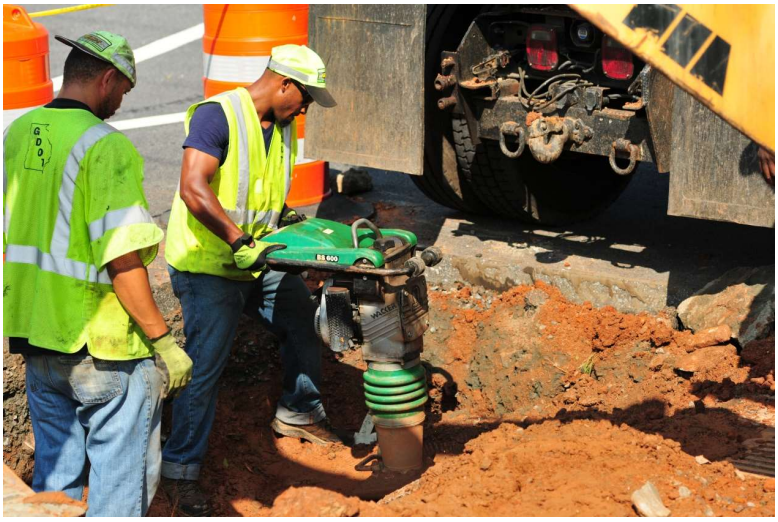
GDOT Georgia Department of Transportation

Maintenance Services Contractor Training

Comprehensive Maintenance Contracts (CMC)



rain check
Georgia DOT's Stormwater Management Program

GDOT MS4 PROGRAM CONTACTS

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.

Georgia Department of Transportation

GDOT MAINTENANCE SERVICE CONTRACTOR MS4 TRAINING DATE: _____

CONTRACT: _____ DISTRICT(S): _____

CONTRACTOR: _____ ADDRESS/LOCATION: _____

NOTE: The GDOT Maintenance Service Contractor Training module 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 module with those employees, record their participation and understanding, and submit this record of training to the respective GDOT Project Engineer/Maintenance Contracts Manager for subsequent inclusion into the GDOT MS4 Permit Annual Report.

For any questions related to this training, please contact any one of those identified on Slide 2 of the module.

ATTENDEES (Please print clearly)

NAME	ORGANIZATION (COMPANY OR GDOT)	TITLE/POSITION	TELEPHONE NO.	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.

General MS4 Information

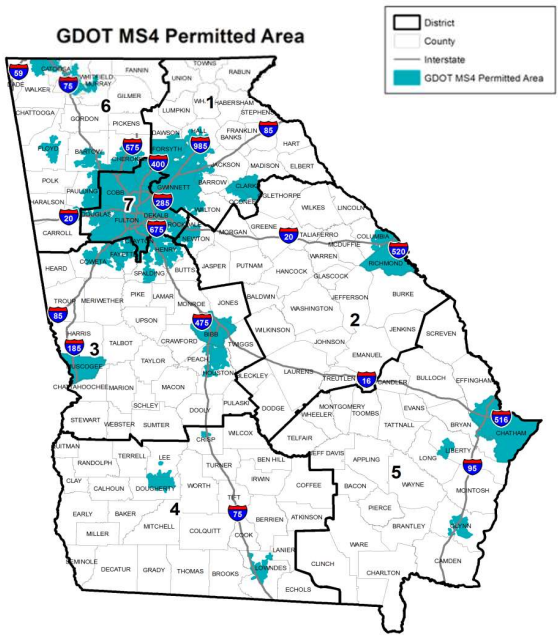
Add General Permit introduction….

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

GDOT
Georgia Department of Transportation

GDOT's MS4 Permit

GDOT's MS4 Requirements apply in areas designated by EPD as MS4.



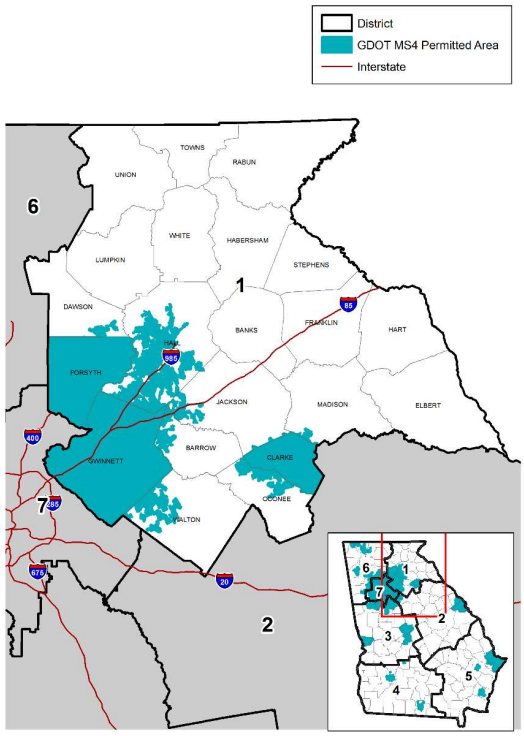
This permit identifies certain urbanized areas across the state where the MS4 permit is effective. If your maintenance contract has you performing work in one of these cities or counties, there are certain activities that you perform, as part of your contract, they have to be tracked and reported back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

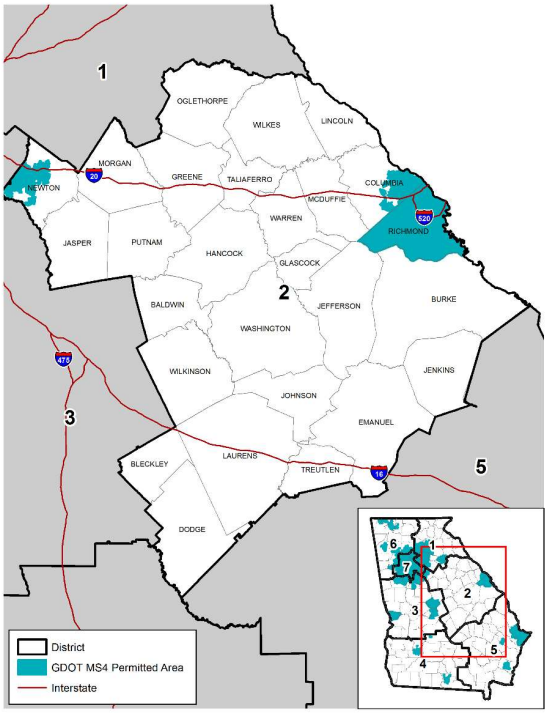
GDOT Georgia Department of Transportation

District 1



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



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

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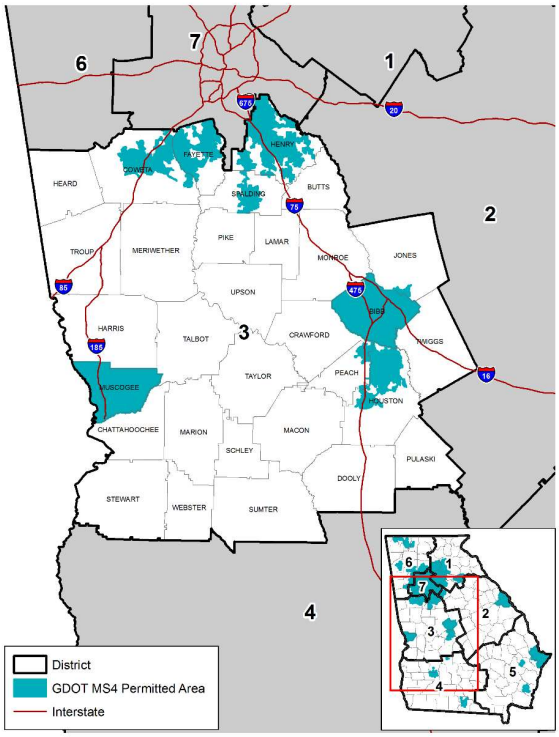
District 3



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

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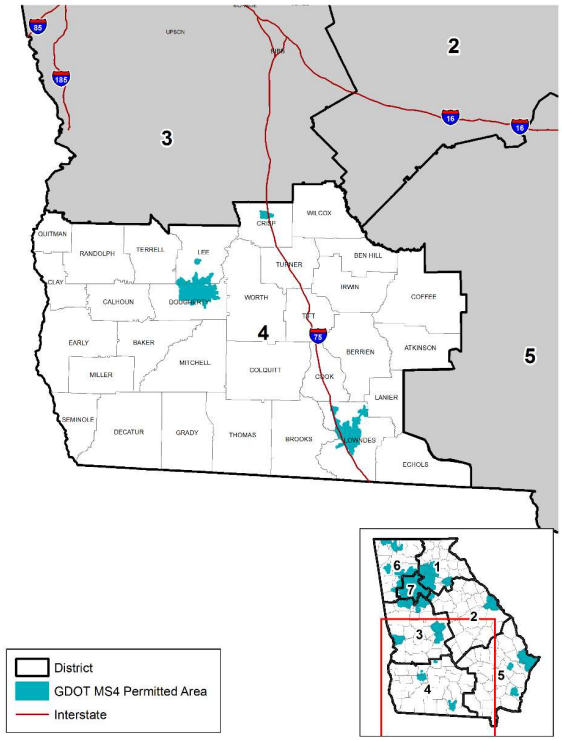
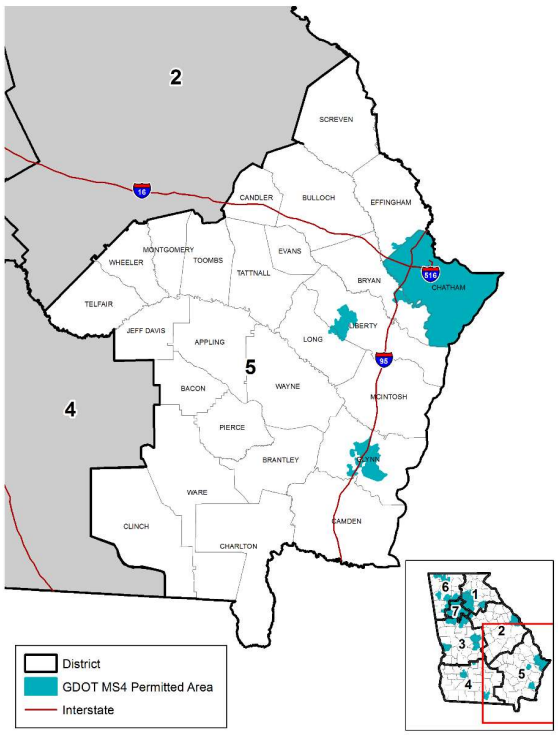
District 4



