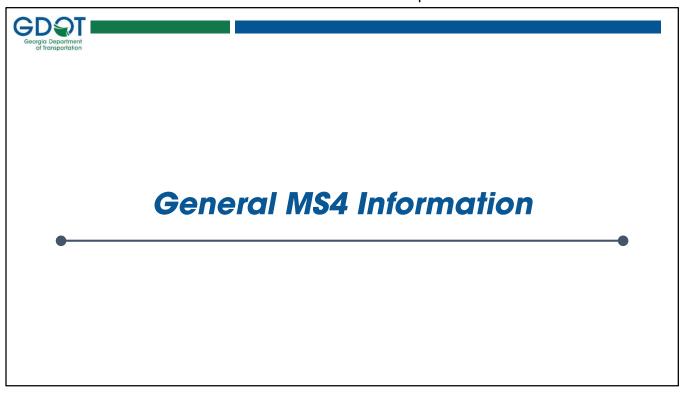
The GDOT Maintenance Service Contractor Training, coordinated through the Office of Maintenance, has been specifically prepared and provided for presentation to all contractor personnel assigned to those maintenance service contracts. Contractor managers/supervisors shall review the contents of the applicable portions of the training with those employees, record their participation and understanding, and submit this record of training to the respective GDOT Assistant District Maintenance Manager-Assets for subsequent forwarding for inclusion into the GDOT MS4 Permit Annual Report.

For any questions related to this training, please refer to the information provided on Slide 2 of the presentation or contact the respective District Environmental Compliance Specialist.

October 2020

CONTRACT:			DIS	TRICT(S):
CONTRACTOR:		ADDRESS/	LOCATION:	
그리 아이는 아이를 하게 하는데 하는데 하는데 하는데 하는데 없다.	e training module with those employees, i e GDOT Project Engineer/Maintenance Col	하늘 살면 하면 되었다. 하는데	1884 N. 1884 B. H. 1884 N. 1884	
Annual Report. For any questions related	d to this training, please contact any one o	f those identified on S	lide 2 of the module.	
The No. 100 December 100 Decemb		f those identified on S	TELEPHONE NO.	E-MAIL
For any questions related	clearly)  ORGANIZATION			E-MAIL
For any questions related	clearly)  ORGANIZATION			E-MAIL
For any questions related	clearly)  ORGANIZATION			E-MAIL

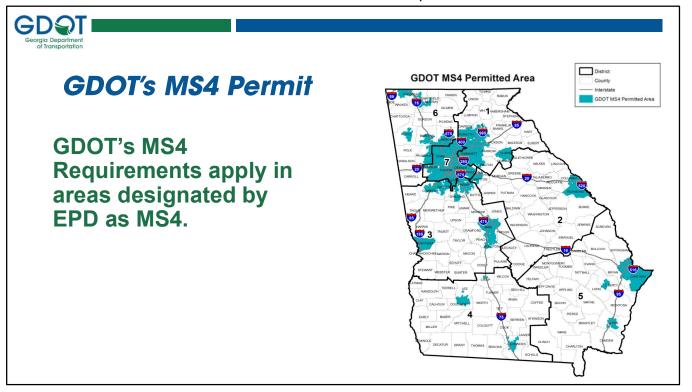
The training record should be submitted to the respective GDOT Assistant District Maintenance Manager. This training record will be used for inclusion into the GDOT MS4 Permit Annual Report.





Add General Permit introduction....

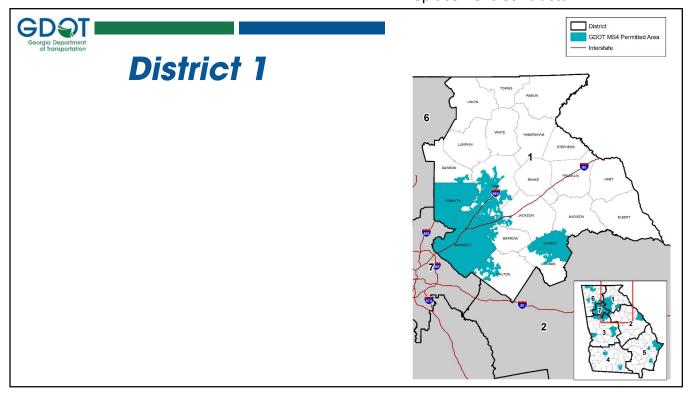
GDOT was issued its first MS4 permit in 2012, with the most recent permit issued in January of 2017.



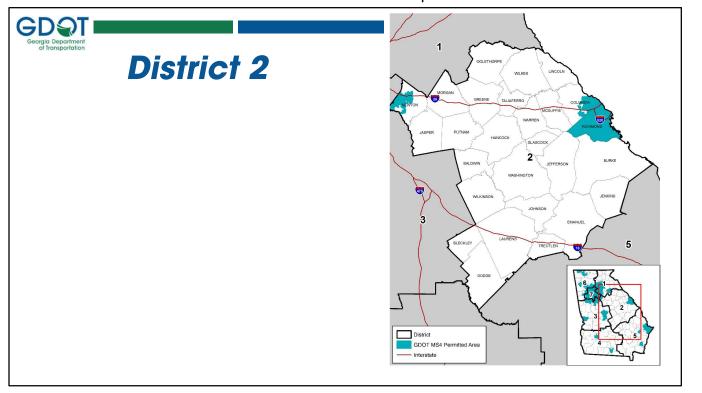
This permit identifies certain urbanized areas across the state where the MS4 permit is effective. If your maintenance contract has you performing work in one of these cities or counties, there are certain activities that you perform, as part of your contract, they have to be tracked and reported back to the State of Georgia to document permit compliance.

MS4s areas are: 1) are areas designated by EPA and GA EPD based on population density and surface water impacts, 2) have a geographic boundary, 3) require industrial activities to hold a permit to discharge stormwater, and 4) require implementation of certain minimum control measures to prevent stormwater pollution.

