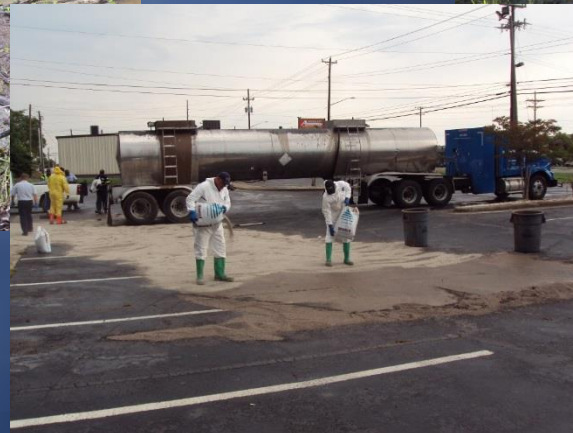


# City of Monroe Illicit Discharge Detection and Elimination Program



*Stormwater  
Management –  
Everyone's job*

# Outline

- 💧 **General information**
- 💧 **Illicit Discharge**
- 💧 **Site Investigation**
- 💧 **Outfall Reconnaissance**
- 💧 **Pilot Project**
- 💧 **Regional Stormwater Partnership  
of the**



# General Information

💧 County seat of Union County

💧 Population: 35,000 ±

💧 Size - 24.9 Sq. miles

💧 Watersheds

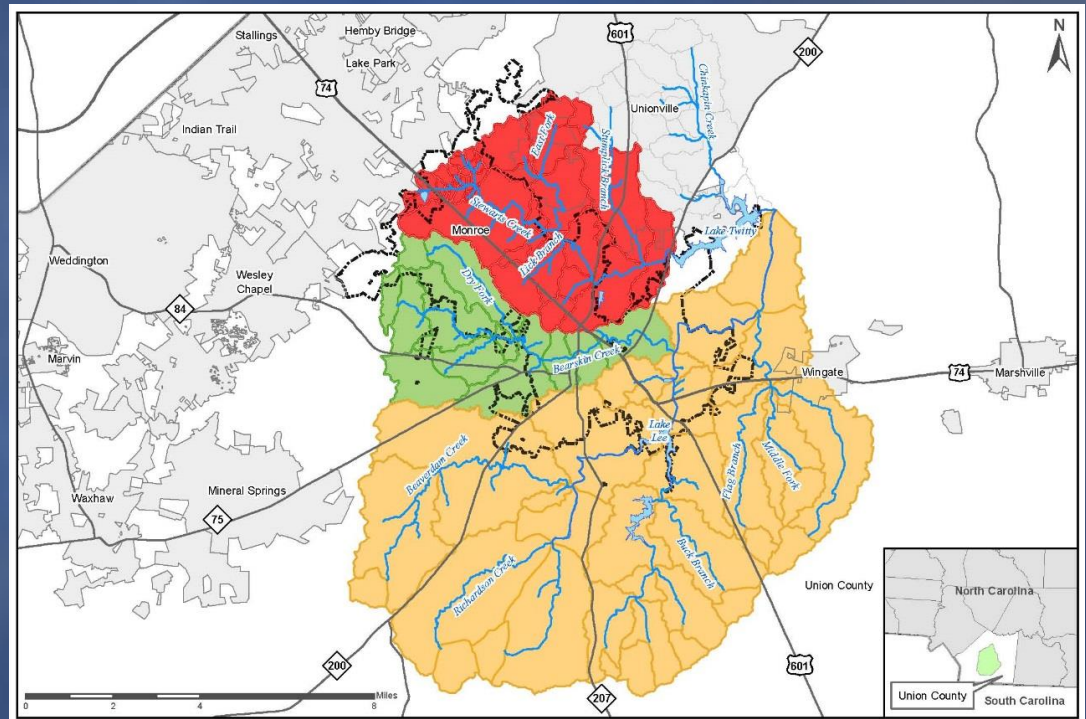
💧 Stewarts Creek

💧 Bearskin Creek

💧 Richardson Creek

💧 NPDES Permit No.