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

GDOT Georgia Department of Transportation

District 5



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

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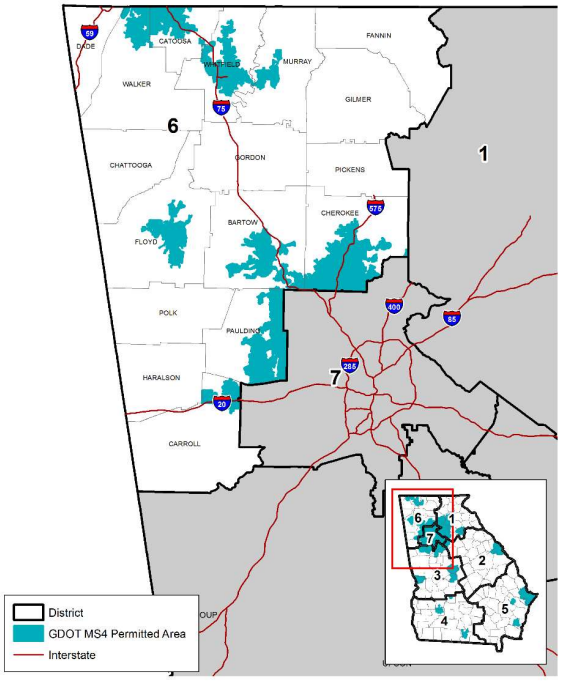
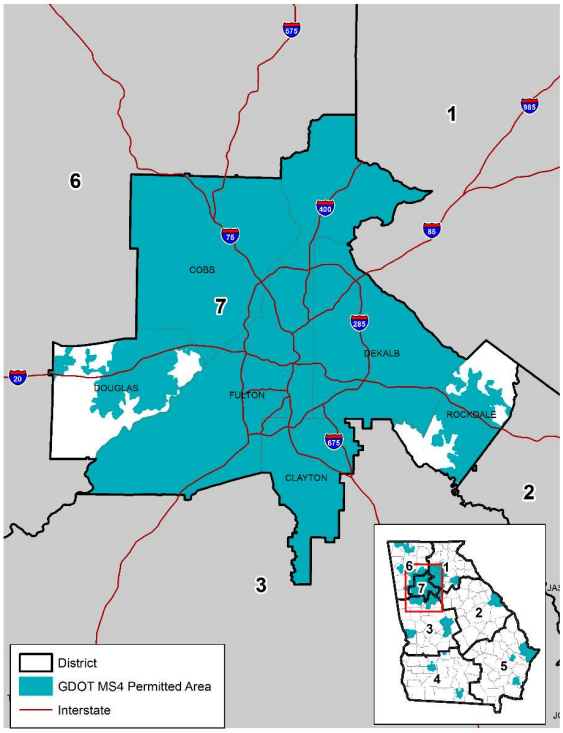
District 6

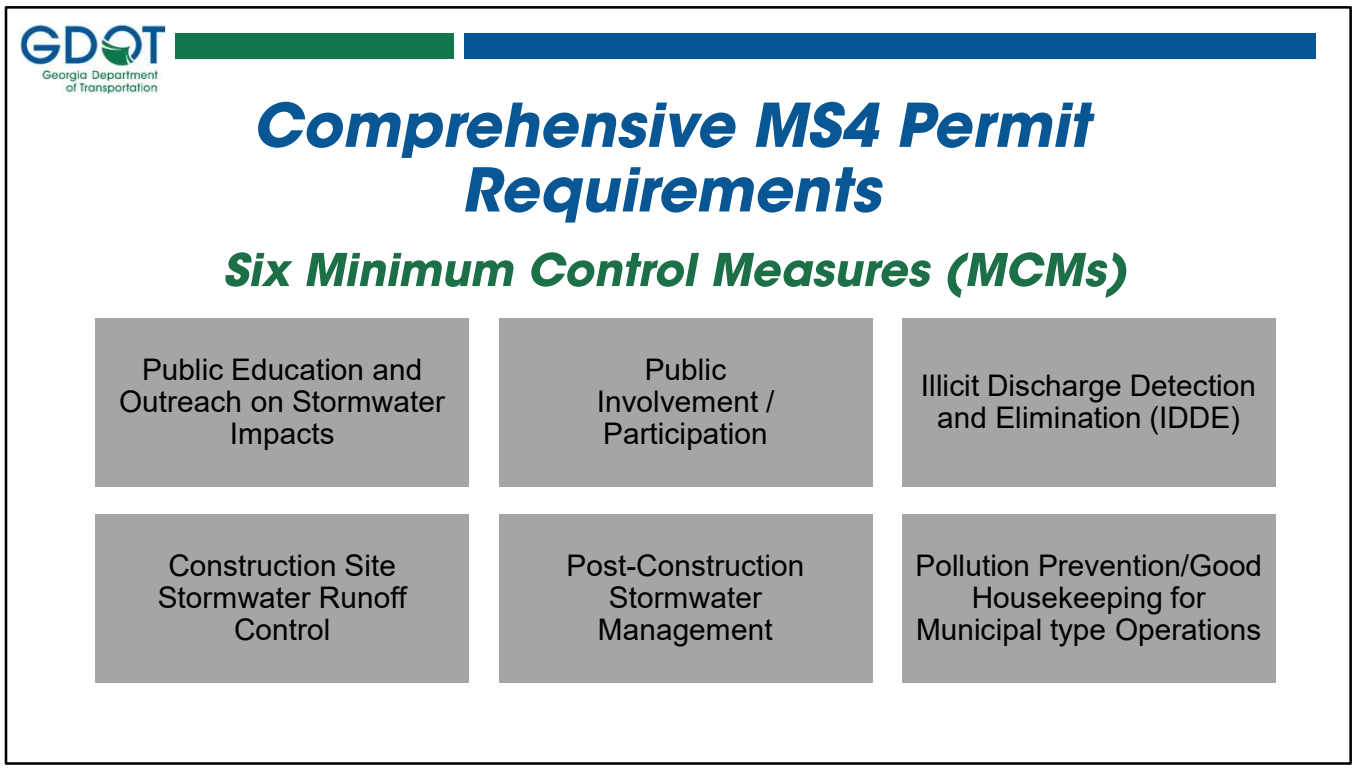


District 6 MS4 areas include portions of Walker, Catoosa, Whitfield, Murray, Floyd, Bartow, Cherokee, Paulding, and Carroll Counties.

District 7



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



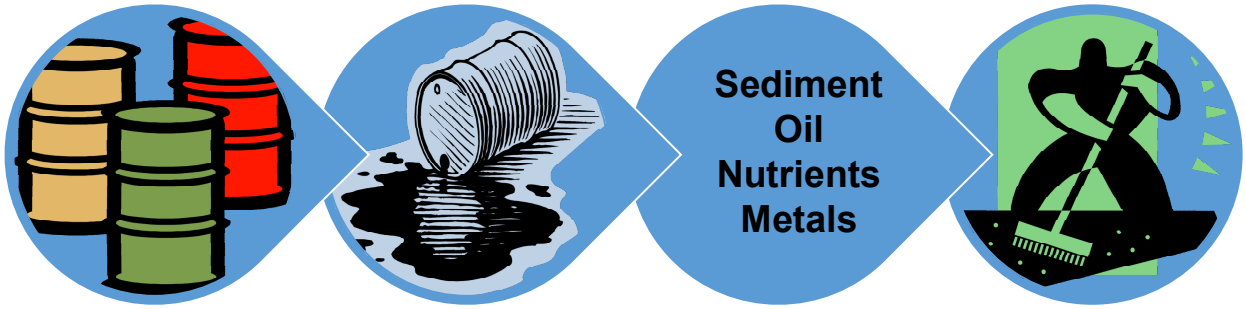
GDOT's MS4 permit requires GDOT to comply with a number of requirements or Best Management Practices (BMPs). These include

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.
5. 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.

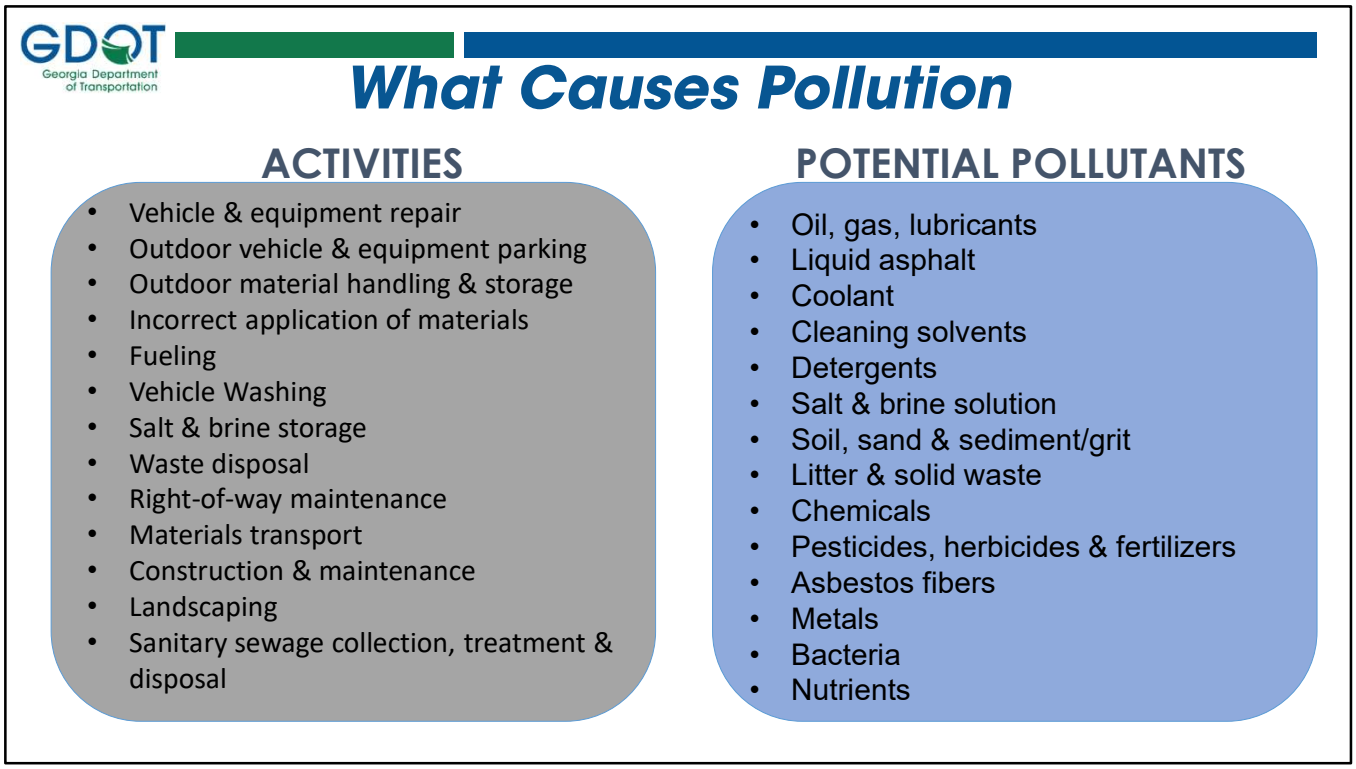
Pollution Sources and Controls

Your work activities, or actions by others, can contribute pollutants to stormwater runoff unless controls are in place.



Activity | Pollutant Source | Potential Pollutants | Best Management Practices (BMPs)

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.



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.

Comprehensive Maintenance Contracts (CMC)

GDOT Georgia Department of Transportation

CMC

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

- Slope Repair
- Shoulder Building/Repair
- Manual Clean Drain Structure
- Mechanical Clean Drain Structure
- Clean/Restore Ditches
- Pipe Install/Repair
- Build/Repair Concrete Structure

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

These MS4 activities include:

- Slope Repair
- Shoulder Building and Repair
- Manual and Mechanical Cleaning of Drainage Structures
- Cleaning and Restoring Ditches
- Pipe Installation and Repair
- Building and Repair of Concrete Structures

GDOT Georgia Department of Transportation

CMC

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

- Litter Pickup/Full
- Machine Sweeping
- Building/Grounds Repairs
- Culvert Repair

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

These MS4 activities also include:

- Litter Patrol and Pickup
- Machine Sweeping
- Building/Grounds Repairs and
- Culvert Repair
- Stormwater Management
- Debris and Roadkill Removal
- Incident Response (if spills are involved)

GDOT Georgia Department of Transportation

CMC

MS4 Requirements

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

- Coordinates of activity and unit complete by activity by using the MS4 Activity Report Spreadsheet provided
- All suspected illicit discharges should be reported to your assigned Project Manager or District Maintenance office immediately.

