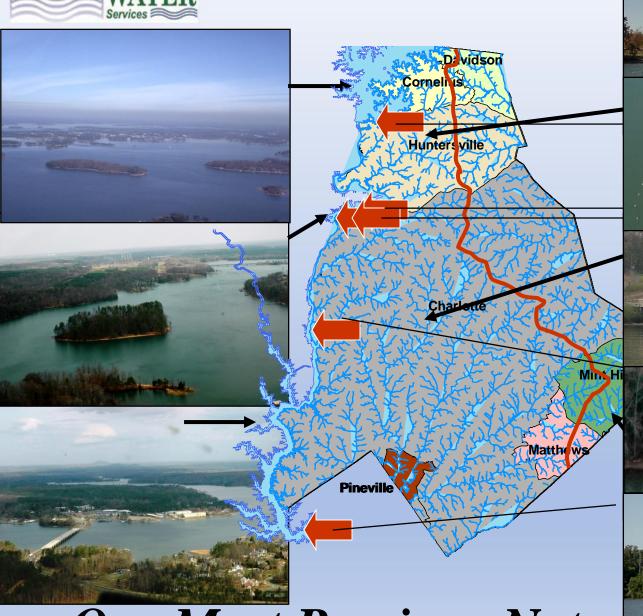


## Waters of Mecklen





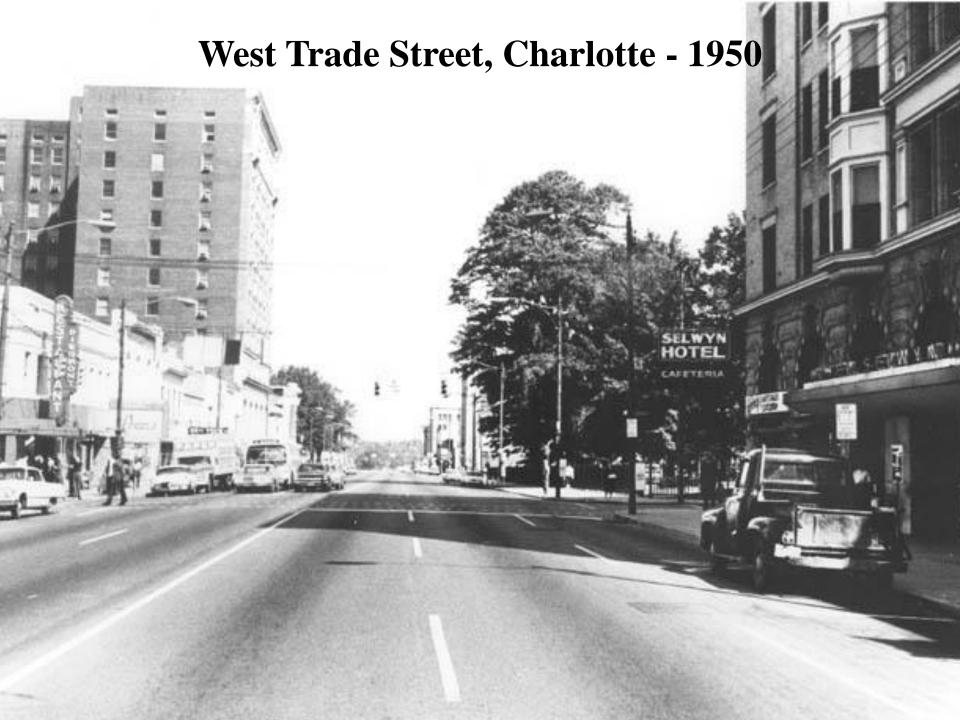


1876 - Charlotte constructed a sewer collection system through downtown that discharged straight to Little Sugar and Sugar Creeks by way of 4 large outfalls. Trade Street looking west from College Street - circa 1876



# 1903 - The first wastewater treatment plants were built on property now known as Revolution Park & Freedom Park.









<u>1960s</u> - Sewage dominant in creeks - Odors terrible - Deodorants used





## It All Began With "Smelly Creeks"



#### THE CHARLOTTE NEWS



## To Leave Vietnam In Fall



#### WCTU-TV Declared Insolvent

Catch Any Fish In Sugar?