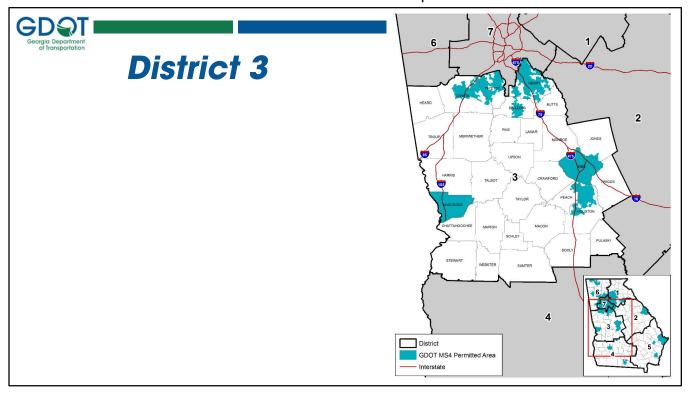
GDOT has determined that ALL facilities will follow same MS4 procedures whether within MS4 designated area or not. The only difference will be that those facilities outside MS4 areas are not subject to the MS4 regulatory reporting and inspection requirements imposed by GA EPD.



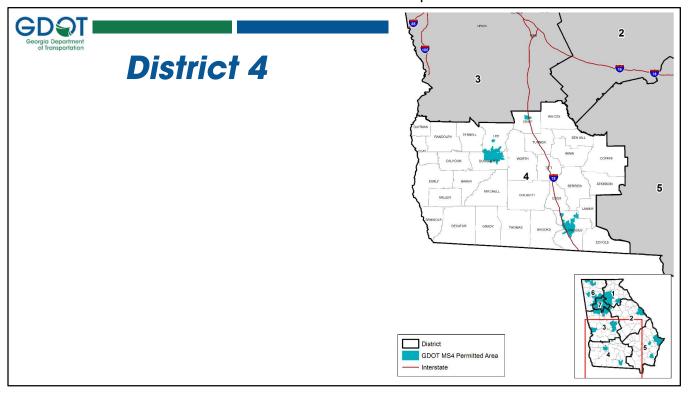
District 1 MS4 areas include Gwinnett County, Forsyth County, Clarke County, and portions of Dawson, Hall, Barrow, Walton, Jackson, Oconee, and Madison Counties.



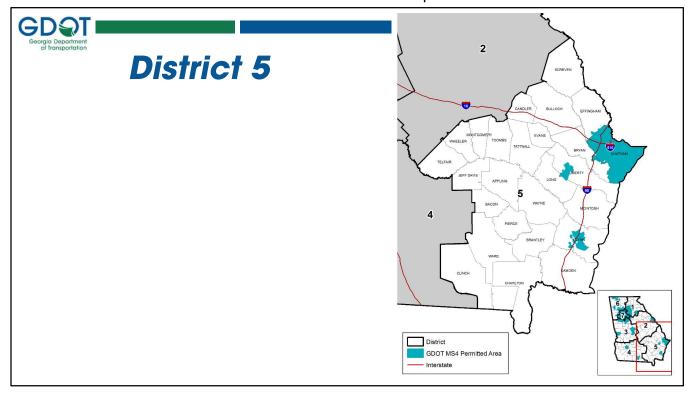
District 2 MS4 areas include Richmond County and portions of Columbia ad Newton Counties.



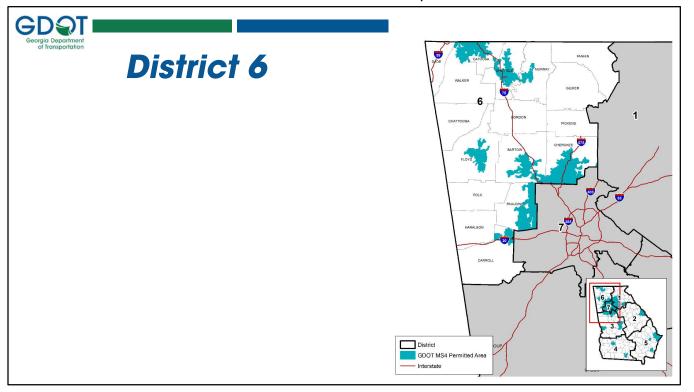
District 3 MS4 areas include Muscogee County, Bibb County, and portions of Coweta, Fayette, Spalding, Henry, Peach, and Houston Counties.



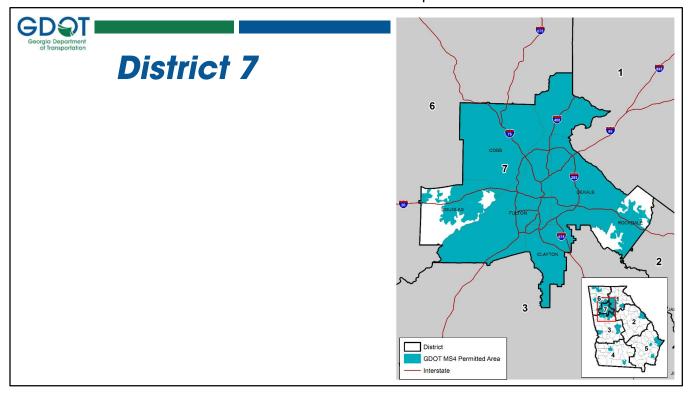
District 4 MS4 areas include portions of Lee, Dougherty, and Lowndes County and the City of Cordele.



District 5 MS4 areas include Chatham County and portions of Liberty, Long, and Glynn Counties.



District 6 MS4 areas include portions of Walker, Catoosa, Whitfield, Murray, Floyd, Bartow, Cherokee, Paulding, and Carroll Counties.



District 7 MS4 areas include Cobb, Fulton, DeKalb, and Clayton Counties, as well as portions of Douglas and Rockdale Counties.



# Comprehensive MS4 Permit Requirements

### Six Minimum Control Measures (MCMs)

Public Education and Outreach on Stormwater Impacts

Public Involvement / Participation

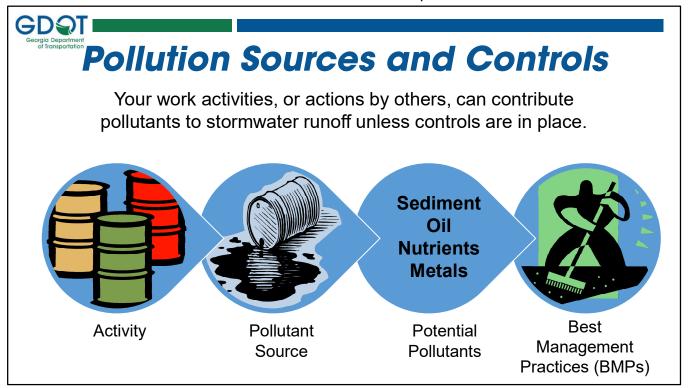
Illicit Discharge Detection and Elimination (IDDE)

Construction Site Stormwater Runoff Control Post-Construction Stormwater Management Pollution Prevention/Good Housekeeping for Municipal type Operations

GDOT's MS4 permit requires GDOT to comply with a number of requirements or Best Management Practices (BMPs). These include

- 1. Public education and outreach activities, like this training,
- 2. Public involvement and participation, such as the Adopt-a-highway program.
- 3. Illicit discharge detection and elimination activities, for example checking our stormwater system during dry periods to search for illegal connections.
- 4. Construction stormwater management includes our construction erosion control and WECS programs.
- Post-construction stormwater management includes construction of practices that will control stormwater quantity and stormwater quality after construction activities have ceased.
- 6. Good housekeeping and pollution prevention activities are focused on GDOT facilities, where we make sure our equipment and materials are stored in ways that minimize pollution.