As a CMC Contractor, you shall perform all drainage asset installation, repairs, and/or replacement operations and use the MS4 Activity Report Spreadsheet to document work.

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

GDOT Georgia Department of Transportation

CMC

MS4 Reporting

MS4 Activity Report

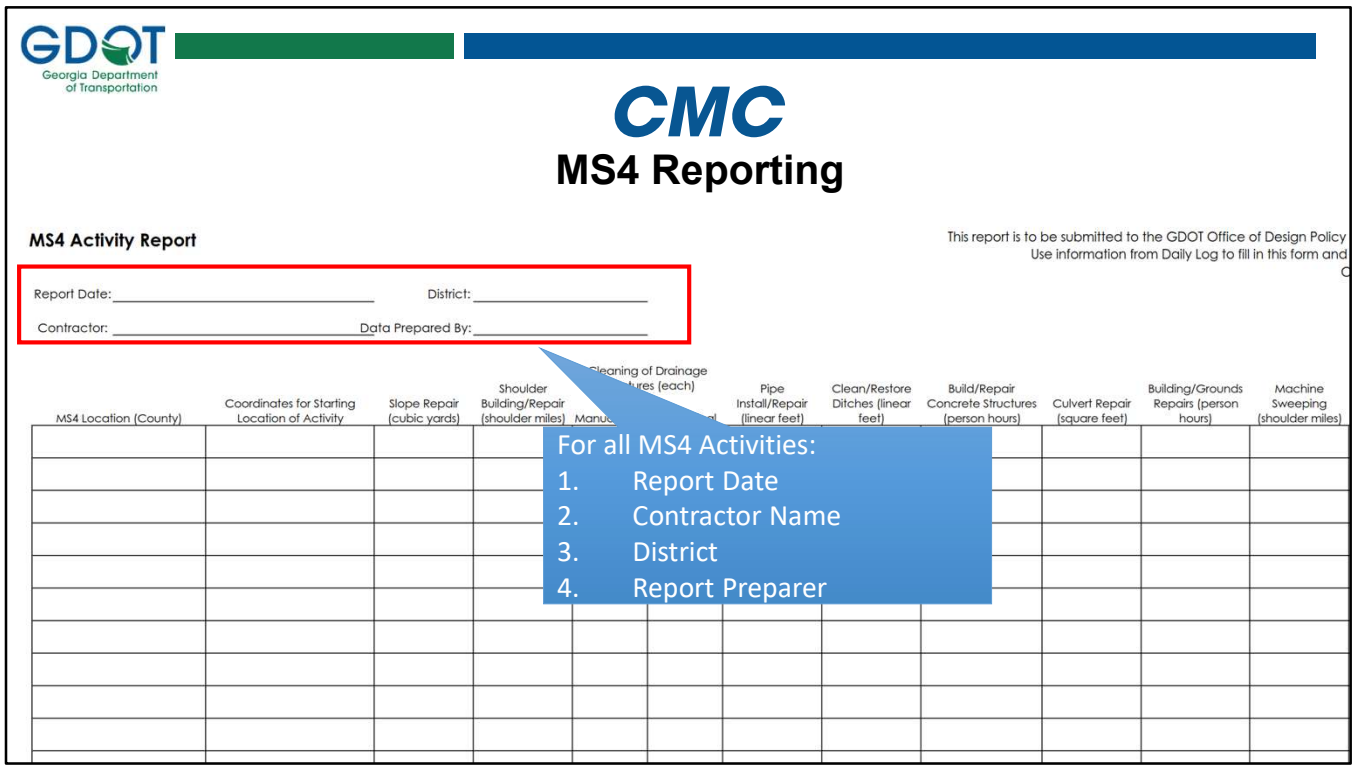
This report is to be submitted to the GDOT Office of Design Policy and Support on a quarterly basis
Use information from Daily Log to fill in this form and send to stormwater@dot.ga.gov
Copy the District Project Manager

Report Date: _____ District: _____

Contractor: _____ Data Prepared By: _____

MS4 Location (County)	Coordinates for Starting Location of Activity	Slope Repair (cubic yards)	Shoulder Building/Repair (shoulder miles)	Cleaning of Drainage Structures (each)		Pipe Install/Repair (linear feet)	Clean/Restore Ditches (linear feet)	Build/Repair Concrete Structures (person hours)	Culvert Repair (square feet)	Building/Grounds Repairs (person hours)	Machine Sweeping (shoulder miles)	Litter Pickup (shoulder miles)	Additional Notes
				Manual	Mechanical								

All work performed related to MS4 activities is required to be documented in excel format as specified in your contract. The 8085-2 GP Data Collection Policy applies to all CMC contracts.



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.

GDOT Georgia Department of Transportation

CMC
MS4 Reporting

MS4 Activity Report

This report is to be submitted to the GDOT Office of Design Policy
Use information from Daily Log to fill in this form and
C

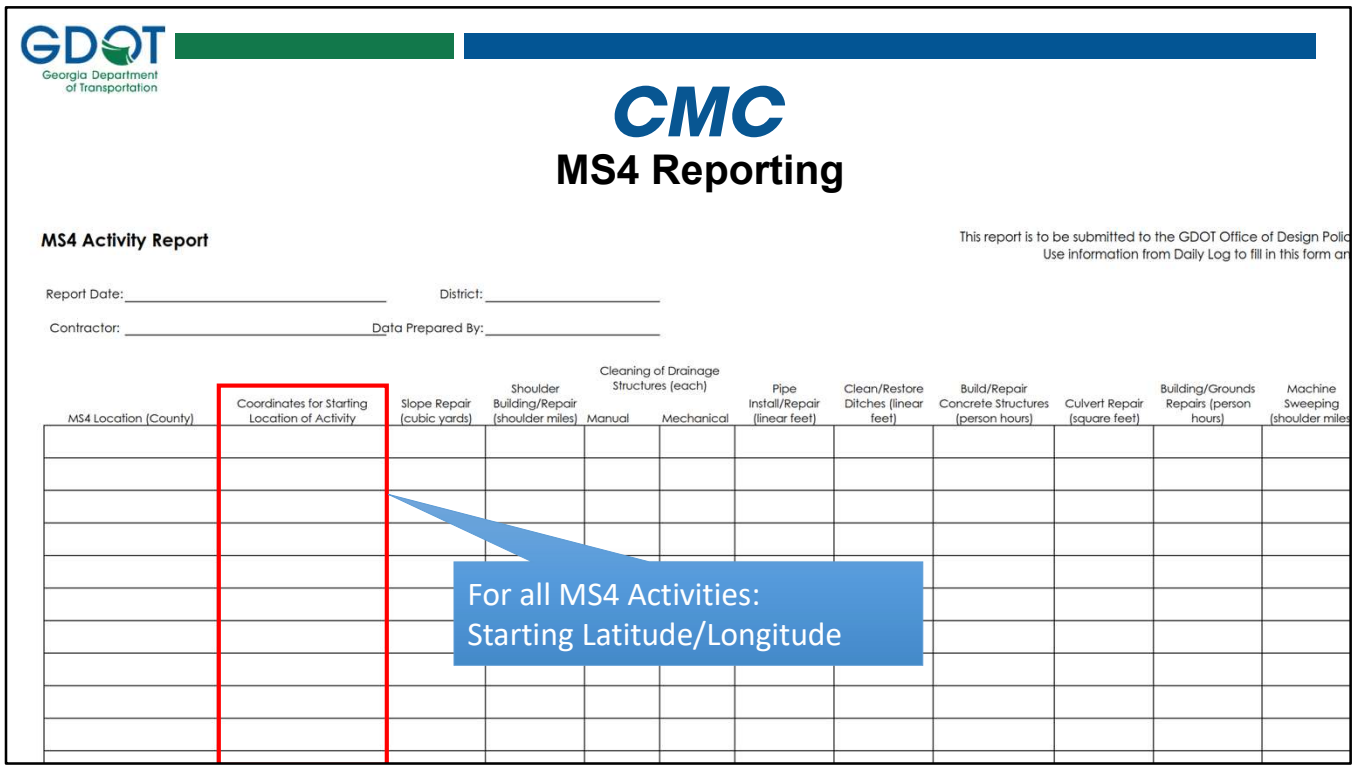
Report Date: _____ District: _____

Contractor: _____ Data Prepared By: _____

MS4 Location (County)	Coordinates for Starting Location of Activity	Slope Repair (cubic yards)	Shoulder Building/Repair (shoulder miles)	Cleaning of Drainage Structures (each)		Pipe Install/Repair (linear feet)	Clean/Restore Ditches (linear feet)	Build/Repair Concrete Structures (person hours)	Culvert Repair (square feet)	Building/Grounds Repairs (person hours)	Machine Sweeping (shoulder miles)
				Manual	Mechanical						

For all MS4 Activities:
1. City/County
2. Road Name
3. Mile Markers

Your report form should note the MS4 City or County, Road name and Mile markers where drainage asset installation, repair, and replacement operations were performed.



GPS coordinates of all drainage asset installation, repair, and replacement operations should be reported as latitude and longitude.

GDOT Georgia Department of Transportation

CMC
MS4 Reporting

MS4 Activity Report

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Use information from Daily Log to fill in this form and
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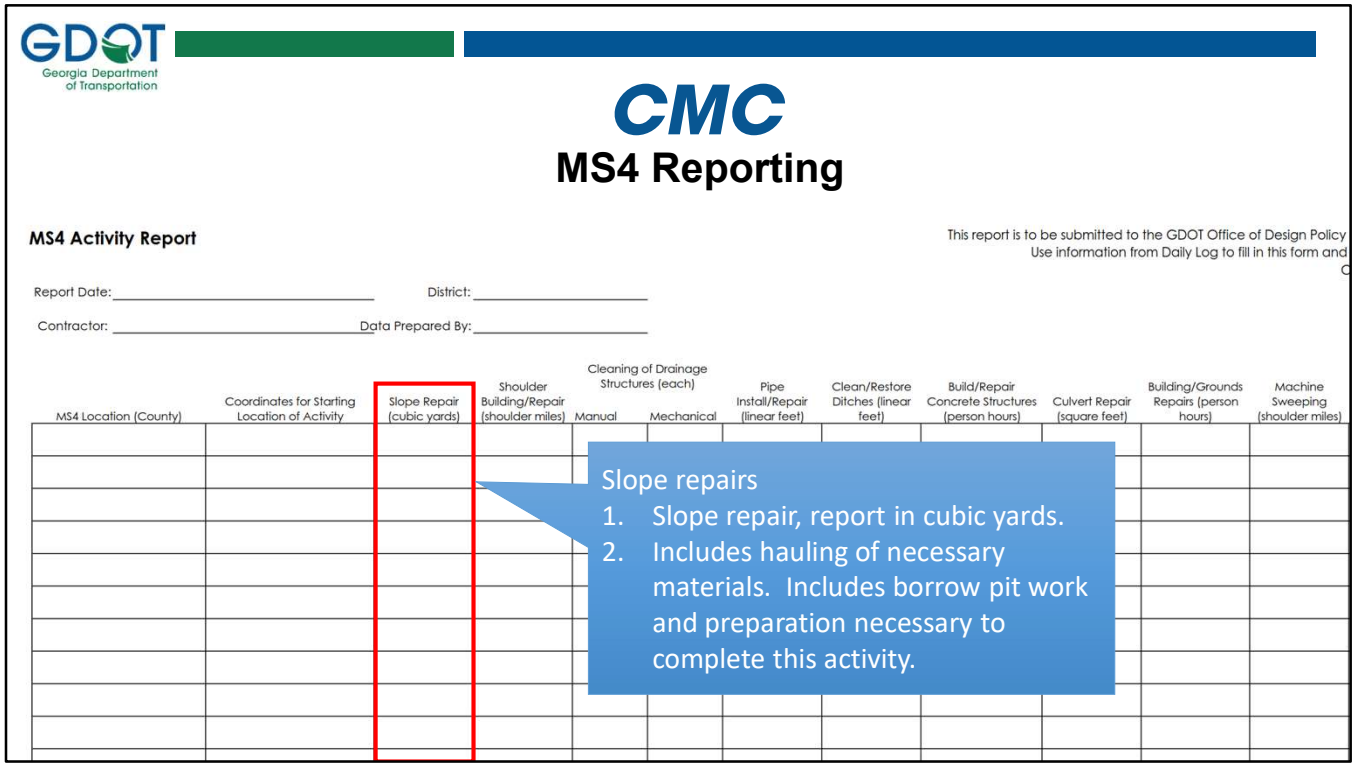
Report Date: _____ District: _____