NCS000482



# City of Monroe Stormwater Program

## Stormwater Organization



Engineering Department  
Engineering Director  
Jim Loyd, P.E.

Engineering Services

Street Division

Land Development & Infrastructure Engineer  
Sarah McAllister, P.E.

Stormwater Engineer  
Chris Costner, P.E., CSM

Solid Waste Coordinator  
Laurie Broome

Street Superintendent  
Terrell Jackson

Plan Review  
Infrastructure Eng. Tech. II  
Construction Inspector II  
Erosion Control Inspector  
Plat Review / Address Eng. Tech. I

NPDES Coordinator  
Stormwater Eng. Tech. II (2)

Stormwater Maintenance Crew  
Special Project Crew  
Concrete Crew  
Asphalt Maintenance Crew  
Asphalt Reclamation Crew  
Street Sign Tech.

# Stormwater Utility Program



## Purpose:

- 💧 **Meet EPA's NPDES, Phase II requirements**
- 💧 **To enhance existing stormwater system**
- 💧 **To protect water resources**
  - 💧 Protect our streams/creeks
  - 💧 Water supplies
  - 💧 Recreation use
  - 💧 Future generation



## Programs:

- 💧 **Program Administration**
- 💧 **NPDES, Phase II Compliance**
- 💧 **Stormwater Operation/Maintenance**
- 💧 **Stormwater Capital Improvement Projects**
- 💧 **Stormwater Inventory**
- 💧 **Stormwater Master Planning/Water Quality**

# Stormwater Utility Fee Schedule

## 💧 Budget:

- 💧 FY18: \$2,102,835
- 💧 FY19: \$2,185,186
- 💧 FY20: \$2,185,186 (Proposed)
- 💧 Fund Balance: \$1,293,000 (reserve)

## 💧 Residential Rate – Single Family Detached/ Mobile Homes

- 💧 Tier – Impervious Area (square feet)
  - 0 to 2,010 - \$3.15/month
  - 2,011 to 3,289 - \$4.50/month
  - 3,288 and beyond - \$6.30/month

- 💧 Other Residential Units
  - Town Homes - \$2.25/month
  - Multifamily - \$2.70/month
  - Condominiums - \$2.25/month

## 💧 Non-Residential Rate

- 💧 1 Equivalent Residential Unit (ERU) per Impervious Area - \$4.50/ERU/month
- 💧 1 ERU equal to 2,618 square feet of impervious surface

## 💧 Began collecting stormwater fees in January 2009



# Illicit Discharge Detection



## 💧 Stormwater Management

💧 City Ordinance 157-701

💧 Effective October 2007

💧 Adopted State model ordinance

## 💧 Stormwater Hotline

💧 704-282-4515

## 💧 Reporting Illicit discharge or spill

💧 All emergency spill forward Fire  
Deptment

💧 Reported to NDPES Coordinator

# Types Illicit Discharge



## Types:

Illicit connection

Spills

Nuisance

## Priority

High

Discharge entry surface water  
or drainage system

Medium

Discharge contained

Low

Nuisance

## Documentation



# Enforcement



## 💧 Violation

### 💧 To cause or allow

- 💧 Discharge
- 💧 Emission
- 💧 Disposal
- 💧 Pouring
- 💧 Pumping
- 💧 Connect directly or indirectly

### 💧 Any stormwater conveyance, Water of the State, or land

### 💧 Discharging anything other than stormwater runoff into the system

## 💧 Civil Penalties

- 💧 \$50 - first citation
- 💧 \$100 - second citation
- 💧 \$500 - third and subsequent citation
- 💧 Any fines and penalties from State can be forwarded to the owner