GDOT must document all activities completed to comply with these requirements, and submit an annual report to Georgia EPD.



As a GDOT Maintenance contractor, you play an in important part in the protection of our water resources. Regardless of the type of work you are contracted to perform, your regular presence on GDOT roadways and facilities provides you with an opportunity to contribute to GDOT's water quality improvement activities.



### **What Causes Pollution**

#### **ACTIVITIES**

- Vehicle & equipment repair
- · Outdoor vehicle & equipment parking
- Outdoor material handling & storage
- Incorrect application of materials
- Fueling
- Vehicle Washing
- Salt & brine storage
- Waste disposal
- Right-of-way maintenance
- Materials transport
- Construction & maintenance
- Landscaping
- Sanitary sewage collection, treatment & disposal

#### **POTENTIAL POLLUTANTS**

- Oil, gas, lubricants
- · Liquid asphalt
- Coolant
- Cleaning solvents
- Detergents
- Salt & brine solution
- Soil, sand & sediment/grit
- · Litter & solid waste
- Chemicals
- · Pesticides, herbicides & fertilizers
- Asbestos fibers
- Metals
- Bacteria
- Nutrients

Every day work activities, as well as activities performed by others that you may observe on the job, can contribute pollutants to stormwater runoff unless controls are in place. While working for GDOT under a maintenance contract, we need all employees aware of these potential every day sources of pollution and be ready to respond and report them when necessary.





# Drainage Rehabilitation, Repair, Replacement Contracts

The following MMS Activities shall be appropriately documented for MS4 Permit compliance reporting:

- Manual Cleaning of Drainage Structures and Pipes
- Mechanical Cleaning of Drain Structures and Pipes
- Clean, Restore, Reshape, or Repair of Ditches, Swales, Channels

Contractor shall maintain a digital (EXCEL) record of MS4 Permit-related activities.

Drainage Rehabilitation, Repair, Replacement, & Miscellaneous Maintenance Services contracts include significant reporting requirements for MS4 permit compliance. Exhibit 3 of your contract outlines the specific items that you are required to

- 1) Manual Cleaning of Drainage Structures and Pipes
- 2) Mechanical Cleaning of Drain Structures and Pipes
- 3) Cleaning, Restoration, Reshaping, or Repairing of Ditches, Swales, Channels

track and document during your maintenance activities. These activities include:



# Drainage Rehabilitation, Repair, Replacement Contracts

The following MMS Activities shall be appropriately documented for MS4 Permit compliance reporting (continued):

- Drainage Pipe Installation or Repair
- Build or Repair Concrete Drainage Structures (Manholes, Catch Basins, Junction Boxes, Inlets, Flumes, Headwalls, Paved Ditches/Swales, etc.)
- Culvert Repair

Contractor shall maintain a digital (EXCEL) record of MS4 Permit-related activities.

- 4) Installation or Repair of Drainage Pipe
- 5) Building or Repair Concrete Drainage Structures (such as Manholes, Catch Basins, Junction Boxes, Inlets, Flumes, Headwalls, and Paved Ditches/Swales)

6) Repairing Culverts



### Drainage Rehabilitation, Repair, Replacement Contracts

**MS4** Requirements

Contractor shall perform all drainage asset installation / repair / replacement operations to include the following:

- GPS location of drainage structure and pipe/ditch/swale/channel limits' within 1 meter horizontal accuracy in accordance with GDOT Policies and Specifications.
- Include attribute fields noting the type of installation/repair/replacement work involved, structure and pipe/culvert sizes, ditch/swale/channel shape, and any visual observations of surcharged flow and/or evidence of illicit discharges.
- All suspected illicit discharges should be reported to your assigned Project Manager or District Maintenance office immediately.

A requirement of your contract is to collect GPS data related to your stormwater system rehab, repair and replacement activities in accordance with GDOT Policy 8085-2-GPS on Data Collection. All GPS data collected must be within 1 meter accuracy.

Your GPS attribute fields must include the type of installation/repair/replacement work involved, structure and pipe/culvert sizes, ditch/swale/channel shape, and any visual observations of surcharged flow and/or evidence of illicit discharges.

If you suspect an illicit discharge, this should be reported to your Maintenance Contracts Manager or District Maintenance office immediately.



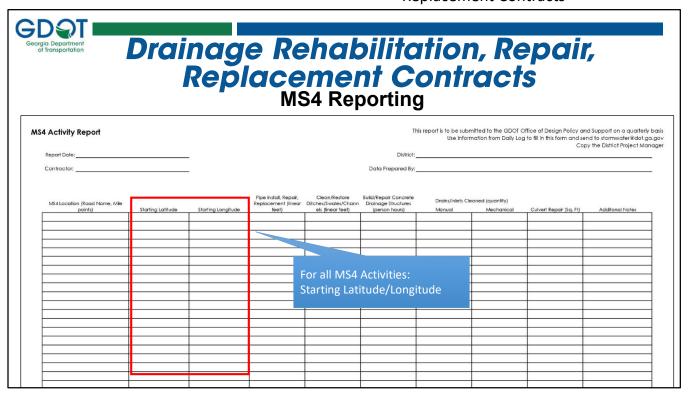
For your MS4 reporting, always use the Excel reporting forms provided by GDOT.

rgia Department of Transportation	<b>Drai</b>	nage Repl	e Re ace	ehak e <b>me</b> l 84 Rej	oilite nt C	atio on	on, Re tract	epai s	r,
S4 Activity Report					Distr	This report is to	o be submitted to the GDOT o Use information from Daily Lo	Office of Design Policy o g to fill in this form and s Co	and Support on a quarter
Contractor:					Data Prepared				
MS4 Location (Road Name, Mile points)	Starling Latitude	Storting Longitude	Pipe Install, Repoir, Replacement (linear feet)	Clean/Restore Ditches/Svales/Chan ets (Incar feet)	Build/Reparation of Drainage Strus	For all 1. R 2. C 3. D	MS4 Activities eport Date contractor Nambistrict	ie	Additional Notes