You Can Forget About It

## A Tip: Don't Go Near The Water

o Avoid A Wreck



## Another 40,000 Troops

#### Approval Follows Meeting

## You Can Learn

## 

**September 1969:** Week long series of daily news articles regarding "smelly creeks."

**January 1970:** Mecklenburg County's Water Quality Program was established.

**September 1972:** Surface Water Pollution Control Ordinance adopted and oversight board established.

**July 1974:** Lake and stream monitoring programs established countywide.

**September 1986:** Cooperative working agreement with the State (DWQ) for the protection of water quality.

**July 1993:** City of Charlotte Phase I Permit became effective.

October 1996: County's "Creek Use Policy" adopted calling for all creeks to be suitable for human contact, S.W.I.M. (Surface Water Improvement & Management) Program was begun.

**August 2005:** Mecklenburg County Phase II Permit became effective (NCS000395). Covers Mecklenburg County, CMS, CPCC and the Towns.

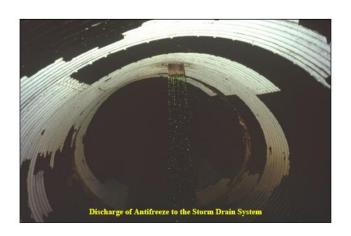
#### Front Page of Charlotte News – September 15, 1969



	BMP	Measurable Goals
a.	Maintain an Illicit Discharge	Maintain a written Illicit Discharge Detection and Elimination
l	Detection and Elimination	Program, including provisions for program assessment and
	Program	evaluation and integrating program.

#### **Illicit Discharge Detection and Elimination**

(IDDE) Policies and Procedures



Developed by Charlotte-Mecklenburg Storm Water Services for Compliance with Phase I and Phase II Storm Water Permit Requirements

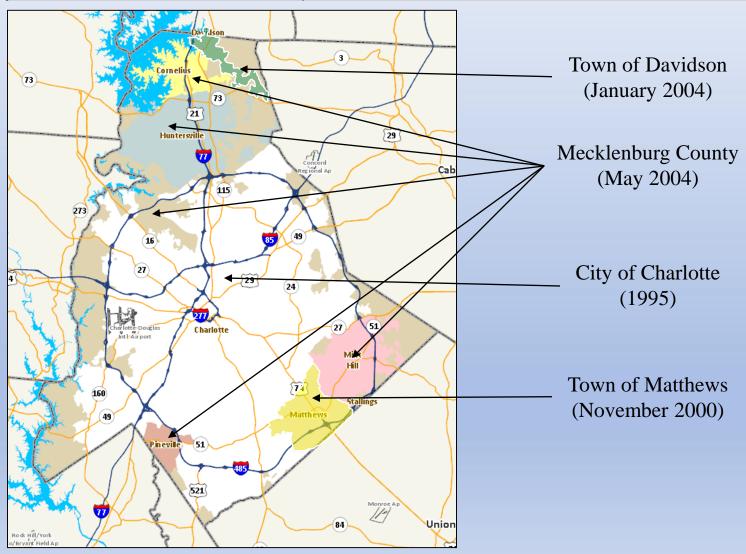
Updated Version: February 2014 (Previous versions: June 2012, October 2010, February 2010, January 2009, and February 2008)



https://charlottenc.gov/StormWater/Regulations/Pages/MecklenburgCountyRegulations/Manuals and Guidelines/Illicit
Discharge Detection & Elimination
Policies and Procedures.aspx