# Allowable Discharges



- Water line flushing
- Landscaping irrigation
- Diverted stream flows
- Rising ground water
- Uncontaminated ground water infiltration
- Uncontaminated pumped ground water
- Discharge from potable water source
- Foundation and crawl space pump
- Air conditioning condensation
- Individual residential and charity car wash
- Dechlorinated swimming pool
- Street wash water
- Flow from emergency fire fighting
- Other non-stormwater discharge with valid NPDES discharge permit

# Site Investigation



## Site Visit

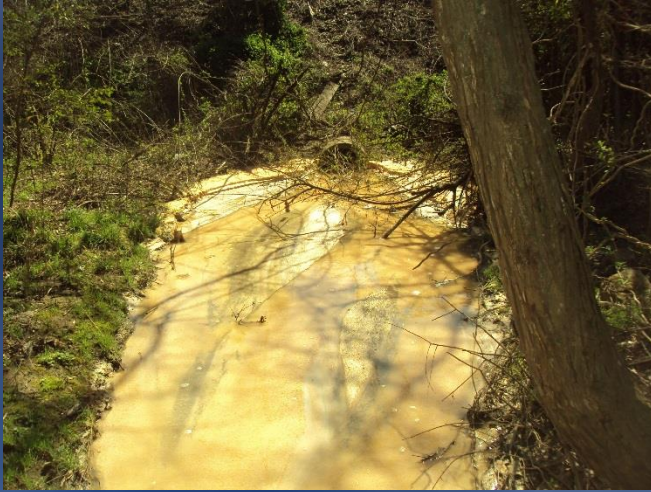
- Investigate spill or discharge
- Determine type of potential pollution
- Photos
- Contact Information

## Residential

- Door hanger
  - Checklist
  - Brochure
  - Stormwater Hotline magnet

## Documentation

# Site Investigation



## Commercial Outreach

- Site visit
- Talk with staff
- Send letter and brochure information
- Follow up site inspection

## Typical Issue

- Restaurant good housekeeping
- Trash and debris around dumpster
- Mobile car wash
- Grass clipping
- Litter
- Construction activities
- Outdoor grilling/washing

# Illicit Discharge Information

## Guide to Avoiding Illicit Discharges to Protect Water Quality



Stormwater rules and regulations protect streams and lakes from pollution. Under the City's Stormwater Management Ordinance, it is unlawful to discharge pollutants to storm drains, ditches, surface waters, or upon the land in a manner and amount that is likely to reach a stormwater conveyance system or waters of the US. Many materials should not be left outside exposed to the environment where stormwater can wash them into the drainage system thereby polluting streams and lakes. This guide is intended to help residents and businesses in the City of Monroe understand what is, and is not, allowed under the City's Stormwater Management Ordinance.

### What materials are prohibited from entering the drainage system?

Any liquid, solid, gas, or other substance, other than stormwater.

### How do illicit discharges typically enter the drainage system, contributing to pollution?

People/businesses cause or allow the discharge, emission, disposal, pouring, or pumping illicit materials directly or indirectly to:

- Any stormwater conveyance system (storm drain inlets, street gutters, ditches)
- Creeks, streams, ponds or lakes
- On land where the material can be carried off during storm events



Drainage systems are designed to reduce localized flooding. Storm drains discharge to ditches, streams and lakes without treatment.

### What is allowed to discharge to the drainage system?

Clean stormwater is allowed.

"Stormwater" is runoff from precipitation that flows over land and does not soak into the ground.

