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DON'T LET STORMWATER BE DRY

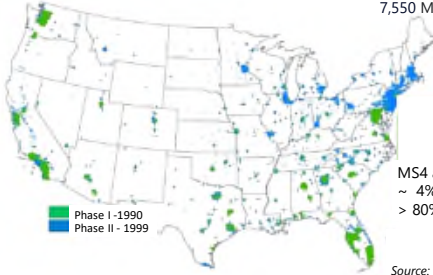
Annette Lucas PE

SCASM Meeting – September 7, 2023




National Map of MS4s

There are approximately 7,550 MS4s nationwide.




MS4 areas are:
~ 4% of US land area
> 80% of the population

Source: USEPA



WHAT ARE MS4 ENTITIES REQUIRED TO DO?

1. Public Education & Outreach
2. Public Involvement & Participation
3. Illicit Discharge Detection & Elimination (IDDE)
4. Construction Site Runoff Controls
5. Post-Construction Site Runoff Controls (PC)
6. Pollution Prevention & Good Housekeeping (PP/GH)



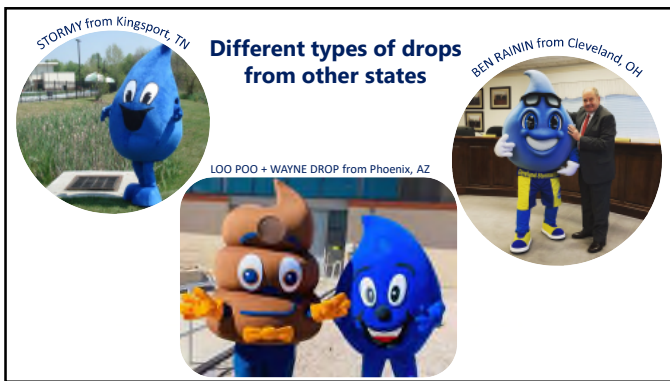














H₂O
MARCH 5 - JUNE 29, 2022

CAITLIN HE WITKOWSKI APPALLET | JAMES BARNWELL | CHRISTOPHER WERNER
BRIANNA HICKSBERGER | JESSICA HILL | BARBARA TYRRELL | PAUL WINKELBAUER

**City of Greensboro:
H2O Exhibit at the
Green Hill Art Center**

A multi-dimensional, large scale art show that reflects on how human activities affect a precious and limited natural resource.



**City of Hendersonville:
Stormwater Stroll**

A series of stormwater projects in Patton Park with educational signage to engage + teach park visitors about water quality.

City of Hendersonville

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- Two rainwater cisterns that provide water to wash vehicles + equipment.
- A series of rain gardens that with pollinator plants.
- Permeable pavement near the park's entrance.
- A stormwater wetland that improves the bird, pollinator, and wildlife habitat.



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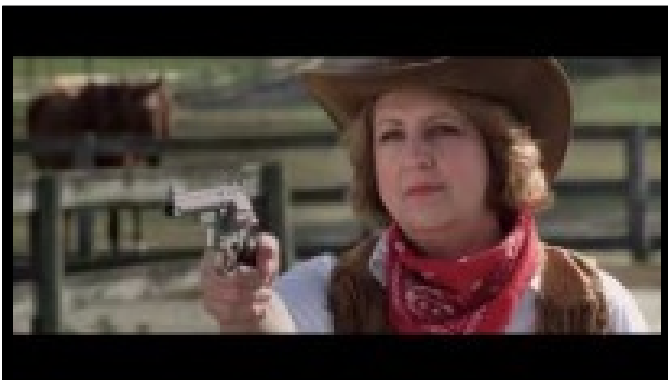
**Town of Fuquay-Varina:
You Know What Else Is
Important Video Series**

Find out what Storm Walter has to tell you about how to prevent stormwater pollution through a series of misadventures..