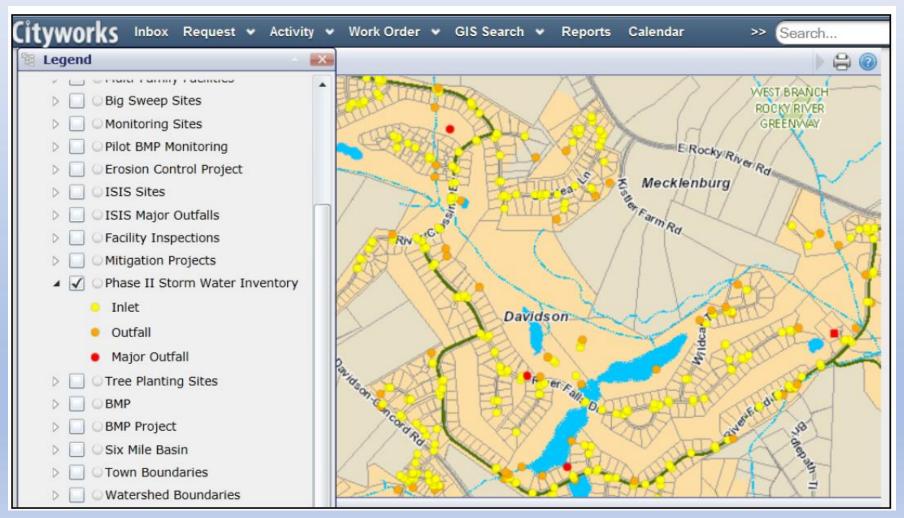


Ī	BMP	Measurable Goals	
Г	b. Maintain adequate legal authorities	The permittee shall maintain an IDDE ordinance or other	
ı		regulatory mechanisms that provides the legal authority to	
L		prohibit illicit connections and discharges.	





	BMP	Measurable Goals
С	. Maintain a Storm Sewer System	The permittee shall maintain a current a map showing major
L	Map of Major Outfalls.	outfalls and receiving streams.



6,886 outlets and 34,546 inlets mapped to date.



BMP	Measurable Goals
d. Implement a program to detect dry weather flows	The permittee shall maintain a program for conducting dry weather flow field observations in accordance with written procedures.



- Dry weather flows were observed and reported during original inventory of system.
- Sampled for fecal coliform bacteria, surfactants, fluoride, and oil and grease.
- Follow up field investigations are performed to identify and eliminate all pollution sources.
- Staff conduct ongoing field investigations to identify dry weather flows during responses to service requests and while conducting stream walks and various inspection activities, including IDEP.



	BMP	Measurable Goals
e.	Investigate sources of identified	The permittee shall maintain written procedures for
	illicit discharges.	conducting investigations of identified illicit discharges.

## **Summary of IDDE Investigations in FY2018**

Madhad	Investigations		Problems Detected	
Method	Countywide	Phase II	Countywide	Phase II
Requests for Service & Emergency	659 (1,362	123 (300	157	66
Responses	inspections)	inspections)		
Water Quality Monitoring (Fixed Interval	65 sites	17 sites	36	27
(34 sites) & CMANN (31 sites))	(1,388,437	(273,704		
	data points	data points		
Illicit Discharge Elimination Program (451	451 sites	24 sites	25	4
sites)				
Stream Walks	280.26 miles	81.16 miles	15	5
Totals	233	102		



#### **Responding to Citizen Requests for Service:**

- 大
- 659 requests responded to (519 in Phase I and 140 in Phase II)
- 1,362 inspections conducted (1,062 in Phase I and 300 in Phase II)
- 157 problems detected and eliminated (91 in Phase I and 66 in Phase II)





#### **Responding to Emergencies:**

- Maintain 24/7 response
- Most calls come through 911
- 48 emergency response in FY2018 (31 in Phase I and 17 in Phase II)







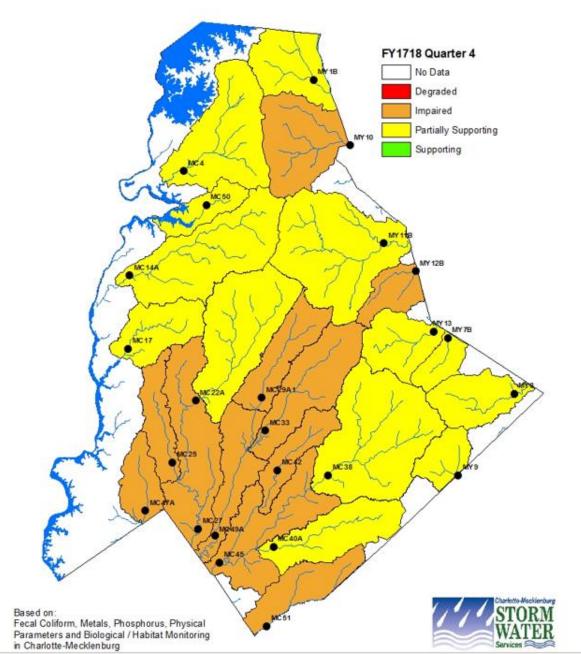
#### **Water Quality Monitoring:**

- 34 Fixed Interval Monitoring Sites (24 in Phase I and 10 in Phase II)
- 408 FIM monitoring events (288 in Phase I and 120 in Phase II)
- 31 CMANN Monitoring Sites (24 in Phase I and 7 in Phase II)
- 1,388,437 CMANN data points (1,114,733 in Phase I and 273,704 in Phase II)
- 36 problems detected (11 in Phase I and 25 in Phase II)