In certain cases, non-stormwater discharges are allowed, provided they do not significantly impact water quality:

- |                         |                                 |   |
|-------------------------|---------------------------------|---|
| • Water line flushing   | • Foundation drains             | • Irrigation waters (not including reclaimed water)   |
| • Landscape irrigation  | • Air conditioning condensation | • Individual residential and charity car washing      |
| • Diverted stream flows | • Footing drains                | • Flows from riparian habitats and wetlands           |
| • Rising ground waters  | • Springs                       | • Dechlorinated swimming pool discharge               |
| • Street wash water     | • Water from crawl space pumps  | • Flows from emergency fire fighting                  |
| • Lawn watering         | • Potable water sources         | • Uncontaminated ground water – infiltrated or pumped |

Note: Other non-stormwater discharges for which a valid NPDES discharge permit has been approved and issued by the State of NC is allowed, provided that any such discharges to the Municipal Separate Storm Sewer System are authorized by the City of Monroe Engineering Department.

### What are some examples of materials that should not be discharged and may be considered Illicit Discharges?

- |                        |                               |                |                              |                          |                      |
|------------------------|-------------------------------|----------------|------------------------------|--------------------------|----------------------|
| • Trash / litter       | • Chemicals                   | • Soap         | • Wash water                 | • Fertilizer             | • Concrete washout   |
| • Motor oil            | • Cleaners                    | • Salt / brine | • Laundry water              | • Leaves                 | • Grass clippings    |
| • Cooking Oil / grease | • Pressure wash water (some*) | • Sewage       | • Commercial car wash water* | • Chlorinated pool water | • Dumpster leakage   |
| • Paint                | • Process wastewater          | • Septage      | • Mop water                  | • Filter backwash        | • Stone dust         |
| • Paint rinse water    | • Soil / sand                 | • Pesticides   | • Food waste                 | • Mud                    | • Animal / pet waste |

\*See "Best Management Practices for Vehicle Washing, Pressure Washing, Equipment Washing and Other Outdoor Surface Cleaning Operations" publication

### Are there penalties and fines involved?

Yes, violators of City Stormwater Management Ordinance are subject to civil and/or criminal penalties.

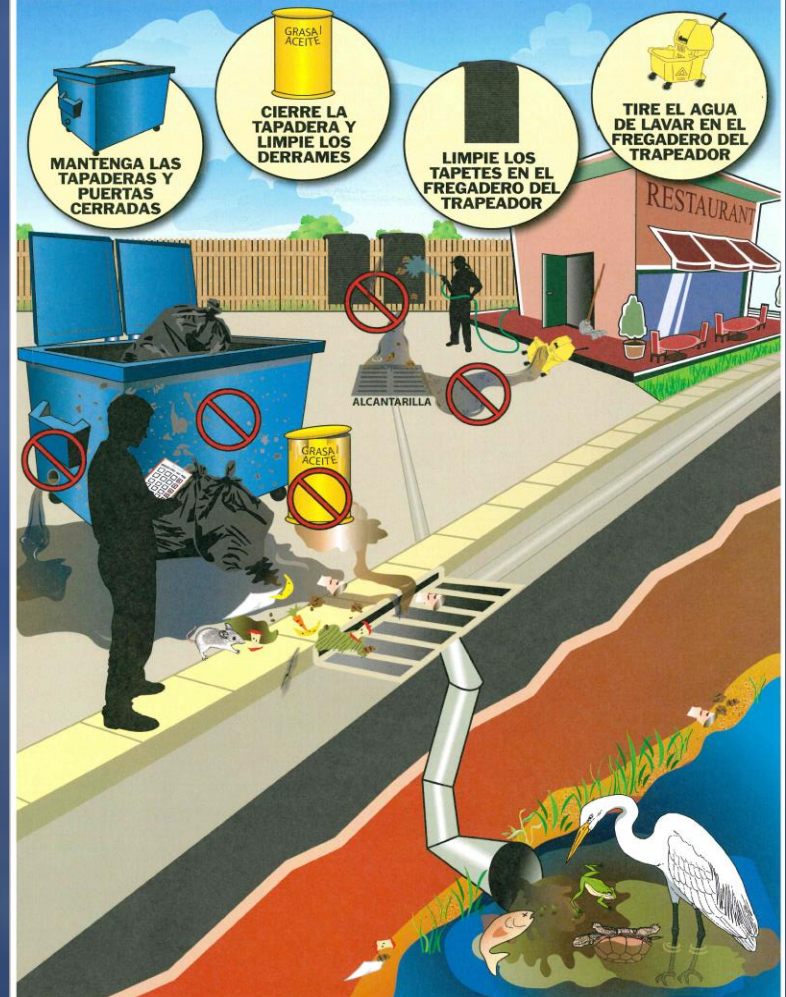
### How can I find out more about Illicit Discharges and protection of surface waters?