For each report, completely fill out all required information including Date of Report, name of the contractor, GDOT District, and identify who prepared the report.

eorgia Department of Transportation	Drai	nage Repl	e Re ace	eho m S4 F	ak er Rep	oilite orting	ntion onti	n, Re	epaii s	
MS4 Activity Report  Report Date:  Contractor:		-				District:	Use inform	mation from Daily Log	to fill in this form and se Cop	nd Support on a quarterly nd to stormwater@dot.go by the District Project Man
MS4 Location (Road Name, M points)	le Starting Latitude	Starting Longitude	Pipe Install, Repair, Replacement (linear feet)	Clean/R Ditches/Swa els (linec	les/Chann	Build/Repair Concrete Drainage Structures (person hours)	Drains/Inlets Cle Manual	eaned (quantity)  Mechanical	Culvert Repair (Sq. Ft)	Additonal Notes
	For a 1. 2. 3.	all MS4 Activ City/Count Road Nam Mile Mark	e							

Each time drainage rehab, repair, or replacement is performed in an MS4 area, it should be reported. Your report form should note the road name and mile markers where activities were performed.



GPS coordinates of all repairs and replacements should be reported as latitude and longitude.

eorgia Department of Transportation	Drai	nag Repl	Reho Cemo MS4 R	abilite ent C eportin	ation onti	n, Re	epaii s	
MS4 Activity Report  Report Date:  Contractor:				Districe Data Prepared By	Use infor		g to fill in this form and set Cop	id Support on a quarterly b nd to stormwater@dot.ga. yy the District Project Mana
MS4 Location  Road Name, Mile points)	Starting Latitude	Starting Longitude	Pipe Install, Repair, eplacement (linear feet) Ditches/Swale ets (linear)	/Chann Drainage Structures	Drains/Inlets Ck Manual	eaned (quantity)  Mechanical	Culvert Repair [\$q. Ft]	Additonal Notes
			structure pipe/ditc	i location of dr and h/swale/chani thin 1 meter h	nel			

Remember your contact requires the GPS locations of drainage structures to be reported within 1 meter horizontal accuracy

eorgia Department of Transportation	Drai	nag Repl	e Re ace	ehak e <b>me</b> l 64 Rep	pilito nt C porting	ntior ontr	n, Re act	epaii S	
MS4 Activity Report  Report Date:  Contractor:					District: Data Prepared By:	Use inform		g to fill in this form and set Cop	d Support on a quarterly b nd to stormwater@dot.ga.g sy the District Project Mana
MS4 Location (Road Name, Mile points)	Starting Latitude	Storting Longitude	Pipe Install, Repair, Replacement (linear feet)	Clean/Restore Ditches/Swales/Chann els (linear feet)	Build/Repair Concrete Drainage Structures (person hours)	Drains/Inlets Cle Manual	raned (quantity)  Mechanical	Culvert Repair (Sq. Ft)	Additonal Notes
					report in I  1. Pipe  2. Pipe	n or Repair inear feet s installed s repaired			
					3. Pipe	s replaced			

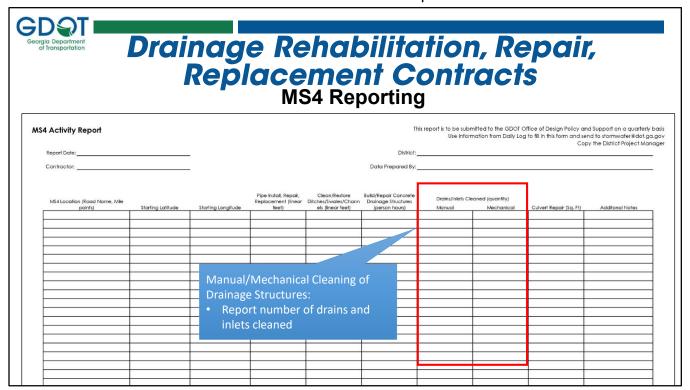
When drainage pipe installation or repair is performed, the length of pipe installed, repaired, or replaced should be reported in linear feet.

reorgia Department of Transportation	Drainag Rep	ge Re place M	ehak emel S4 Re	oilita nt Co porting	itior ontr	n, Re act	epaii s	
MS4 Activity Report  Report Date:  Contractor:				Thi District:_ Data Prepared By:_			to fill in this form and se	d Support on a quarterly b nd to stormwater@dot.ga.ç y the District Project Mana
MS4 Localion (Road Name, Mile points)	Starling Latitude Starling Longitu	Pipe Install, Repair, Replacement (linea de feet)	Clean/Restore Ditches/Swales/Chan els (linear feet)	Build/Repair Concrete Drainage Structures (person hours)	Drains/Inlets Cle Manual	aned (quantity) Mechanical	Culvert Repair (Sq. Ft)	Additonal Notes
Repa	n, Restore, Reshape, ir of Ditches, Swales, nels. Report in Linea Ditches/channels re Ditches/channels re Ditches/channels repaired/restored	ar Feet:						

When ditches, swales, or channels are cleaned, restored, reshaped, or repaired, the length of channel should be reported in linear feet.

Georgia Department of Transportation	Drainage Repl	e Reho acem MS4 I	abilita ent Co Reporting	ition, Re ontract	epair s	7
MS4 Activity Report  Report Date:  Contractor:			Th  District:_  Data Prepared By:_	s report is to be submitted to the GDOT C Use information from Daily Log	g to fill in this form and sen	
MS4 Location (Road Name, Mile points)	Build or Repair Concre Structures. Track/rep required for construct • Manholes • Catch Basins • Junction Boxes • Inlets • Headwalls • Paved Ditches/Swa	Replocement (linear Disches) we set (line linear li		Drains/inlets Cleaned (quantity) Manual Mechanical	Culvert Repair (Sq. Fr)	Additonal Notes

When concrete drainage structures such as manholes, catch basins, junction boxes, inlets, flumes, headwalls, or paved ditches/swales are built or repaired, the man hours required for construction should be reported.



When manual or mechanical cleaning of drainage structures is performed, the total number of drains and inlets cleaned should be reported per roadway as a quantity.