#### Water Quality Stream Use-Support Index



SUSI is a water quality index that is used to summarize large amounts of data into a single number that can be used to identify problem areas for additional follow up.



#### **Illicit Discharge Elimination Program (IDEP):**

- Investigating and monitoring storm water outfalls, business corridors; multifamily facilities, industrial facilities, and lift stations in Mecklenburg County
- 451 inspections conducted (431 in Phase I and 20 in Phase II)
- 25 problems detected and eliminated (21 in Phase I and 4 in Phase II)





**Outfall Inspections** 



#### **Stream Walks:**

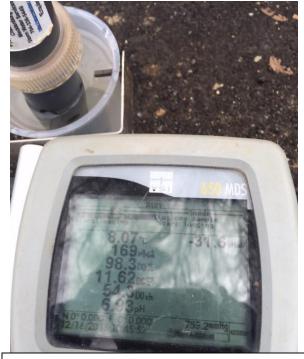
- 280.26 miles surveyed (199.1 in Phase I and 81.16 in Phase II)
- 349 new outfalls identified (258 in Phase I and 91 in Phase II), 479 outfalls inspected (375 in Phase I and 104 in Phase II), 140 dry weather flows identified (114 in Phase I and 120 in Phase II)
- 15 problems detected (10 in Phase I and 5 in Phase II)







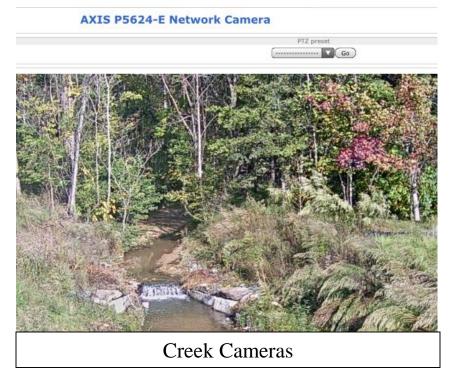
## **Source Identification**



YSI Multiprobe

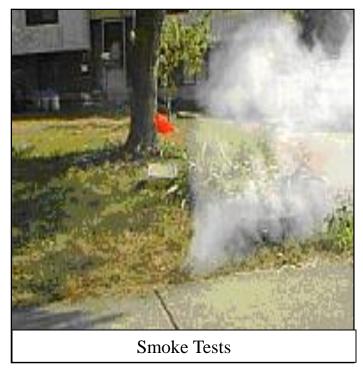


**Chlorine Meters** 





## **Source Identification**





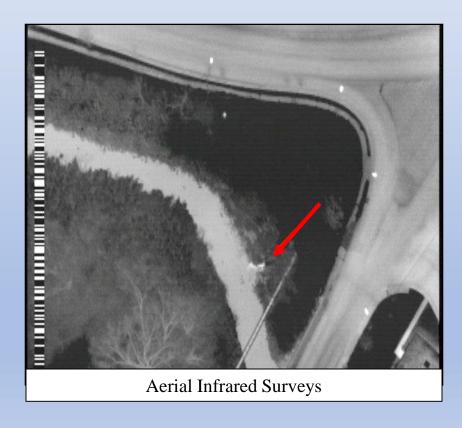






### **Source Identification - Less Reliable Techniques**

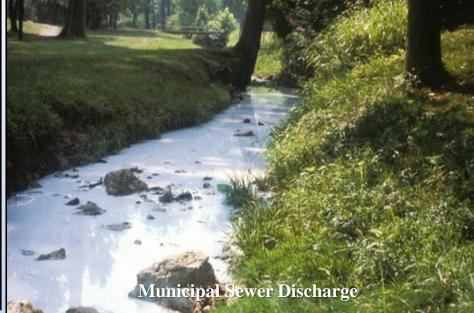
- **➤** Antibiotic Resistance Testing
- **➤** Microbial Source Tracking
- ➤ Aerial Infrared Surveys
- > Optical Brighteners
- **➤ Human Source Chemicals (Caffeine)**