You may visit the City's Stormwater website at <http://engineering.monroenc.org/stormwater-services>, or contact Carol Hambridge 704-282-4535 [CHambridge@MonroeNC.org](mailto:CHambridge@MonroeNC.org)

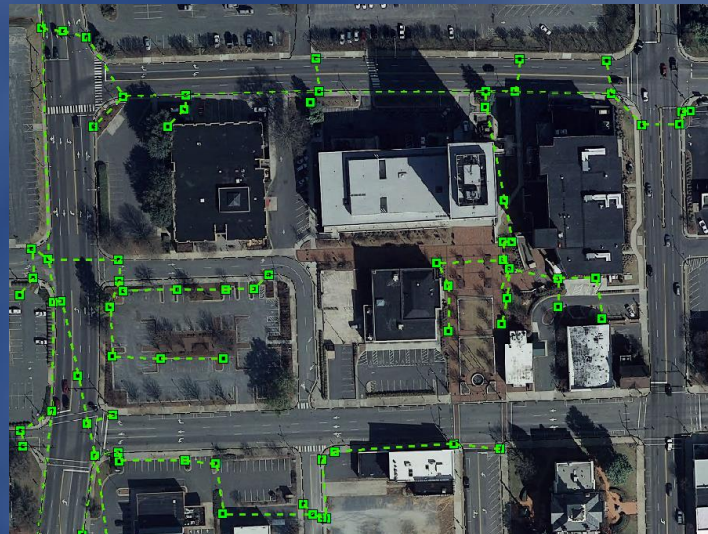


To report an Illicit Discharge, call the Stormwater Hotline 704-282-4515

Las practicas de limpieza afectan su record de sanidad...y nuestra agua.