Contractor: _____ Data Prepared By: _____

MS4 Location (County)	Coordinates for Starting Location of Activity	Slope Repair (cubic yards)	Shoulder Building/Repair (shoulder miles)	Cleaning of Drainage Structures (each)		Pipe Install/Repair (linear feet)	Clean/Restore Ditches (linear feet)	Build/Repair Concrete Structures (person hours)	Culvert Repair (square feet)	Building/Grounds Repairs (person hours)	Machine Sweeping (shoulder miles)
				Manual	Mechanical						

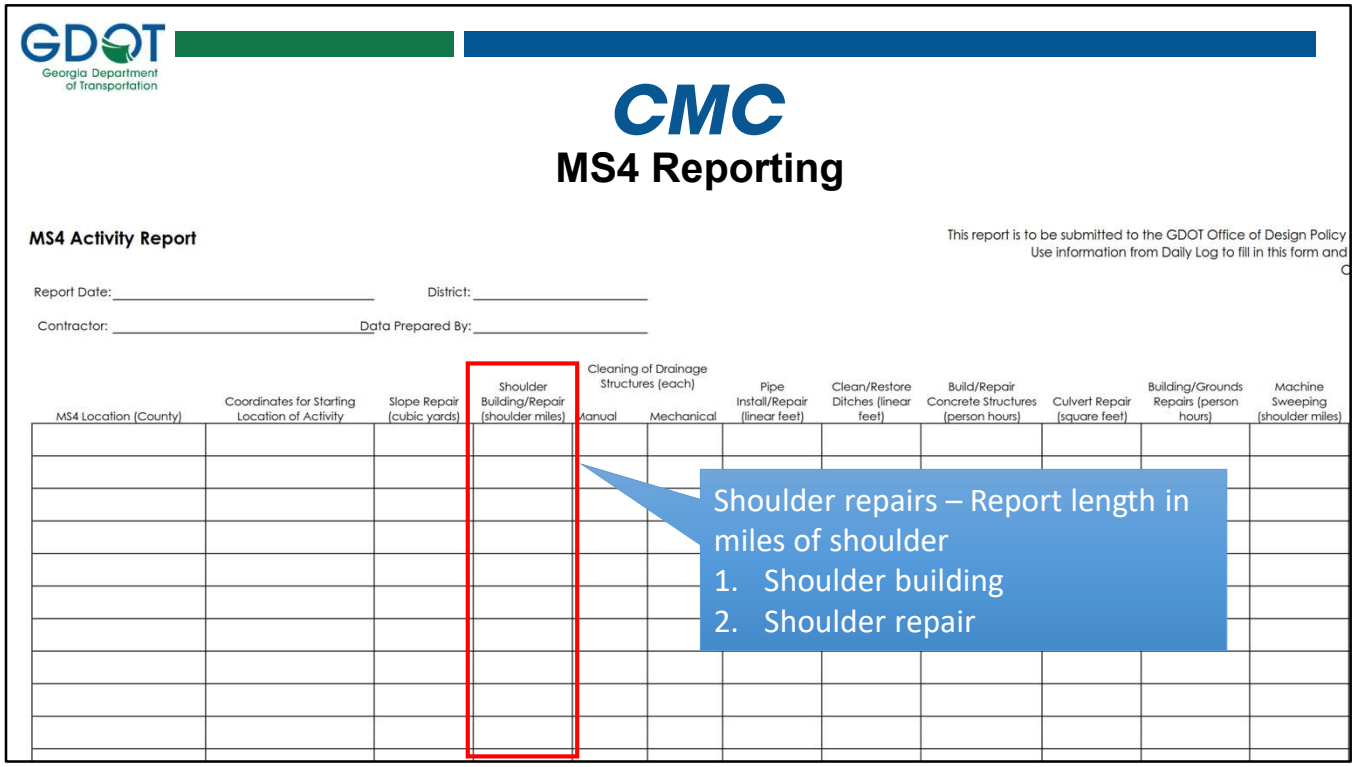
- Note location of drainage structure and pipe/ditch/swale/channel limits

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

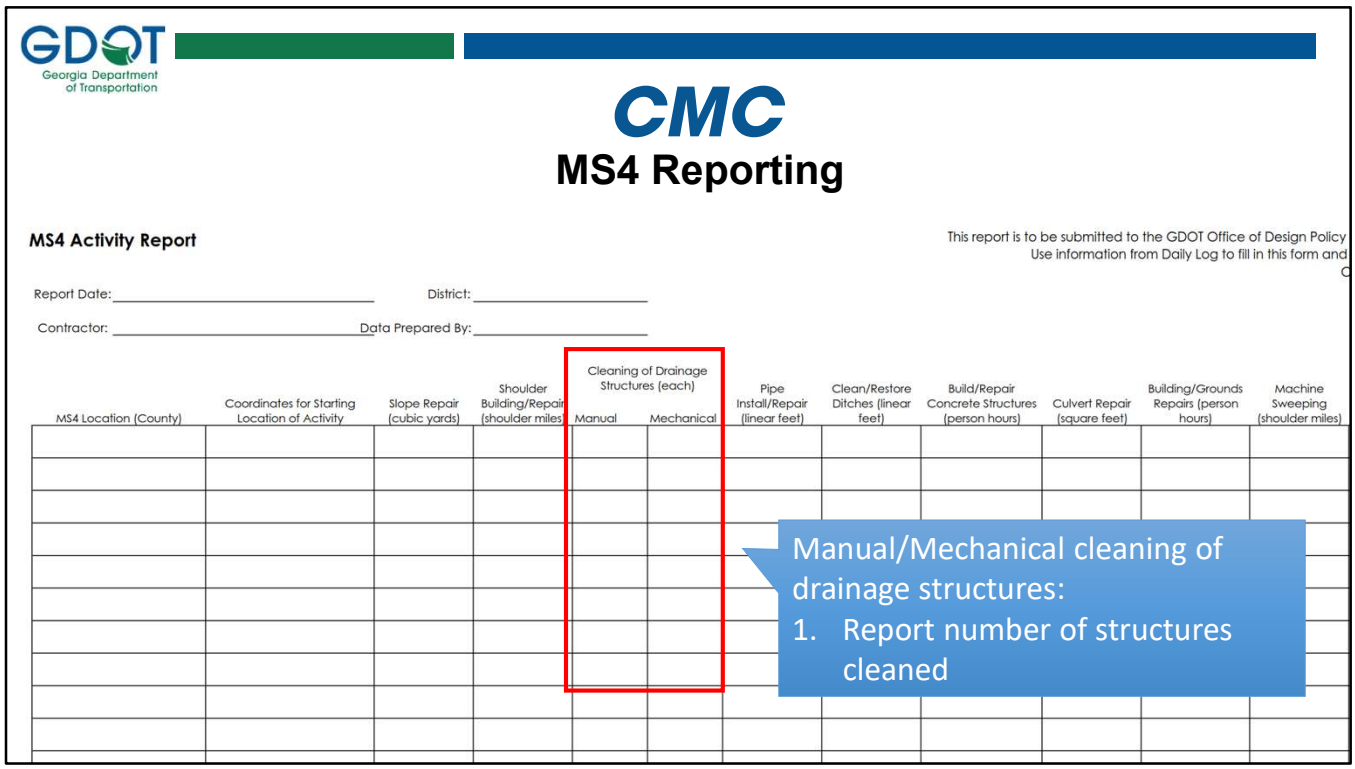


When slope repairs are performed, the volume of the repair should be reported in cubic yards.

The pay item for slope repair includes any hauling of necessary materials and borrow pit work and preparation necessary to complete the activity.



When shoulder building or shoulder repairs are performed the length of the work should be reported in shoulder miles.



GDOT Georgia Department of Transportation

CMC

MS4 Reporting

MS4 Activity Report

This report is to be submitted to the GDOT Office of Design Policy
Use information from Daily Log to fill in this form and