[Fuquay-Varina + Amazing Studios](#)






STORMWATER WON'T BE DRY IF YOU

#2 LEVERAGE TECHNOLOGY

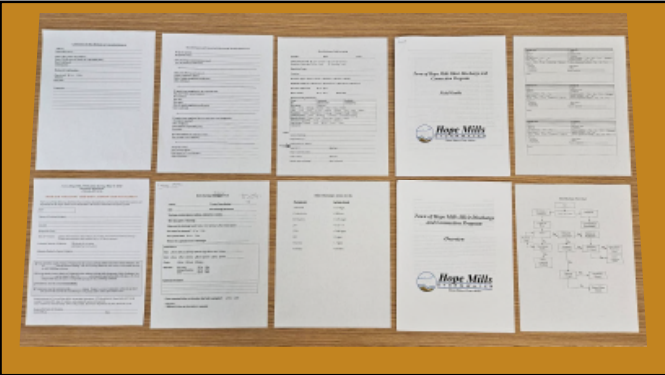


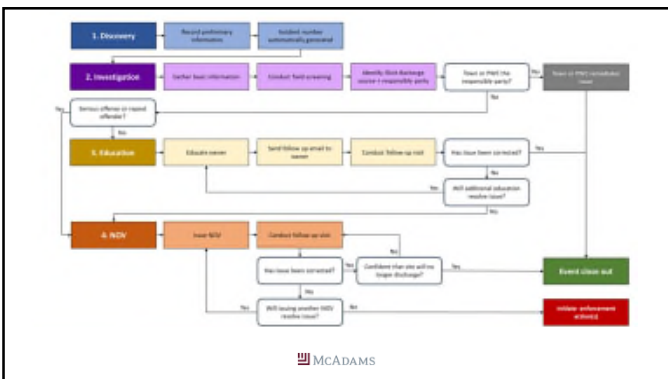


**Town of Hope Mills:
IDDE-123**

Updated from a paper to digital process – collect data on a mobile device and store it in the cloud. This stretches the Town's staff resources and is more fun to use.







IDDE Tracking Form

Discovery

Incident ID
The incident ID is automatically generated based on the date of the illicit discharge and the location name.

Date illicit discharge was reported*

Discharge description:

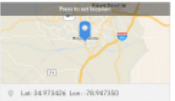
How was the illicit discharge discovered?

Reported by citizen

Location Information

Location Name*
Please limit names to one or two words.
Bloc 83

Discharge Location*



Lat: 34.973426 Lon: -76.947350

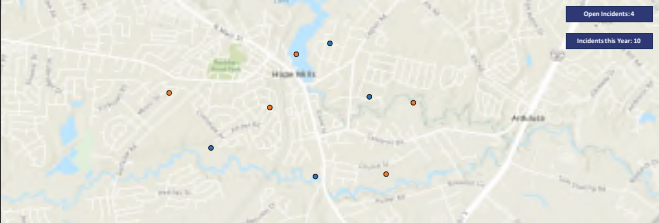
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Download for ArcGIS Server (12)

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Town of Hope Mills IDDE Incident Tracker



Open Incidents: 4
Incidents this Year: 10

Incident ID	Date Opened	Date Closed	Responsible Party	Current Phase	View Data	Open Form	Upload Document
20230506-Walmart	05/06/2023	-	Property Owner	Investigation	Link	Link	Upload
20230213-Highview McDonalds	02/13/2023	-	Property Owner	Owner Education	Link	Link	Upload
20221209-2119 Long Street	12/09/2022	04/12/2023	PWC	Closed	Link	Link	Upload



Stormwater Control Measure Saver

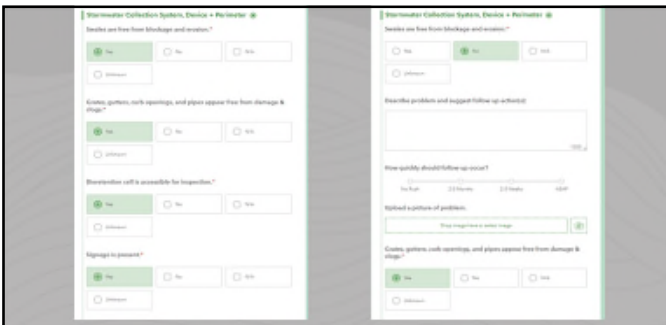
Instead of writing a report, complete a survey to summarize the year's progress. Going forward, update