Secretary Department of Transportation	<b>Drai</b>	nage Repli	Reace MS	ehak mei 64 Rep	pilito nt C porting	ntior ontr	n, Re acts	pai s	r,
MS4 Activity Report  Report Date:  Contractor:					District:	Use inform		to fill in this form and s Ca	ind Support on a quarterly end to stormwater@dot.go ppy the District Project Man
MS4 Location (Road Name, Mile points)	Starting Latitude		Pipe Install, Repair, teplacement (linear feet)	Clean/Restore Ditches/Swales/Chann els (linear feet)	Build/Repair Concrete Drainage Structures (person hours)	Drains/Inlets Cle Manual	haned (quantity) Mechanical	Culvert Repair (Sq. Ft)	Additonal Notes
				Culvert Re • Report square	area of rep	airs, recorc	lin		

All culvert repairs should be reported by area, recorded as square feet.

eorgia Department of Transportation	Drai	nage Repl	e Rehabilitation, Repair, acement Contracts MS4 Reporting
Report Date:  Contractor:  MS4 Location (Road Name, Mile points)		Storting Longitude	This report is to be submitted to the GDOT Office of Design Policy and Support on a quarterly by Use information from Daily Log to fill in this form and send to stormwater@dot.ga.  Copy the District Project Mana District:  Data Prepared By:  Pipe Install, Repair, Replacement [linear Disches/Swales/Chann Drainge Structures feet] Prains, finlets Cleaned (quantity) Replacement [linear Disches/Swales/Chann Drainge Structures (person hours) Manual Mechanical Culvert Repair [Sq. Ft Additional Notes
			Note:  • Type of installation/repair/replacement work  • Structure and pipe/culvert sizes  • Ditch/swale/channel shape  • Visual observations of surcharged flow  • Evidence of illicit discharges (Report immediately)

Additional details such as the type of installation, repair or replacement work performed, structure descriptions, pipe or culvert sizes, shape of ditches, swales, and channels, as well as visual observations of surcharged flow should also be included in your report.

If you observe and evidence of illicit discharges, these should be reported immediately.



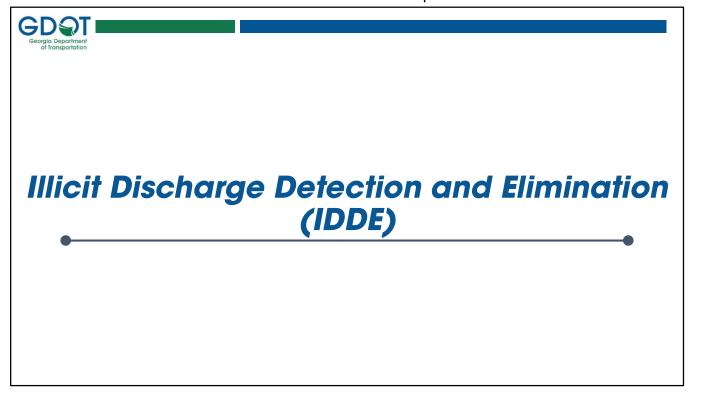
### Drainage Rehabilitation, Repair, Replacement Contracts

#### **MS4** Reporting

- 1. Submit reports concurrent with each invoice for work performed (but quarterly as a minimum).
- 2. Submit reports to Assistant District Maintenance Manager-Assets and Environmental Compliance Specialist for the information to be entered into Georgia Asset Management System (GAMS).

Drainage, rehabilitation, repair and replacement contractors are required to submit reports concurrent with each invoice for work performed a minimum of quarterly.

Reports should be submitted with the first invoice to the Assistant District Maintenance Manager – Assets and Environmental Compliance Specialist for the information to be entered in GAMS.





## **Maintenance Contractor**

Illicit Discharge Reporting Requirements

All GDOT Maintenance Contractors are expected to help GDOT by identifying and reporting illicit discharges

Report these issues to your assigned Project Manager or District Maintenance office immediately.

All GDOT Maintenance Contractors are expected to help GDOT by identifying and reporting illicit discharges

Some examples of illicit discharges include paint, cleaners or chemicals, overflowing sanitary sewers, leaking septic tanks, oil, gas and car fluids, cooking oil and grease, and litter and illegal dumping. These items should never go into storm drains or ditches, or onto the ground. Another good rule of thumb is, if it hasn't rained in 3 or more days there is water flowing, there could be an illicit discharge even if the water doesn't appear murky.

If you see spills, dumping, or a potential illicit discharge, report these issues to your Project Manager or District Maintenance office immediately.



### Illicit Discharge Detection & Elimination (IDDE)

NPDES MS4 Permit requirement GOAL: To reduce pollution to waterways through the removal of <u>non-stormwater</u> contributions to the storm sewer system.

- Sanitary Wastewater Improperly Plumbed Sewers (Sewage)
- Car Wash Bays (Oil and Grease)
- Improper Disposal of Auto and Household Toxins
- Maintenance Shop Floor Drains (Vehicle Fluids)





Introduction of the IDDE Manual.

Does not include AC condensate, fire hydrant flushing, irrigation water, etc.

Inspection personnel should be familiar w/ IDDE, as they may be the only person looking at these areas for quite some time

GDOT puts a lot of time, effort, and \$\$\$ into minimizing pollution; one concentrated source can cause big problems in receiving waters and negate this effort



# Illicit Discharges vs. Spills

### **Illicit Discharges**

- Reporting is required within 24hours online or by calling District Maintenance Engineer and/or ECE
- Inform your assigned Project
   Manager or District
   Maintenance Office

### **Spills**

- Contact 911 immediately if reportable and responsible (more on this next)
- Within 15 minutes contact the Georgia EPD Emergency Operation Center: 1-800-241-4113
  - · If reportable and responsible
- Inform assigned Project Manager or District Maintenance Office

Remember to follow the above GDOT protocols for reporting illicit discharges and spills.



# Reporting Spills

### **Reportable Spills:**

- Substance has reached stormwater system (inlet, ditch, pipe, etc.)
- 911 is called immediately to assist with spill response and any other necessary controls
- EPD must be notified within 15 minutes. Responsibility of reporting is the owner/controller of the spill. If responsibility party is no longer there, GDOT should report (1-800-241-4113)

### **Non-Reportable Spills:**

- Substance has NOT yet reached MS4 (inlet, ditch, pipe, etc.)
- Inform your assigned Project Manager or District Maintenance Office

It's not always GDOT's responsibility to clean up spills, but all spills on GDOT property or on GDOT projects should still be reported to the District Environmental Compliance Engineer. Report the following if known: quantity, substance, responsible party, whether or not it's been reported to another party. More information on IDDEs and Spills can be found in the IDDE Plan, Georgia Oil or Hazardous Materials Spills and Releases Reporting document, and in 40 C.F.R. Part 302 - Designation, Reportable Quantities and Notification.