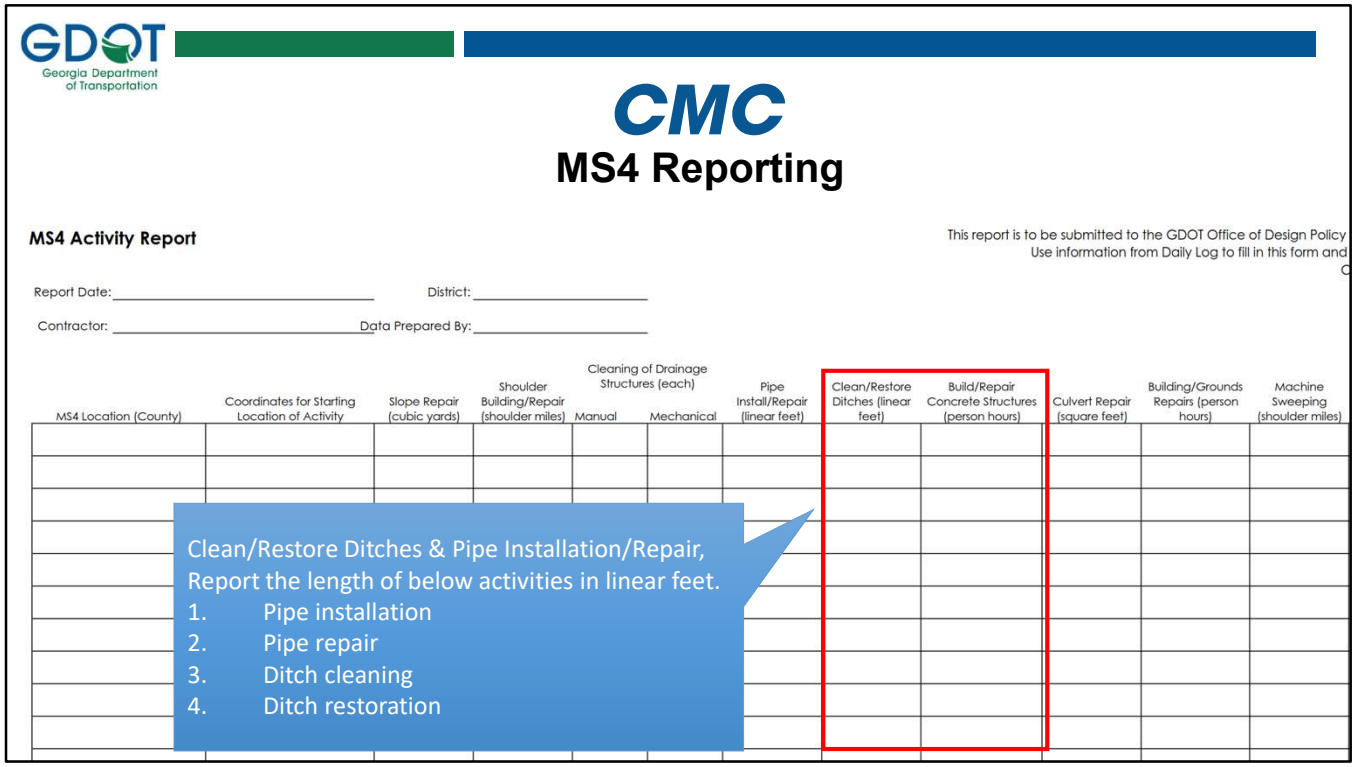
Report Date: _____ District: _____

Contractor: _____ Data Prepared By: _____

MS4 Location (County)	Coordinates for Starting Location of Activity	Slope Repair (cubic yards)	Shoulder Building/Repair (shoulder miles)	Cleaning of Drainage Structures (each)		Pipe Install/Repair (linear feet)	Clean/Restore Ditches (linear feet)	Build/Repair Concrete Structures (person hours)	Culvert Repair (square feet)	Building/Grounds Repairs (person hours)	Machine Sweeping (shoulder miles)
				Manual	Mechanical						

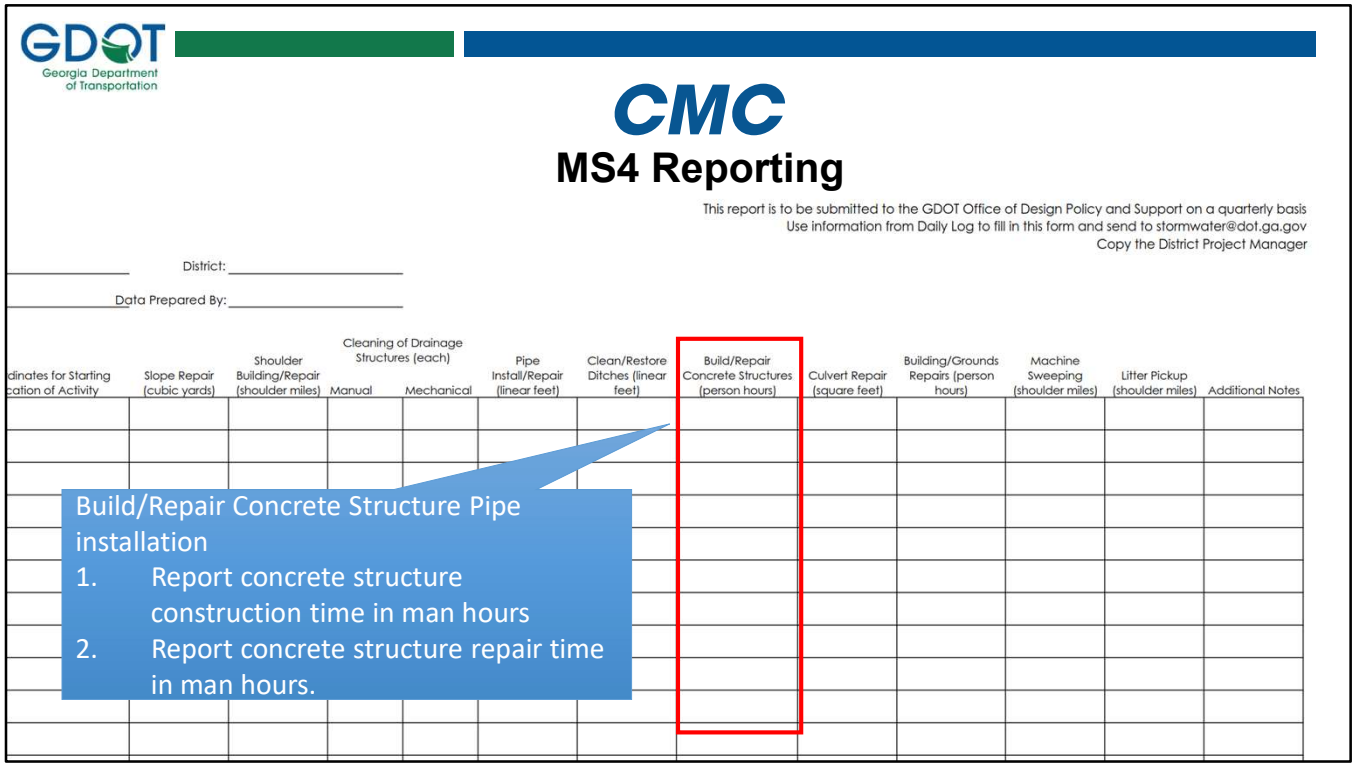
Manual/Mechanical cleaning of drainage structures:
1. Report number of structures cleaned

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.

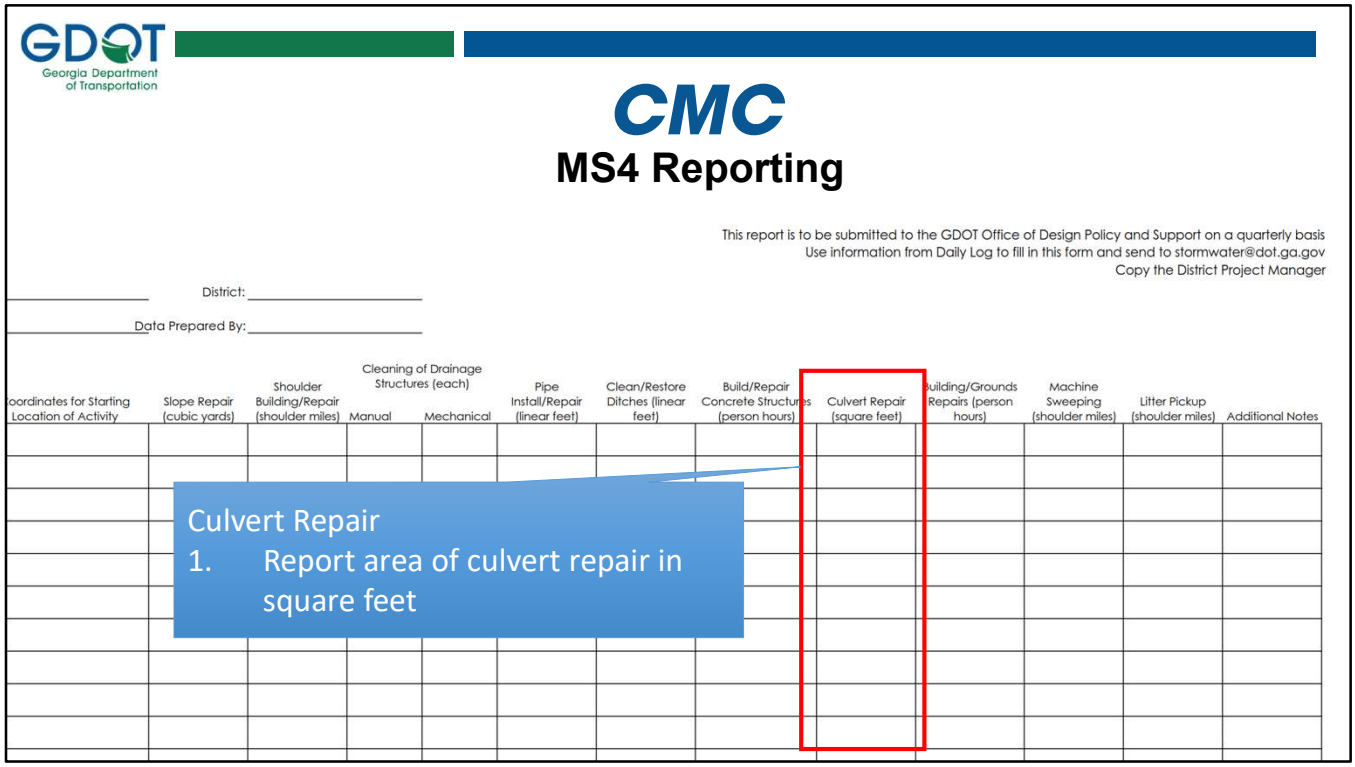


When ditches are cleaned or restored, the length of the restoration should be reported in linear feet.

Similarly, when pipes are installed or repaired, the length pipe should be reported in linear feet.



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.



GDOT Georgia Department of Transportation

CMC
MS4 Reporting

This report is to be submitted to the GDOT Office of Design Policy and Support on a quarterly basis
Use information from Daily Log to fill in this form and send to stormwater@dot.ga.gov
Copy the District Project Manager

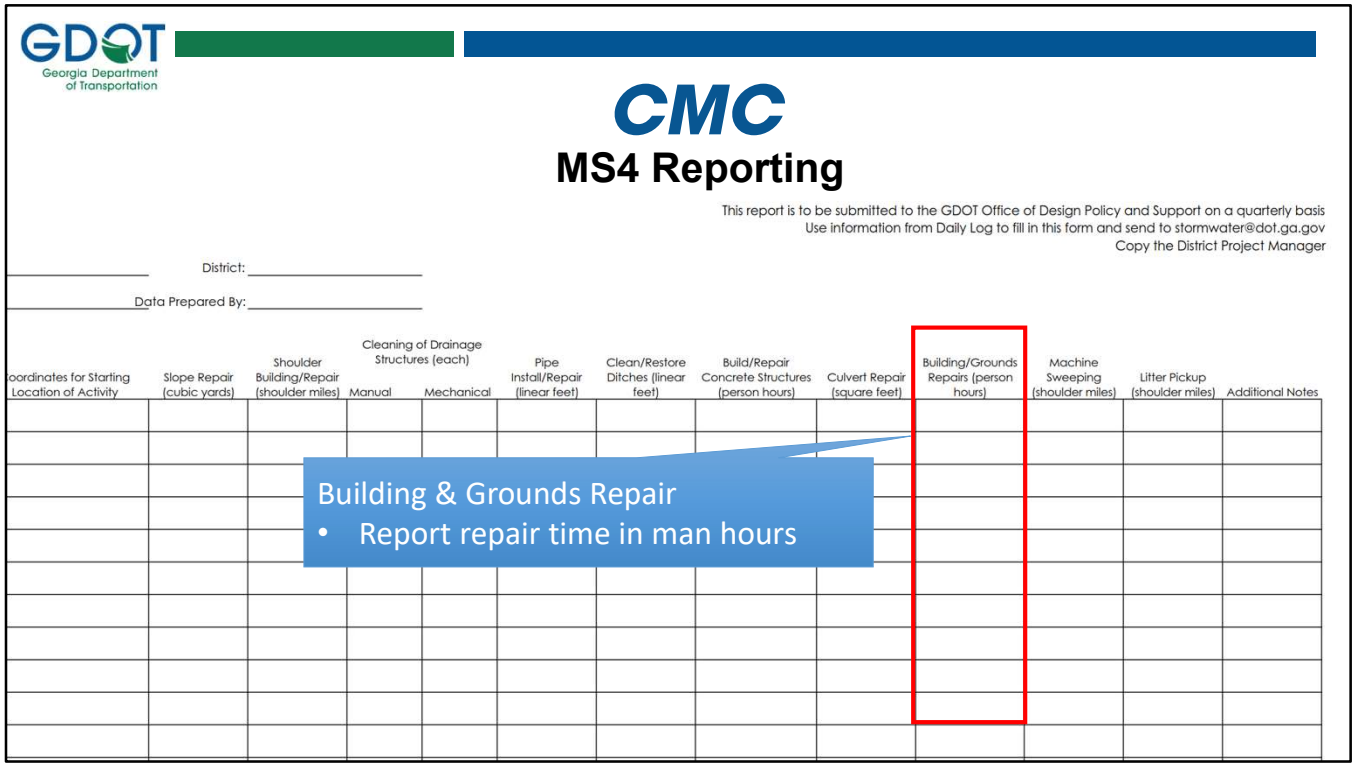
District: _____

Data Prepared By: _____

oordinates for Starting Location of Activity	Slope Repair (cubic yards)	Shoulder Building/Repair (shoulder miles)	Cleaning of Drainage Structures (each) Manual	Mechanical	Pipe Install/Repair (linear feet)	Clean/Restore Ditches (linear feet)	Build/Repair Concrete Structures (person hours)	Culvert Repair (square feet)	uilding/Grounds Repairs (person hours)	Machine Sweeping (shoulder miles)	Litter Pickup (shoulder miles)	Additional Notes