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STORMWATER WON'T BE DRY IF YOU

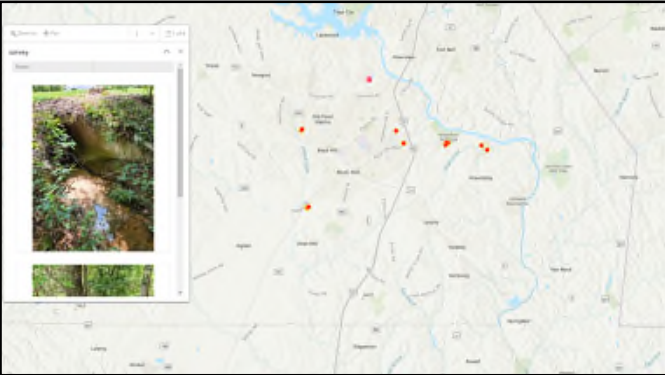
#3 CREATE COMMUNICATION CHANNELS


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QR Codes:
Not just for viewing the menu!
Can be used to interact with stakeholders.






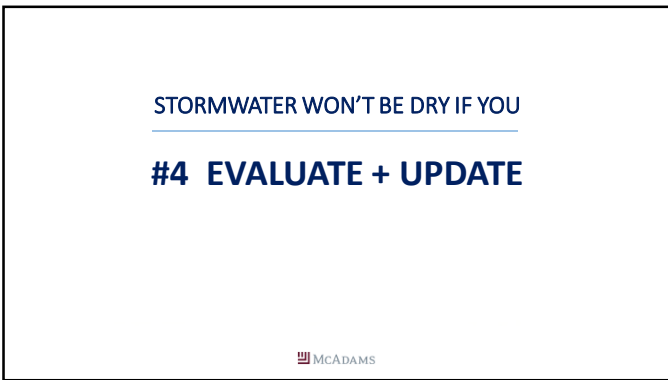


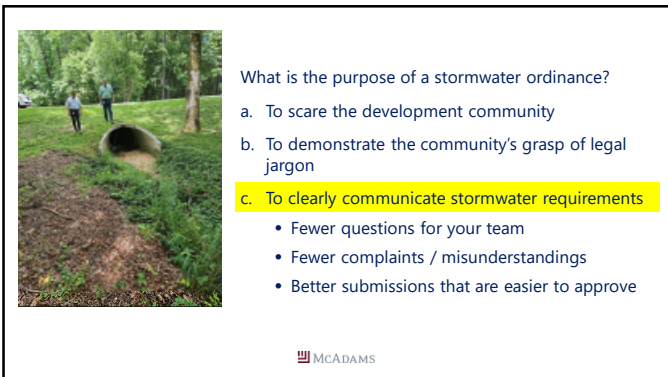
The removal of buffer vegetation provides small bank stabilization with stream access.


Story Maps give citizens an interactive experience











TIPS ON CLEAR ORDINANCES

Overall: Outline + organize if needed

Content: Resolve different requirements when zoning + state rules overlap to create a "one-stop shop."

Details: Clear titles for each item

Plus: Don't forget the administrative manual

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OUTLINE + ORGANIZE

OLD:	NEW:
Sec. 14-150: Definitions	Sec. 14-150: Definitions
Sec. 14-151: Purpose	Sec. 14-151: Purpose + Administration
Sec. 14-152: General Provisions	Sec. 14-152: Applicability + Exemptions
Sec. 14-153: Enforcement + Administration	Sec. 14-153: General SW Stormwater Management
Sec. 14-154: Exemptions	Sec. 14-154: Falls Lake Basin
Sec. 14-155: Design + Performance Stds	Sec. 14-155: Neuse Basin Outside of Falls Lake Watershed
Sec. 14-156: Plan Submission procedures	Sec. 14-156: Jordan Lake Basin
Sec. 14-157: Permit Requirements	Sec. 14-157: Requirements for Design of SCMs
Sec. 14-158: As-built Plans + Certification	Sec. 14-158: Approval of Stormwater CDs
	Sec. 14-159: Operational Stormwater Permit