# **Illicit Discharge Flow Types**

### **Non-Polluting:**

Discharges from sources which are not significant contributors of pollutants and/or pathogens



### **Polluting:**

Discharges from sources which are significant contributors of pollutants and/or pathogens and are not allowed under MS4 permit



# Illicit Discharge Flow Types



### Non-polluting:

- Tap water
- Landscape irrigation
- Groundwater
- Foundation drains
- Air-conditioning condensation

Example: District 7 had a water line that was flowing into an inlet in August of 2018.

**Groundwater:** occurs when the local water table rises above the bottom of the elevation of the storm drain and enters through cracks or joints in the MS4

Another example of a non-polluting flow would be a leaking fire hydrant.

Example: A waterline outside of the D7 Metro District Shop/Warehouse building began leaking, it flowed across the parking lot and into an inlet. A plumber was called immediately after observation and the water was turned off. This leak has since been remedied.



# Illicit Discharge Flow Types



### **Polluting:**

- Sewage and septage
- Commercial or fleet vehicle washing
- Shop floor drains connected to storm drainage system
- Laundry wastewater
- Liquid wastes

Example: District 1 Complex had a Septic Tank Overflow in September 2015

**Sewage and septage:** produced from sewer pipes and septic systems **Liquid Wastes:** examples include oil, paint, concrete washout, radiator flushing water, and liquids from leaking dumpsters

**PHOTO:** depicts restaurant wash water and litter draining into a storm drain

Another example of a potential polluting flow is vehicle wash water. Know where shop floor and wash bays drain.

\*Photo from

http://www.wilmingtonnc.gov/public services/stormwater/report stormwater pollution



### **Directly:**

GDQT

- Sewage cross-connections
- Industrial and commercial cross-connections
- Discharge into open channel or stream





**Sewage cross-connections:** sewer pipe that is connected to the storm drain system that produces a continuous discharge of raw sewage into the storm drain pipe **Straight pipe:** relatively small diameter pipes that intentionally bypass the sanitary connection or septic drain fields, producing a direct discharge into open channels or streams

**Industrial and commercial cross-connections:** drain pipes that are connected to the storm drain system producing a discharge of wash water, process water or other inappropriate flows into the storm drain pipe

**TOP PHOTO:** Sewage cross-connection

**BOTTOM PHOTO:** Straight pipe discharging into open an stream

\*Photos both from Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments by the Center for Watershed Protection and Robert Pitt



## How do illicit discharges enter an MS4?





### Indirectly:

- Groundwater seepage
- Dumping non-stormwater into a storm drain
- Outdoor washing
- Non-target irrigation

**Groundwater seepage:** seepage can occur after long periods of above average rainfall which causes the water table to rise and leak into cracks and joints in MS4s

**Spills:** usually accidental and often occurs at commercial and transport-related sites

**Dumping a liquid:** liquid wastes such as oil, grease, paint, solvents, and various automotive fluids are dumped into a storm drain

**Outdoor washing:** routine washing of fueling areas, outdoor storage areas, parking lots, and construction equipment cleanouts

**Non-target irrigation:** overwatering or misdirected sprinklers that send tap water over impervious areas or produce unacceptable loads for nutrients, organic matter, or pesticides

**TOP PHOTO:** Water from flowing into storm drain from power-washing the pavement outside a store.

**BOTTOM PHOTO:** Truck hauling a chemical tipped



# Why is it important to eliminate illicit discharges?

Illicit discharges can degrade water quality and threaten aquatic vegetation, wildlife, and human health



Illicit discharges may release heavy metals, toxins, oil and grease, solvents, nutrients, viruses, and bacteria.

\*Photos from U.S. Fish and Wildlife Service National Digital Library

# GDQT Possible Sources of Illicit Discharges

- Cross connection (connection with sanitary sewer or another waste line, e.g. car wash)
- Illegal dumping (e.g. paint poured in storm drain)
- Others



# When & where could I witness an illicit discharge?

- Mowing and clearing activities
- Road maintenance
- Construction sites
- Roadway litter pickup
- Street cleaning
- Facility maintenance
- Maintenance of stormwater facilities

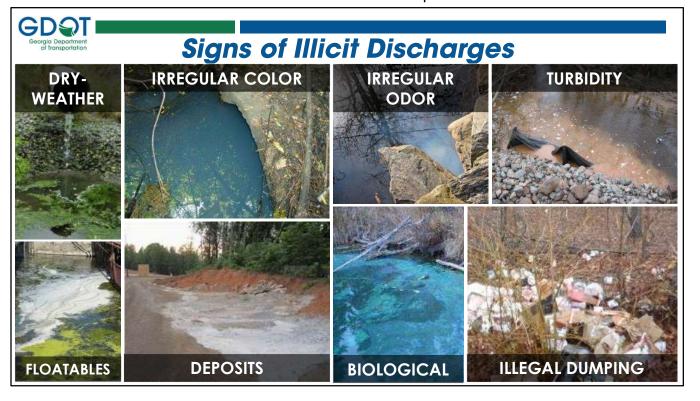






You can witness an illicit discharge outside of work too. GDOT employees naturally pay more attention to what's along the ROW and the condition of roads.

\*Photo from http://www.flickr.com/photos/modot/6100136478/





# Signs of Illicit Discharge

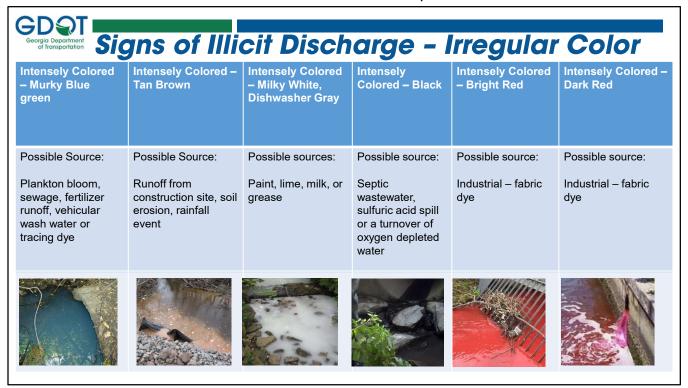
### **Dry-Weather Flow:**

Flow from an outlet during dry conditions



**Dry-weather flow conditions:** having rainfall of less than 0.1 inches per day over the preceding 72 hours

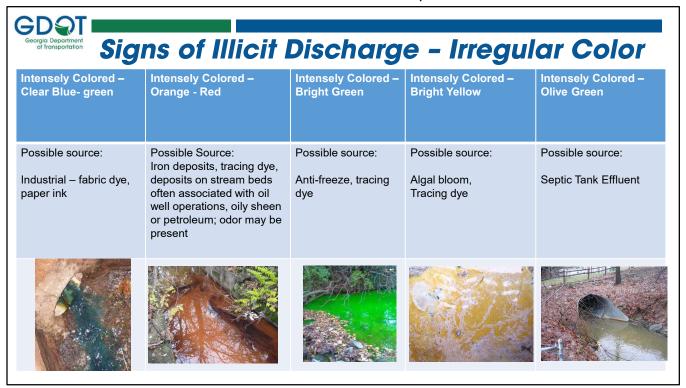
\*Photo from http://www.flickriver.com/photos/wonderlane/3667996094/