Culvert Repair
1. Report area of culvert repair in square feet

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



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Georgia Department of Transportation

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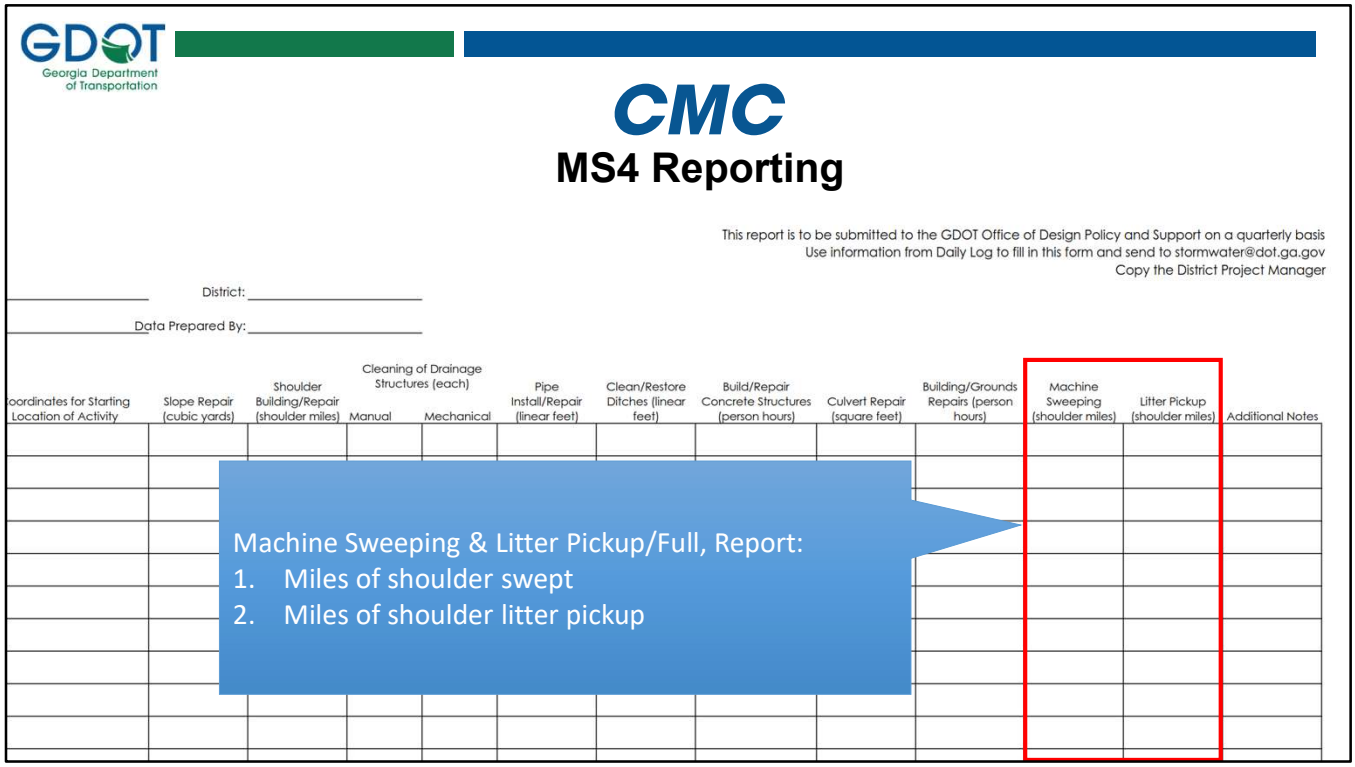
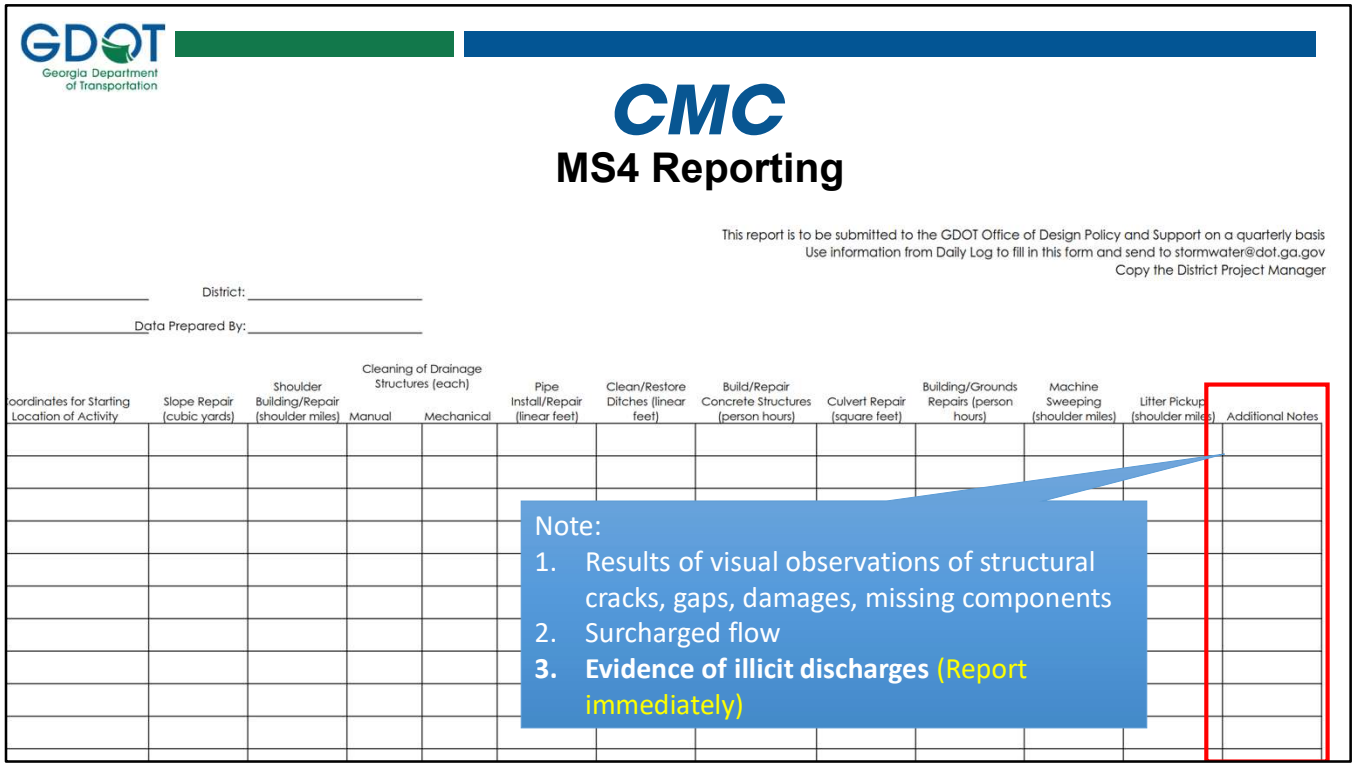
Building & Grounds Repair
- Report repair time in man hours

When repairs that have been made to buildings or grounds are completed, the man hours required for construction should be reported.



When sweeping and litter patrol is performed, the following data should be reported: miles of shoulder swept and litter collected.



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Use information from Daily Log to fill in this form and send to stormwater@dot.ga.gov
Copy the District Project Manager

District: _____

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Note:
1. Results of visual observations of structural cracks, gaps, damages, missing components
2. Surcharged flow
3. **Evidence of illicit discharges** (Report immediately)

Additional details such as visual observations of structural cracks, gaps, damages, missing components, or surcharged flow should also be included in your report.

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

GDOT Georgia Department of Transportation

CMC

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).

CMC 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.

Illicit Discharge Detection and Elimination (IDDE)

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 non-stormwater 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 24-hours 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

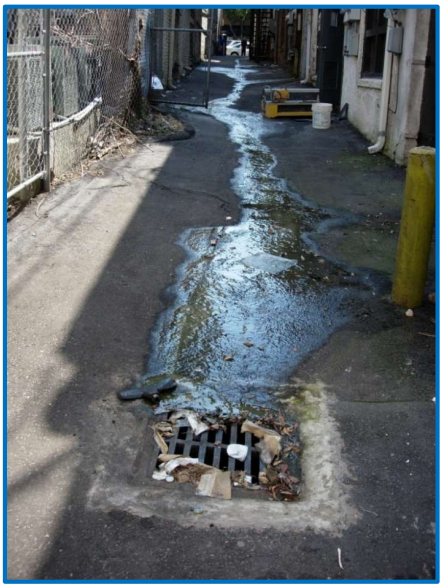
Example: District 7 had a water line that was flowing into an inlet in August of 2018.

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

How do illicit discharges enter an MS4?

Directly:

- 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

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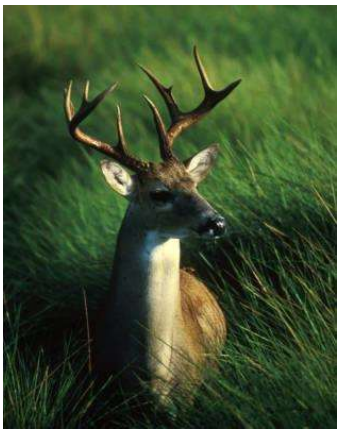
Why is it important to eliminate illicit discharges?

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

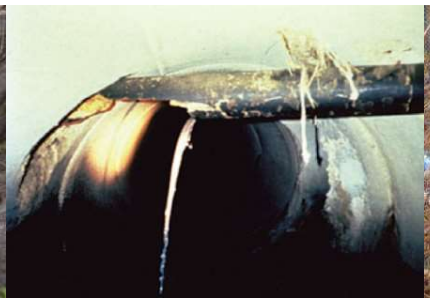


Illicit discharges may release heavy metals, toxins, oil and grease, solvents, nutrients, viruses, and bacteria.