# Stormwater Inventory



## Stormwater Inventory

- NPDES, Phase II requirements
- Updating City's drainage maps

## Global Positioning System (GPS)

- Hand held Trimble units
- Engineering staff

## Drainage structures and pipes

- Public property
- Private property
- NC DOT R/W

## Stormwater BMPs / SCMs

## Stormwater Outfalls

## Constantly Updating

- Repairs to drainage system
- New system
- New stormwater BMPs

## ArcGIS application

- ArcGIS Collector
- Mobile device

# Stream Walk



## Watershed

Each every 3 years

Check outfall

## Fall and Winter

## Documentation

Location

Shape and material

Physical Indicators

Odor

Color

Turbidity

Floatable

ph

Flow

## Issues

Staffing

Equipment

# Pilot Program - Drone



## 💧 Pilot Program

💧 Purpose

💧 Bearskin Creek

💧 Budget: \$5,000

## 💧 Goal

💧 Locate outfalls

💧 Check for flow

💧 Reduce staff time

## 💧 Future

💧 Increase usage



# Regional Stormwater Partnership



RSPC Quarterly Meeting



In-Studio Interview on Stormwater with Dave Johnson, Mt. Holly



Tech Talk Training by Chris Costner

## Regional Stormwater Partnership of the Carolinas

18 Municipality Partners

## Promote stormwater issues

Radio Ads

Internet

Television Commercials

Television Interviews

WCCB – News Rising Spotlight

Carolina Insight

## Workshops

Elected Officials

Tech Talks

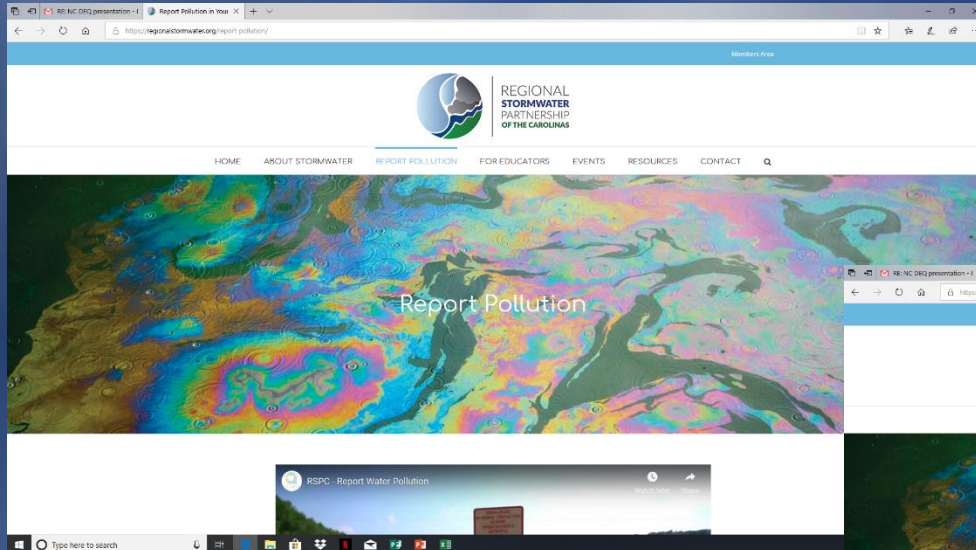
Quarterly Meeting

## Webpage

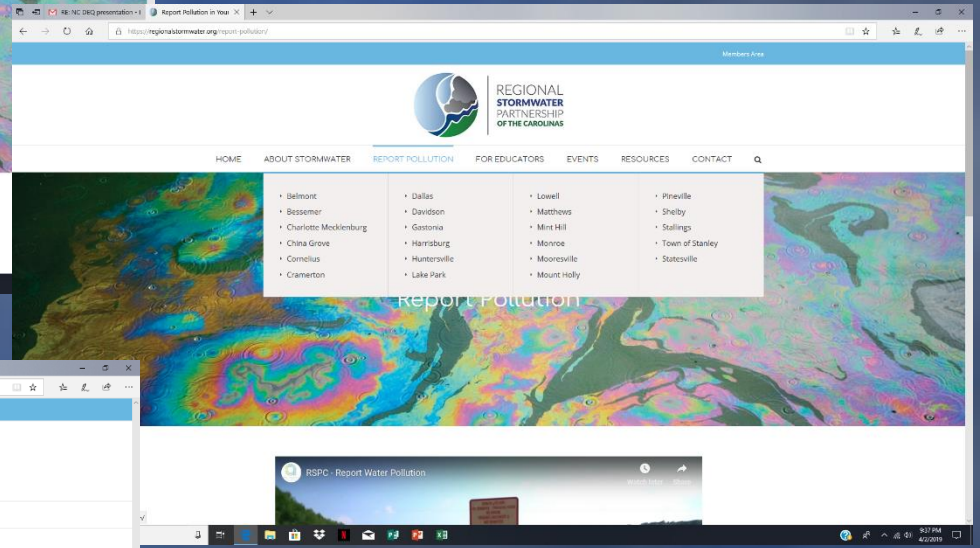
[www.regionalstormwater.org](http://www.regionalstormwater.org)