#### Typical Illicit Discharges Observed in Charlotte, NC





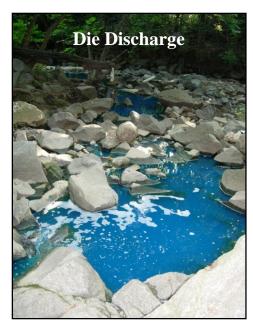




#### Typical Illicit Discharges Observed in Charlotte, NC



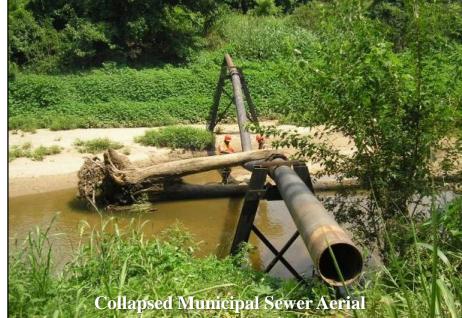






#### Typical Illicit Discharges Observed in Charlotte, NC



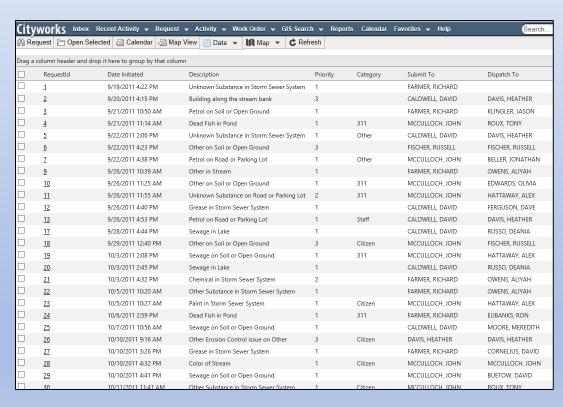


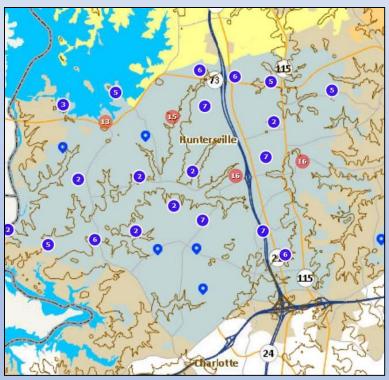






	BMP	Measurable Goals
f.		For each case the permittee shall track and document 1) the date(s) the illicit discharge was observed; 2) the results of the investigation; 3) any follow-up of the investigation; and 4) the date the investigation was closed.





### **Cityworks Database**



BMP	Measurable Goals
g. Provide Employee Training	The permittee shall implement and document a training program for appropriate municipal staff, who as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection.

TRAINING TOTALS FOR IDDE EDUCATION		
PERMITEE	FY	# OF EMPLOYEES
Davidson	2015	67
Cornelius	2015	56
Huntersville	2015	83
Pineville	2015	39
Mint Hill	2015	61
Matthews	2015	25
CMS	2015	157
CPCC	2016	76
Mecklenburg County	2016	704
Totals		1,268

- All applicable employees receive training at least once during the 5 year permit term.
- In 2014. a 3 minute video was developed entitled "Water Pollution: What Do You Do."
- By September 30, 2015, field staff in the following Mecklenburg County programs completed this training: Air Quality, Code Enforcement, Solid Waste, Environmental Health, Social Services, Parks and Recreation, and the Sheriff's Office.
- The following employees at the Towns, CPCC and CMS also completed this training: maintenance workers, firefighters, policemen, public works and utility workers, and parks and recreation.
- The second round of training will be completed prior to end of the next permit term on February 16, 2022.