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

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/

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Signs of Illicit Discharges

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/

Signs of Illicit Discharge – Irregular Color

Intensely Colored – Murky Blue green	Intensely Colored – Tan Brown	Intensely Colored – Milky White, Dishwasher Gray	Intensely Colored – Black	Intensely Colored – Bright Red	Intensely Colored – Dark Red
Possible Source: Plankton bloom, sewage, fertilizer runoff, vehicular wash water or tracing dye	Possible Source: Runoff from construction site, soil erosion, rainfall event	Possible sources: Paint, lime, milk, or grease	Possible source: Septic wastewater, sulfuric acid spill or a turnover of oxygen depleted water	Possible source: Industrial – fabric dye	Possible source: Industrial – fabric dye
					

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.

*Photo on left from http://www.geograph.org.uk/photo/729705 geograph.org.uk
*Photo on right from http://www.lcghd.org/storm_water.aspx

Signs of Illicit Discharge – Irregular Color

Intensely Colored – Clear Blue- green	Intensely Colored – Orange - Red	Intensely Colored – Bright Green	Intensely Colored – Bright Yellow	Intensely Colored – Olive Green
Possible source: Industrial – fabric dye, paper ink	Possible Source: Iron deposits, tracing dye, deposits on stream beds often associated with oil well operations, oily sheen or petroleum; odor may be present	Possible source: Anti-freeze, tracing dye	Possible source: Algal bloom, Tracing dye	Possible source: Septic Tank Effluent
				

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.

*Photo on left from http://www.geograph.org.uk/photo/729705 geograph.org.uk
*Photo on right from http://www.lcghd.org/storm_water.aspx

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Signs of Illicit Discharge

Irregular Odor: Rancid/sour, soap, petroleum, sulfide, ammonia,

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

*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

Signs of Illicit Discharge

Turbidity: Cloudiness caused by small suspended particles

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

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Signs of Illicit Discharge

Floatables: Materials in discharge that are present at water's surface

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.

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

Signs of Illicit Discharge

Deposits: Stains or material left by illicit discharges

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

*Photo on right from http://www.tnepsc.org/page.asp?ID=15
*Photo on left from www.thames21.org.uk/2013/04/soap-suds-and-sewage-fungus-some-water-cannot-be-cleaned-by-suds-alone/

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Signs of Illicit Discharge

Deposits: Sediment

Sediment deposits may be due to construction activities or erosion.

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

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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. Blue-green 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/)

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Signs of Illicit Discharge

Biological Indicators

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

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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

The Golden Rule:
When in doubt, Report!

Reporting Suspected Illicit Discharges

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?

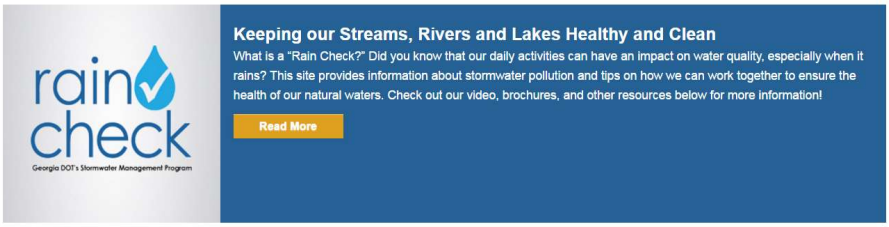
Reporting must be done within 24 hours so be sure to document the details.

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

Reporting Suspected Illicit Discharges

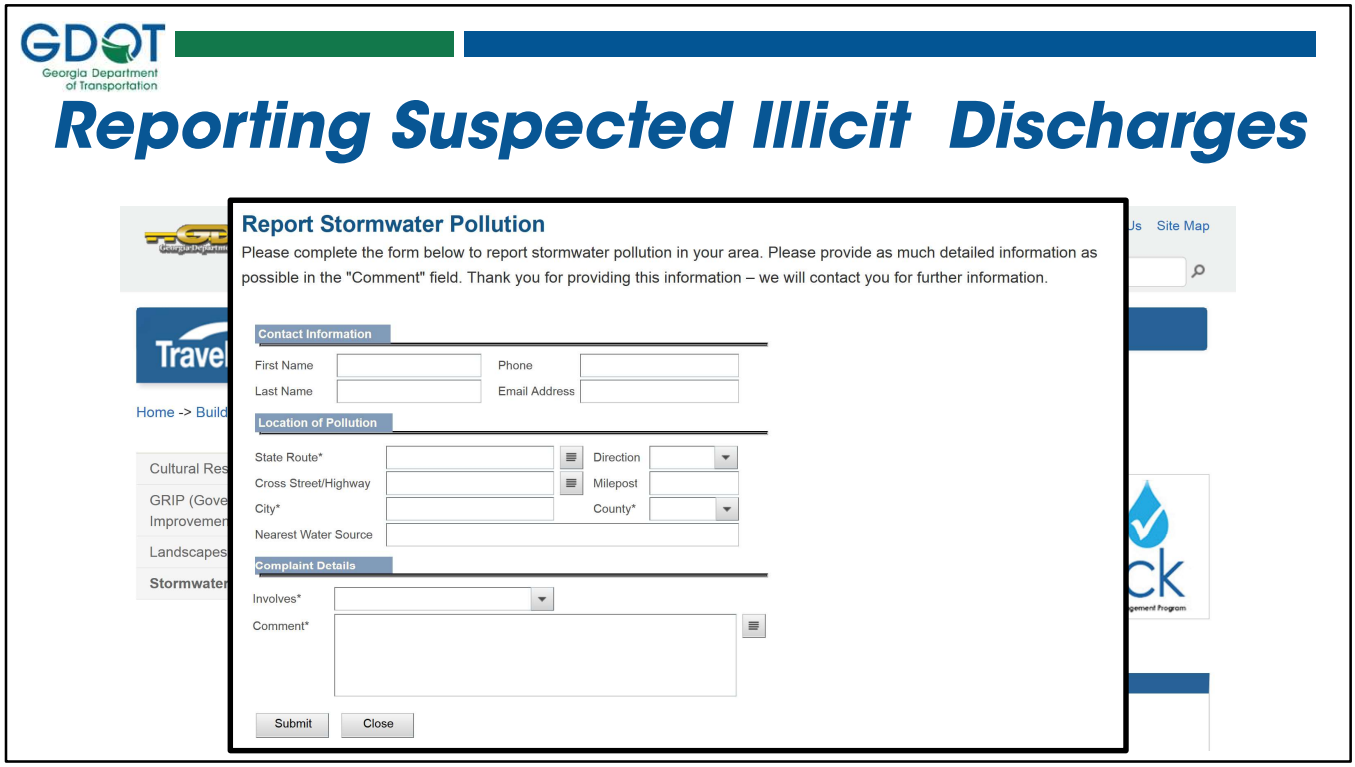
The public can report illicit discharges 2 ways:

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

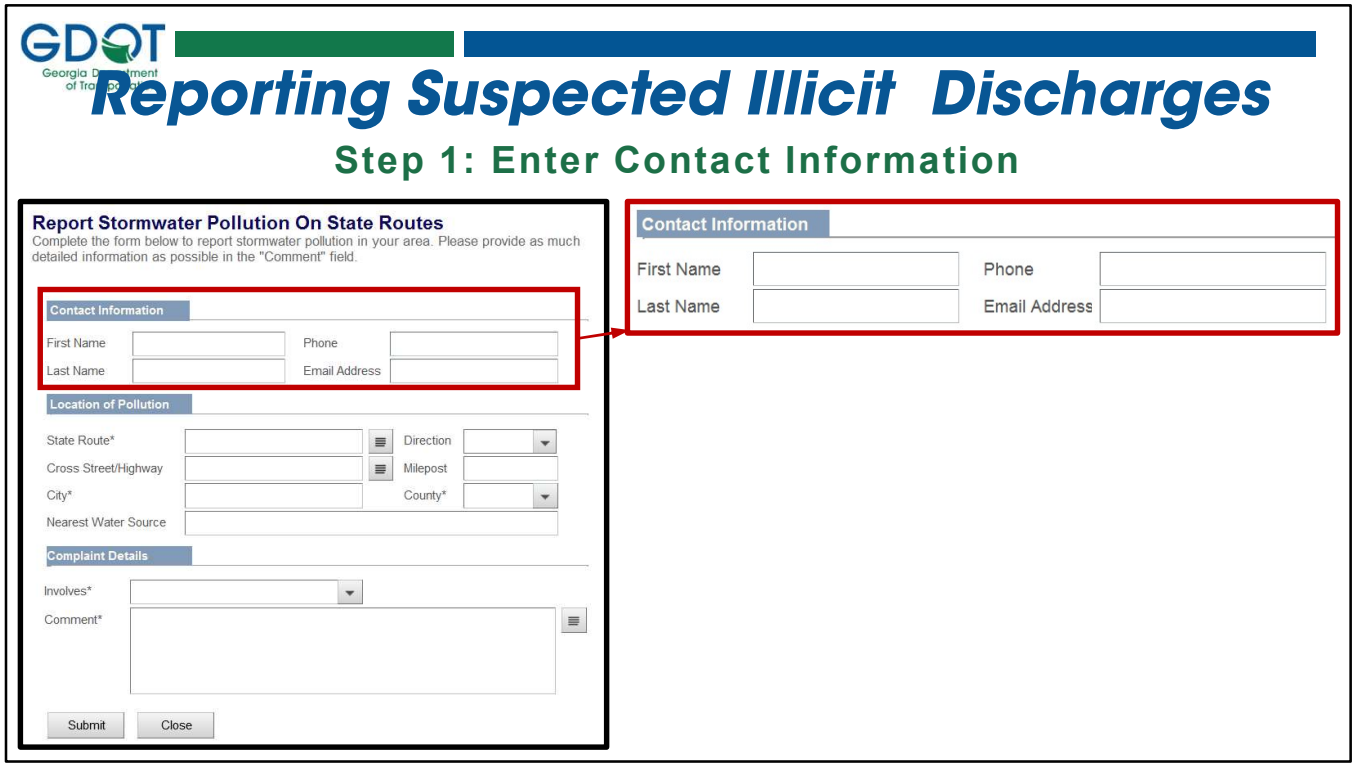


Be sure to recognize the difference between illicit discharges and a spills. If a hazardous situation is observed, contact emergency services.