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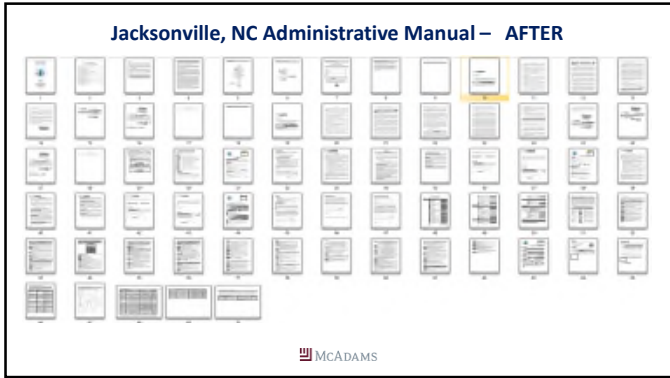
Sec. 82-92. Establishment of application requirements, schedule, and fees.

(a) **Application contents and form.** The stormwater administrator shall establish requirements for the content and form of all applications and shall amend and update those requirements from time to time.

(b) **Submission schedule.** The stormwater administrator shall establish a submission schedule, deadlines, and submittal checklist for applications.

(c) **Permit review fees.** The Town board of commissioners shall establish permit review fees as well as policies regarding refund of any fees upon withdrawal of an application and may amend and update the fees and policies from time to time.

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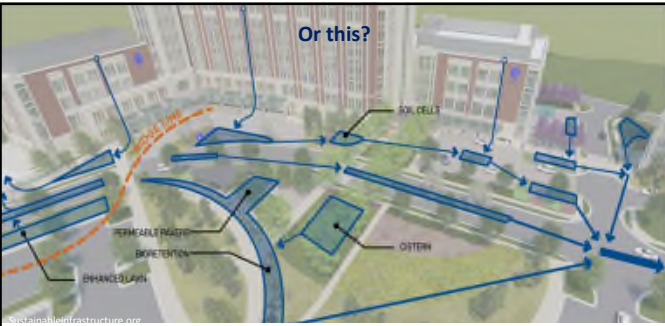


What about this?



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Or this?

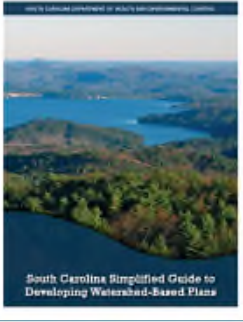


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STORMWATER WON'T BE DRY IF YOU


#5 FOCUS ON THE FUTURE

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WATERSHED PLANS IN SC


- 12-digit HUCs
- About 20 pages
- Includes maps, tables, photos
- Intended to be used for several decades but needs to be regularly updated
- Opportunity to educate the community about WQ issues and get them involved in the solutions.
- Also opens options for grant funding

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THE NINE ELEMENTS OF A WATERSHED PLAN

1. Identify pollutant sources + causes
2. Estimate load reductions from management measures
3. Management measures needed to address pollutants
4. Identify funding + technical assistance needs
5. Outreach strategy
6. Implementation timeline
7. Milestones to keep progress on track
8. Criteria to determine if pollutants are being reduced
9. Monitoring strategy to determine effectiveness of plan


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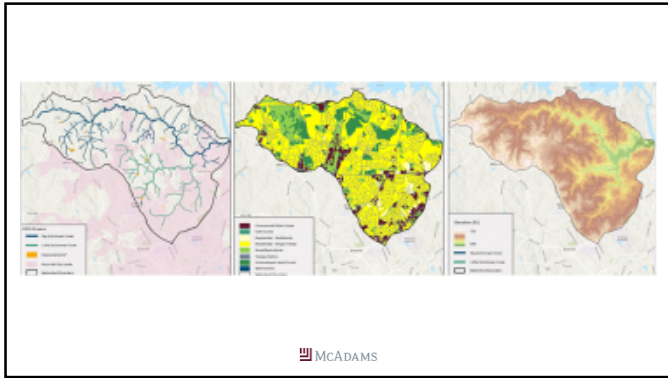


York County, SC Watershed Plans

Study the reasons why waters are impaired and work with stakeholders to develop workable solutions.