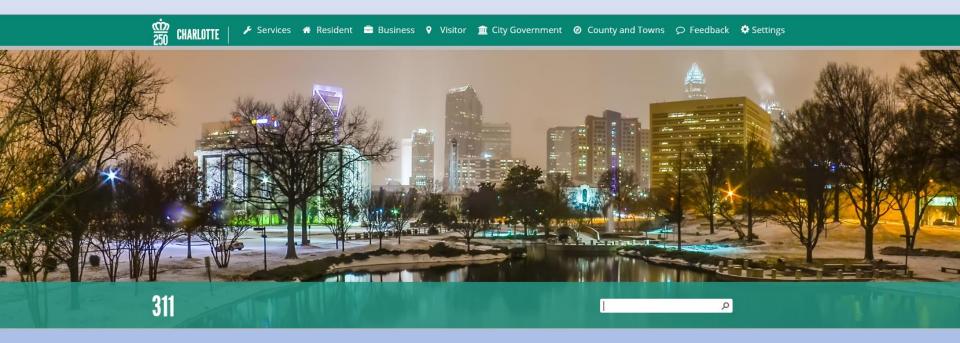
BMP	Measurable Goals
h. Provide Public Education	The permittee shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.



- A public outreach program has been developed that includes television and radio ads, as well as social media, handouts and brochures.
- Handouts and brochures are typically distributed during the performance of facility inspections, when responding to citizen request for service, and at event displays.



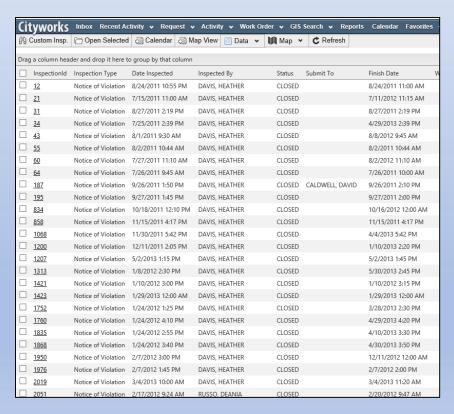
	BMP	Measurable Goals
i.	Provide a public reporting mechanism	The permittee shall promote, publicize, and facilitate a reporting mechanism for the public and staff to report illicit discharges and establish and implement citizen request response procedures.

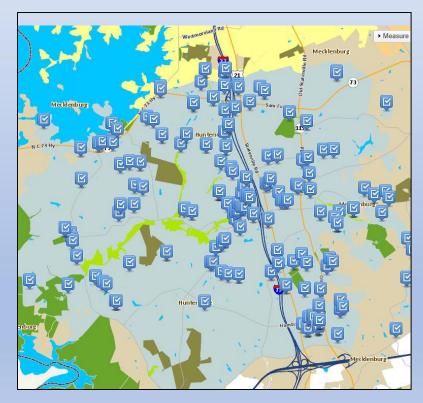


311 Dedicated Customer Service Helpline



	BMP	Measurable Goals
j.	Enforcement of the IDDE ordinance	The permittee shall implement a mechanism to track the issuance of notices of violation and enforcement actions as administered by the permittee. This mechanism shall include the ability to identify chronic violators for initiation of actions to reduce noncompliance.





**Cityworks Database** 



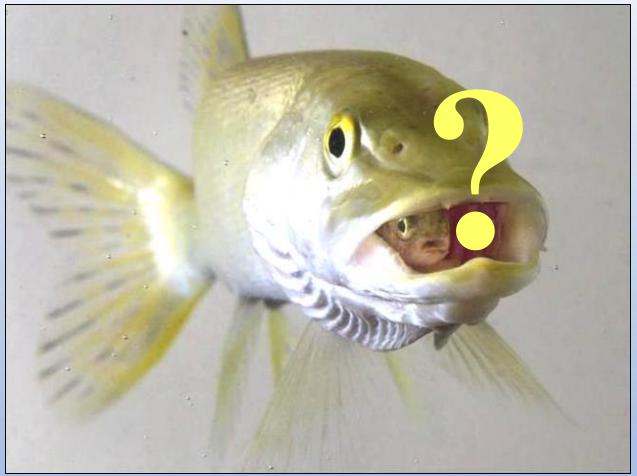
#### **Measuring Success**

### Annual Program Assessment



**Ratio of Number of NOVs Issued to IDDE Inspections Conducted** 





**Rusty Rozzelle 980-314-3217** 

http://stormwater.charmeck.org