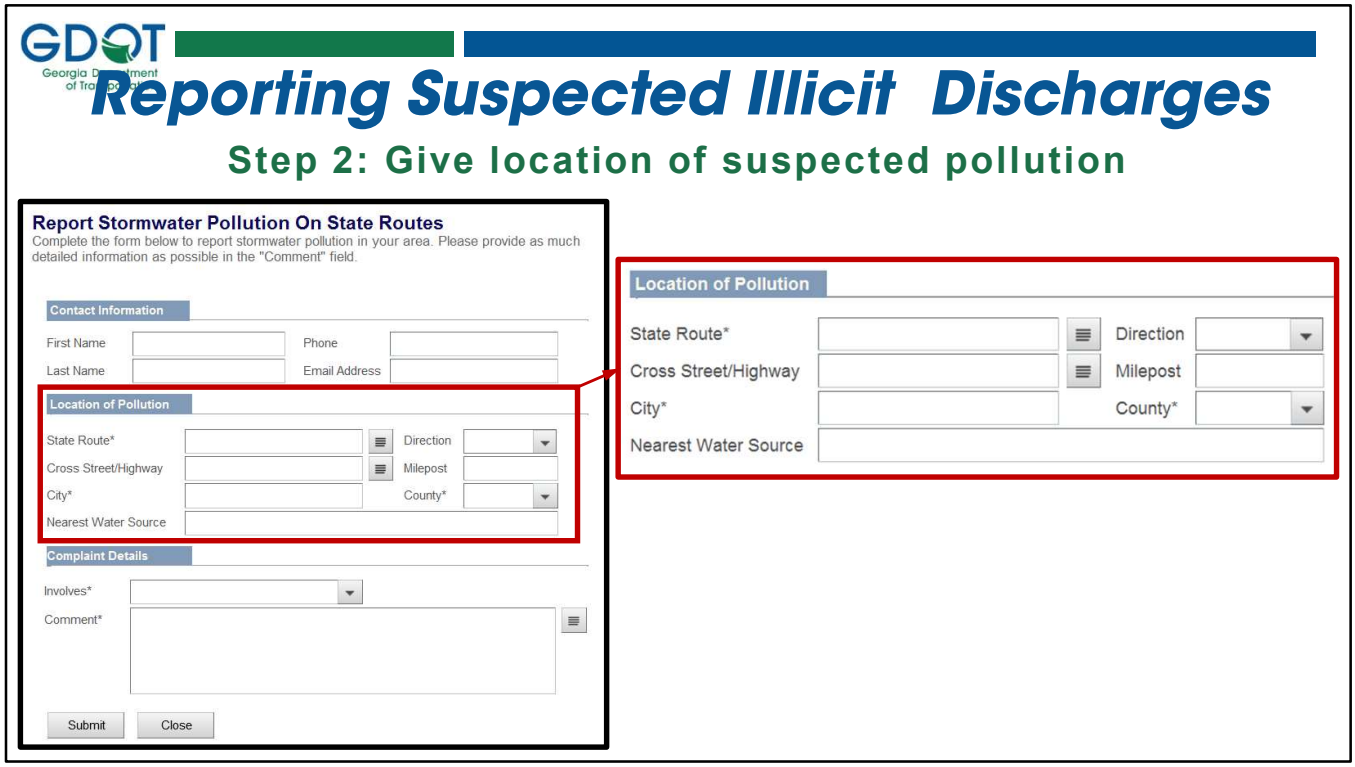
The Project Manager or District Maintenance Office is the District level contact for MS4 items. A GDOT employee that observes – or is notified - an illicit discharge can call the Project Manager or file a notification using the website. The notification is then logged and processed using GDOT's REMEDY 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.

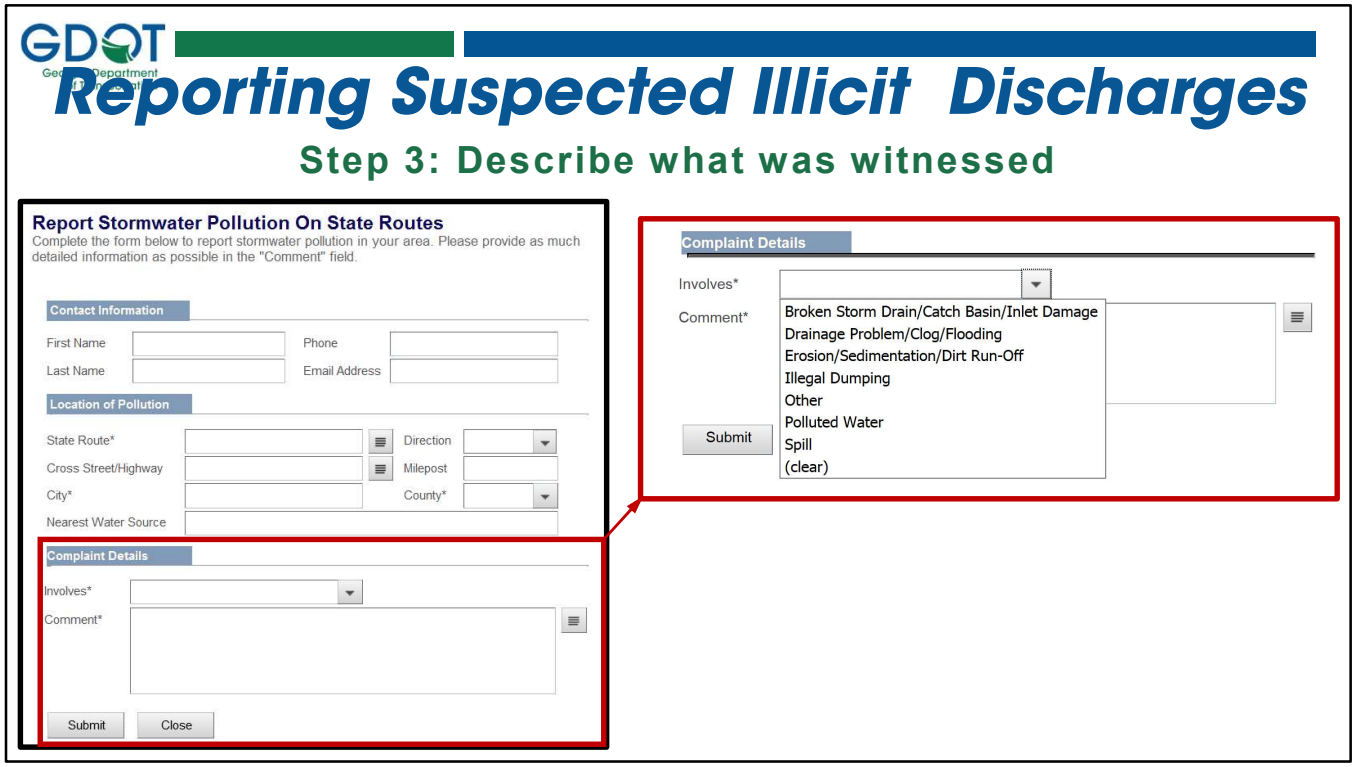


Enter your full first and last name along with your phone number and GDOT employee email address.



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.

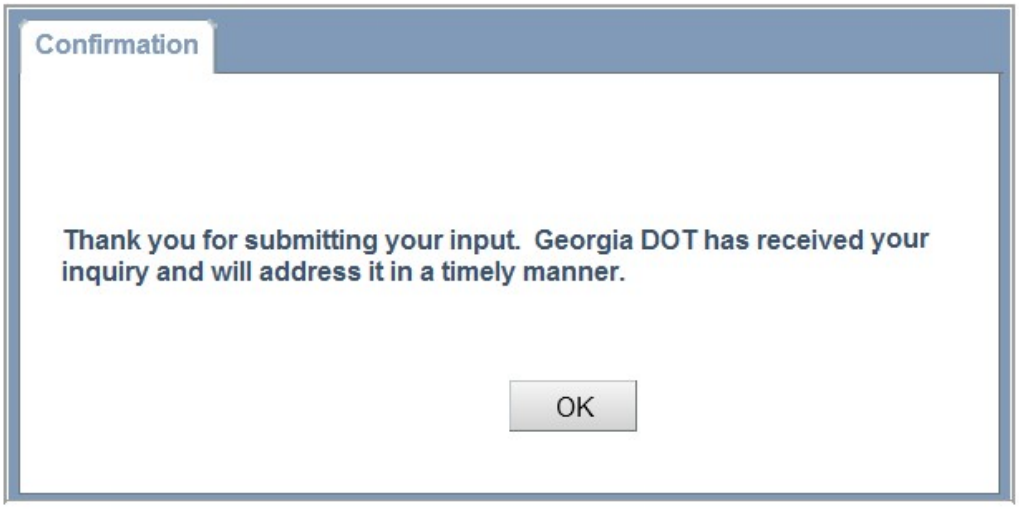


Involves: To the best of your knowledge, choose what you believe to be the source of the pollution from the pull-down list.
Comment: Describe the signs of illicit discharge you saw, including any combination dry-flow, color, odor, turbidity, presence of floatables, deposits, and biological indicators. 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.

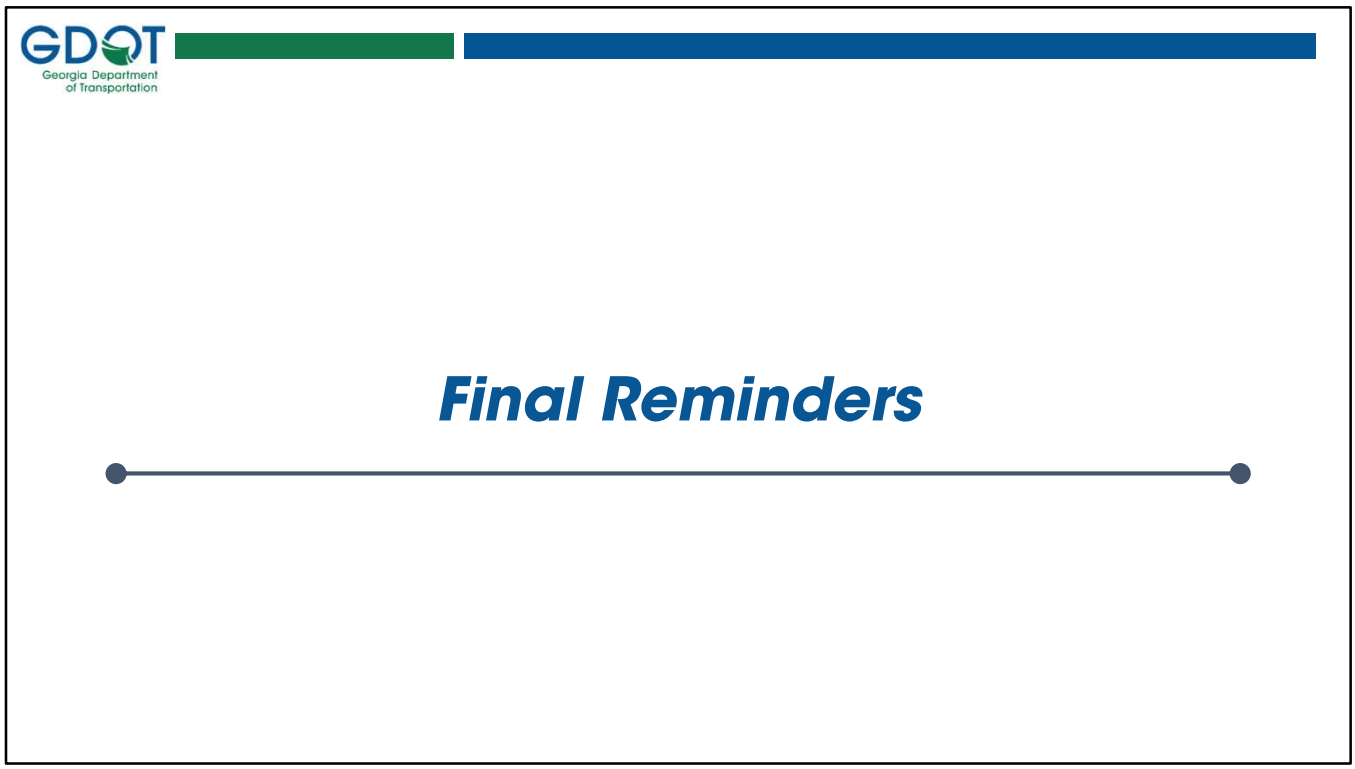
Once the form is completely filled out, select “Submit”

Reporting Suspected Illicit Discharges

Step 4: Submission Confirmation



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.