**PHOTOS:** Both pictures show bodies of water that are displaying irregular coloration. The water shown in the left photo is a white, milky color while the water in the right photo is clearly blue.

<sup>\*</sup>Photo on left from http://www.geograph.org.uk/photo/729705 geograph.org.uk

<sup>\*</sup>Photo on right from http://www.lcghd.org/storm water.aspx



**PHOTOS:** Both pictures show bodies of water that are displaying irregular coloration. The water shown in the left photo is a white, milky color while the water in the right photo is clearly blue.

<sup>\*</sup>Photo on left from http://www.geograph.org.uk/photo/729705 geograph.org.uk

<sup>\*</sup>Photo on right from http://www.lcghd.org/storm water.aspx



**PHOTO:** This milky white liquid is cleaner coming from a nearby plant which has a sewer drain illegally connected to a MS4. The liquid was described as having a strong chemical/cleaner odor.



# Signs of Illicit Discharge

### **Odor Indicators**

Odor	Possible Sources
Musty	Raw or partially treated sewage, livestock waste, algae
Rotten egg/Hydrogen Sulfide	Raw sewage, sulfuric acid, anaerobic water
Sewage/fecal	Raw sewage
Chlorine	Broken drinking water line, sprinkler runoff, swimming pool backwash water, wastewater treatment plant discharge, industrial discharges
Sharp, pungent odor	Chemicals or pesticides
Gasoline, spent petroleum	Industrial discharge, illegal dumping of wastes or waste water

<sup>\*</sup>Table from "A Guidance Manual for Identifying and Eliminating Illicit Connections to Municipal Separate Storm Sewer Systems (MS4)" prepared by Galveston County Health District Pollution Control Division



Suspended particles can be clay, silt, finely divided organic and inorganic matter, plankton and microscopic organisms. Turbidity is generally associated with construction activities and erosion.

\*Photo from http://en.m.wikipedia.org/wiki/File:Petitcodiac-water-pollution.jpg



Oil will form a rainbow colored film on top of the water. Some bacteria may form a similar looking film; but if the surface of the water is agitated and the film quickly reforms, it is oil.

<sup>\*</sup>Photo on left from Diana Handy/Arlington County Government (http://environment.arlingtonva.us/streams/report-stream-pollution/)



Deposits may occur in the form of oily/greasy patches, colored deposits, or a silt or powder layer.

PHOTO: Deposit from concrete truck washout which is characterized by a gray-white color

<sup>\*</sup>Photo on right from http://www.tnepsc.org/page.asp?ID=15

<sup>\*</sup>Photo on left from www.thames21.org.uk/2013/04/soap-suds-and-sewage-fungus-somewater-cannot-be-cleaned-by-suds-alone/







Sediment deposits may be due to construction activities or erosion.

\*Photo on left from http://rainwaterharvesting.tamu.edu/stormwater-management/



## Signs of Illicit Discharge

Biological Indicators: Living organisms that may be affected by discharges





**PHOTO:** Large blue-green algae blooms due accelerated by phosphorus in fertilizer runoff can pose a serious health risk to people and animals. "Symptoms can include nausea, vomiting, diarrhea, skin or throat irritation, allergic reactions or breathing difficulties. Bluegreen algae can also produce toxins that affect the liver and nervous systems when water is consumed in sufficient quantities," (http://inhabitat.com/nyc/dog-killing-blue-green-algae-bacteria-found-in-parts-of-long-island/)



Increased or inhibited plant growth, as well as dead and decaying plants, near stormwater outfalls is often a sign of pollution. Seasonal and recent weather conditions should be considered to accurately determine if the vegetation near an outfall is normal or abnormal.

\*Photo from http://farm5.staticflickr.com/4036/4464985676 d3f0faa183.jpg



# Signs of Illicit Discharge

Illegal Dumping: Solid or liquid trash illegally dumped





Illegal dumping is one source of illicit discharge. When liquid wastes such as oil, paint, and household chemicals inside discarded containers or on debris come into contact with rainwater, the runoff transports these pollutants to state waters. Illegal dumping can also lead to trash and unwanted debris in our state waters.

**PHOTO:** Pile of illegally dumped paint and paint supplies.

\*Photo from Arcadis





Report suspected illicit discharges within 24 hours; report spills immediately!

All reports must be documented, consider:

- What did you see and how much?
- Color, sediment, algae, estimated amount, etc.
- Where did you see it?
- What mile marker/address? Which side of the road?
- Are there any landmarks nearby?
- When did you see it?
- What day did you see it? Has it rained in the last 3 days?





Reporting must be done within 24 hours so be sure to document the details.

We'll show you the link from the website to the form on the next slide.



### Reporting Suspected Illicit Discharges

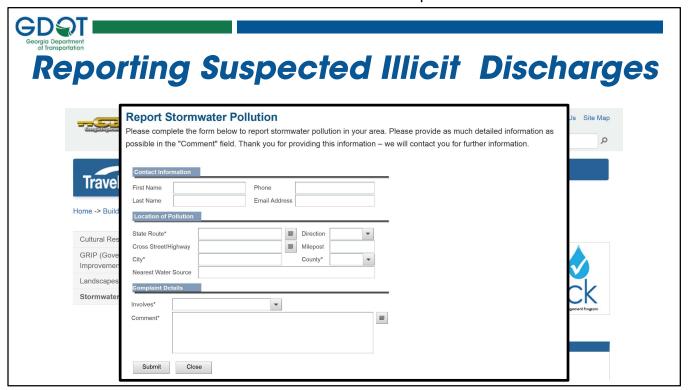
### The public can report illicit discharges 2 ways:

- 1. Online in GDOT's Stormwater website
- 2. Email or call your assigned Project Manager or District Maintenance Office



Be sure to recognize the difference between illicit discharges and a spills. If a hazardous situation is observed, contact emergency services.