Also become eligible for grant monies!

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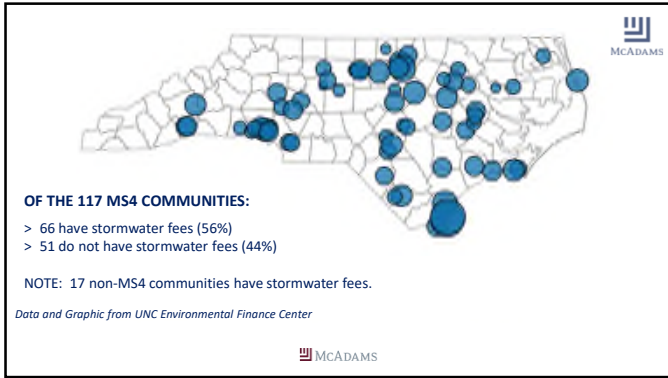
The screenshot shows a public input questionnaire. The first section asks 'What activities do you engage in around water?' with checkboxes for fishing, boating, swimming, boating, fishing, and other. The second section asks 'In the past five years, how has water pollution and flooding changed in your watershed?' with a grid for 'Cleaner', 'Worse', 'Same', and 'Don't know' for 'Water quality', 'Flood frequency', and 'Flood damage'. The third section asks 'How concerned are you by the following water pollution?' with a grid for 'Very concerned', 'Somewhat concerned', 'Not concerned', and 'Don't know' for 'Harmful water runoff from construction sites', 'Chemicals from household uses', 'Fertilizer runoff from lawns', 'Automated garages/laundry of pollutants', and 'Septic system maintenance issues'. The fourth section asks 'How effective are the following methods of public communication?' with a grid for 'Very effective', 'Somewhat effective', 'Not effective', and 'Don't know' for 'Mailings and newsletters', 'Social media websites', 'Posting signs around water or watershed boundaries', and 'Conducting water treatments'. The MCADAMS logo is at the bottom center.

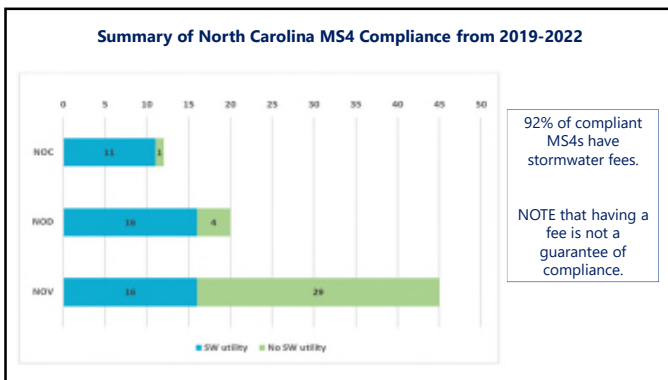
The top photo shows a residential yard with a large area of standing water and debris. The bottom photo shows a car partially submerged in a flooded street next to a house.

WHY HAVE A STORMWATER UTILITY?

With a dedicated stormwater fee, the money is there to maintain, repair and replace stormwater infrastructure on a proactive basis, rather than waiting till flooding causes expensive damage or impacts public safety.

The MCADAMS logo is at the bottom center.





STORMWATER WON'T BE DRY IF YOU

- #1 INSPIRE + ENTERTAIN
- #2 LEVERAGE TECHNOLOGY
- #3 CHANNEL YOUR COMMUNICATION
- #4 EVALUATE + UPDATE
- #5 FOCUS ON THE FUTURE

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QUESTIONS?

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