Section for Educator

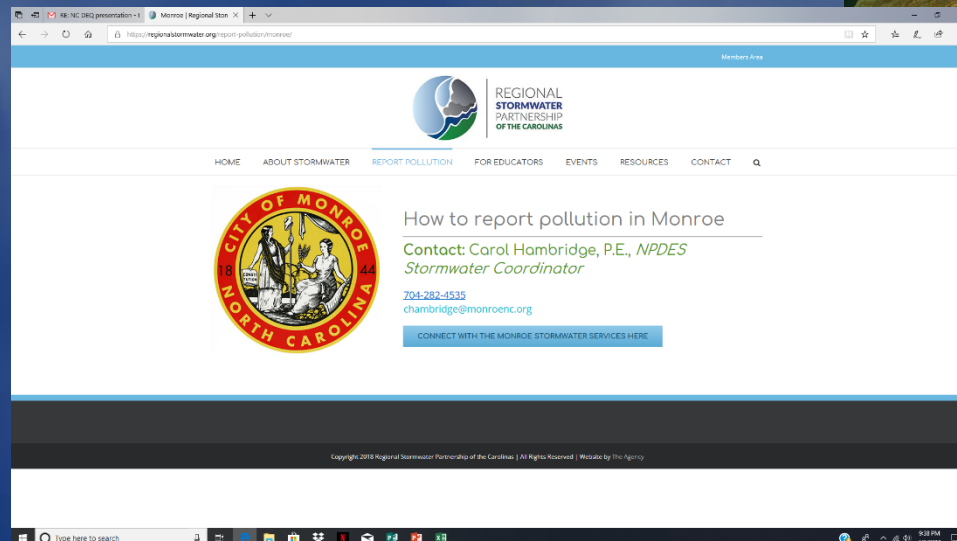
# Regional Stormwater Partnership



Report Pollution Tab



Locate Municipality

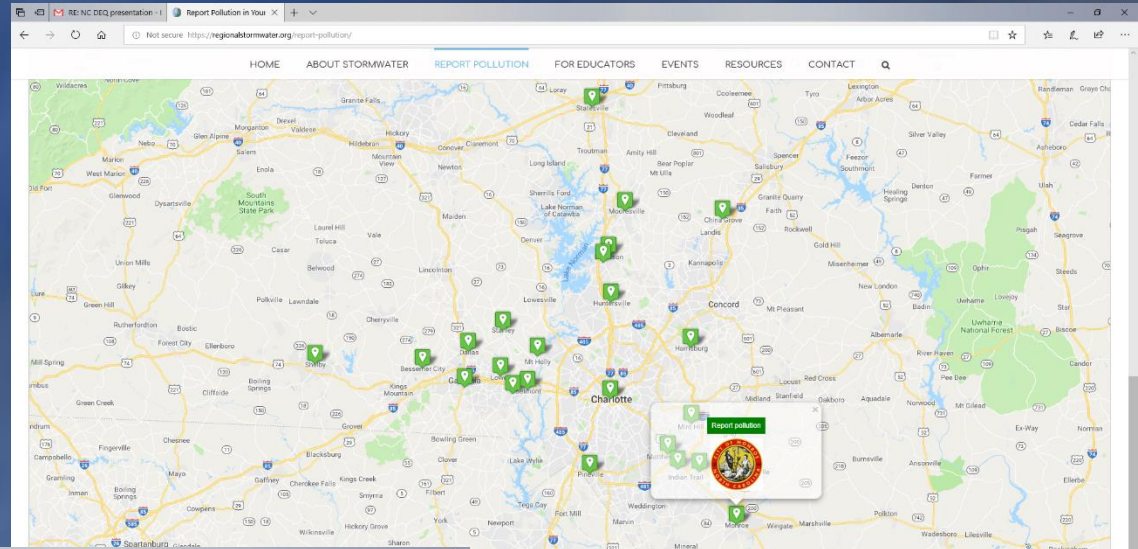


City of Monroe Contact Person

# Regional Stormwater Partnership



## Map Locating Member Municipality



## Commercial for Reporting Pollution

# Questions?



**Chris Costner, P.E., CSM**  
**Stormwater Engineer**  
**[ccostner@monroenc.org](mailto:ccostner@monroenc.org)**  
**704-282-4537**