The Project Manager or District Maintenance Office is the District level contact for MS4 items. A GDOT employee that observes – or is notified - an illicit discharge can call the Project Manager or file a notification using the website. The notification is then logged and processed using GDOT's REMEDY software. Upon the notification being logged, an automatically generated email notification will be forwarded to the designated GDOT personnel for follow-up actions. The email will include a tracking number to access the complaint.



Scroll to the bottom of the Stormwater Pollution Prevention page to find the form.



Enter your full first and last name along with your phone number and GDOT employee email address.



**State Route:** List the road you were on or near when you witnessed the suspected illicit discharge

**Direction:** Use the pull-down tab to select the direction the discharge is from the road **Cross Street/Highway:** List the nearest cross road in order to help pinpoint the suspected illicit discharge location

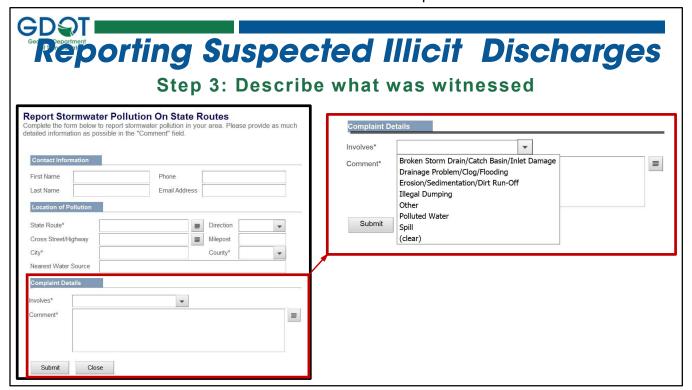
**Milepost:** write in nearest milepost number (if any)

City: List the nearest town or city

**County:** Use the pull-down tab to select the county

**Nearest Water Source:** Write in the nearest known stream, river, lake, etc.

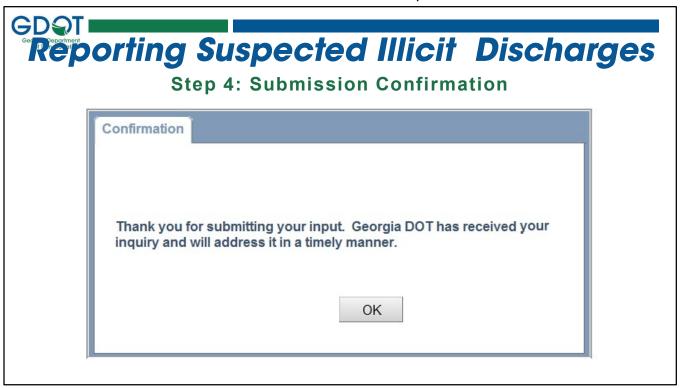
While only the items that have an asterisk are required; however, it is important to complete the form as thoroughly as possible in order for the suspected illicit discharge to be located quickly.



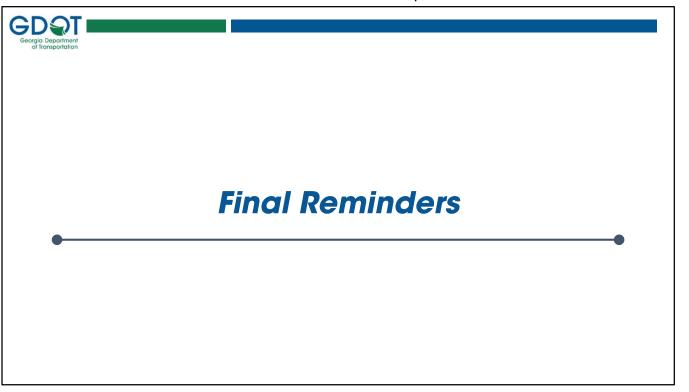
**Involves:** To the best of your knowledge, choose what you believe to be the source of the pollution from the pull-down list.

**Comment:** Describe the signs of illicit discharge you saw, including any combination dryflow, color, odor, turbidity, presence of floatables, deposits, and biological indicators. Include everything you observed in this box. Also include more information about the location of the suspected illicit discharge. For example, list a nearby landmarks or home addresses.

Once the form is completely filled out, select "Submit"



After selecting submit, this message will appear to confirm that you have successfully submitted your report. Shortly thereafter, you will receive a carbon copy of the email sent to the selected GDOT personnel that alerts them to the issue



In closing, we have a few final reminders



### Maintenance Service Contracts

### **MS4** Reporting

- 1. Know your MS4 eligible activities
- 2. Maintain records digitally (GDOT EXCEL forms)
- 3. Submit reports concurrent with each invoice for work performed (but quarterly as a minimum).

All Maintenance contractors should be familiar with the MS4 requirements in your contract and know which contract activities have associated tracking requirements.

All contracts have reporting requirements. All reporting must be submitted in digital (EXCEL) format, and should be submitted concurrently invoicing. Reporting should be no less than quarterly/

All suspected illicit discharges should always be reported to your Project Manager or District Maintenance office immediately.



### Maintenance Service Contracts

### **MS4** Reporting

- 4. Submit reports to Assistant District Maintenance Manager-Assets and Environmental Compliance Specialist for the information to be entered into Georgia Asset Management System (GAMS).
- 5. All costs associated with elements of work necessary to perform these MS4 Permit Requirements shall be considered incidental and included in the overall bid submitted.

All suspected illicit discharges should be reported to your assigned Project Manager or District Maintenance office immediately.

All digital data shall be submitted electronically, on GDOT spreadsheets, at least a quarterly along with the first invoice after quarter's end. Reports should be submitted with the first invoice to the Assistant District Maintenance Manager – Assets and Environmental Compliance Specialist for the information to be entered in GAMS. If a suspected illicit discharge is identified, it should be reported to your Project Manager or District Maintenance office immediately.

And finally, all costs associated with elements of work necessary to perform these MS4 Permit Requirements shall be considered incidental and included in the overall bid submitted.



### **QUESTIONS?**



# If you have any questions, contact your Project Manger!

We thank you for working with Georgia DOT in our effort to keep Georgia Beautiful. If you have any questions about the MS4 requirements in your contract, please contact Brad McManus, GDOT's MS4 Program Manager.