

2026 NEW JERSEY

SUSTAINABILITY

SUMMIT



Navigating New Jersey's MS4 rules: What Green Teams Need to Know

May 15, 2026

Bell Works • Holmdel, New Jersey



Agenda

1. New focus in MS4 Permit
2. Deadlines
3. Your role
4. Sustainable Jersey Actions
5. Technical Support
6. Case Studies
7. Funding





Panel Speakers



• **Anne Heasley**



• **Matt Leconey**



• **Michael Pisauro**



• **Dan Van Abs**



Session Housekeeping

- Session presentation will be posted on the Sustainable Jersey website – events page; past events
- Please hold your questions to the end.

The screenshot shows the Sustainable Jersey website interface. At the top, there is a dark green navigation bar with social media icons (Facebook, Twitter, Instagram, LinkedIn, YouTube) on the left and a menu with links for ABOUT, NEWS, SUPPORT US, CONTACT US, HOME, a search icon, and buttons for Register and Sign in on the right. Below this is a light green header section containing the Sustainable Jersey logo on the left and a horizontal menu with links for Certification, Actions, Grants & Technical Assistance, Events, Resources, and Get Involved. The main content area features a left sidebar with a list of links: Data Center, Publications, Green Team Resources, Presentations (with sub-links for NJLM Conference, Sustainability Summit, Trainings, and Webinars), Purchasing Center, and New Jersey Community Solar Project Finder. The main content area on the right has a section titled "Sustainability Summit" with a brief description. Below that is a section titled "2025 Sustainability Summit Presentations" with a paragraph of text and a link to view session descriptions. At the bottom, there are two sections: "Sustainability Sessions 1" with a bulleted list of links, and "Sustainability Sessions 2" with another bulleted list of links.



What is MS4?

Municipal

Separate

Storm

Sewer

System



What is the MS4 Permit ?

- New Jersey Pollutant Discharge Elimination System (NJPDES) permit issued in accordance with N.J.A.C. 7:14A. The Tier A Municipal Stormwater General Permit authorizes the discharge of stormwater from small municipal separate storm sewer systems (MS4).

New Jersey Department of Environmental Protection
 Mail Code - 501-02A
 Bureau of NJPDES Stormwater Permitting and Water Quality Management
 Water Pollution Management Element
 PO Box 420
 Trenton, NJ 08625-0420
 Phone: (609) 633-7021
 Fax: (609) 777-0432

AUTHORIZATION TO DISCHARGE
 R9 - MS4 - Tier A Municipal Stormwater (GP)

Facility Name: PRINCETON **PLID #:** 208654

Facility Address: 400 WITHERSPOON ST
 PRINCETON, NJ 08540-3284 **NJPDES #:** NJG0152064

Type of Activity: Stormwater Discharge GPA Modification
Owner: PRINCETON
 400 WITHERSPOON ST
 PRINCETON, NJ 08540-3284

Operating Entity: PRINCETON
 400 WITHERSPOON ST
 PRINCETON, NJ 08540-3284

<u>Issuance Date:</u>	<u>Original Effective Date of Permit Authorization:</u>	<u>Effective Date of Permit Modification:</u>	<u>Expiration Date:</u>
11/01/2023	01/01/2023	11/01/2023	12/31/2027

Your Request for Authorization under NJPDES General Permit No. NJ0141852 has been approved by the New Jersey Department of Environmental Protection.

Gabriel Mahon **Date:** 11/01/2023
 Gabriel Mahon, Chief
 Bureau of NJPDES Stormwater Permitting and Water Quality Management
 New Jersey Department of Environmental Protection



New focus: Watersheds

Stormwater: Where It Flows, Everything Goes

When it rains, snows, or slets, water hits hard surfaces and takes anything on that surface with it, through drains, pipes, and ditches to local rivers, lakes, and streams.

Cigarette butts in the gutter become a real problem when they reach wildlife.

Trash left on sidewalks gets swept into sewers and contaminates stormwater.

Pet waste washes into pipes and pollutes parks and recreation areas downstream.

Oil and grease leaked from cars washes down drains and into waterways.

Lawn fertilizer and pesticides can wash across pavement and down drains, taking toxics with them.

Car washing chemicals can harm fish and animals.

Where Stormwater Flows, Everything Goes





What's in the MS4 permit?

- Section A: Stormwater Management Program
- Section B: Public Involvement
- Section C: Local Public Education
- Section D: Construction Site Runoff
- Section E: Post Construction Stormwater Management in New Development and Redevelopment
- Section F: Pollution Prevention/Good Housekeeping for Municipal Operators
- Section G: MS 4 Mapping, Scouring, and Illicit Discharge Detection and Elimination
- Section H: Watershed Improvement Plan
- Section I: Additional Measures and Optional Measures
- Section J: Recordkeeping
- Section K: Annual Reports Certifications





New Jersey's MS4 Permit



New Jersey Future Municipal Primer: Understanding the New MS4 Permit



ANJEC Webinar – The Stormwater MS4 Permit: What, Why, and How



Watershed Institute Webinar - Understanding Municipal Separate Storm Sewer MS4 Requirements in NJ



Section A: Stormwater Program

- Stormwater Coordinator – every municipality
- Develop, update, implement and maintain a Stormwater Pollution Prevention Plan - SPPP
 - Update – due January 1, 2024.
 - Annual report (May 1) – compliance with SPPP and MS4 permit
- Stormwater Management Rules –
 - a Municipal Stormwater Management Plan – MSWMP
 - MS4 and MLUL - MSWMP is part of the municipal master plan;
 - SW Management Control Ordinance

Stormwater Pollution Prevention Plan

*Borough of Metuchen
Middlesex County, New Jersey
NJPDES General Permit #NJG0153389*

*Annual Review Date: April 11, 2024
Stormwater Program Coordinator: Brian J. Lewis
Superintendent Public Works*



Section B: Public Involvement

EMERGENCY ALERT Road Closure Alert
 Create a Website Account - Manage notification subscriptions, save form progress and more. Website Sign In

NEW JERSEY WOODBRIDGE TOWNSHIP Government Discover Woodbridge Planning & Development Services & Forms How Do I...
 TEN SMALL TOWNS, ONE GREAT COMMUNITY Search...

- Active Construction Projects +
- Floodplain Management +
- FEMA Flood Zones (FIRM Map Panels)
- Stormwater Management
- Maps +
- Road Opening Permit & Construction Details
- Sanitary Sewer
- Floodplain Development Permit Application
- Green Infrastructure
- Thornall Street Culvert Replacement
- Township GIS Viewer

Home > Government > Departments > Division of Engineering > Stormwater Management

Stormwater Management

Regulated by the State & Pollution Permit

Woodbridge Township operates and maintains its stormwater collection system in accordance with the rules and regulations promulgated by the New Jersey Department of Environmental Protection and in accordance with the terms and conditions of a New Jersey Pollution Discharge Elimination System Permit. This webpage has been created in order to provide the public access to information associated with the Township's Stormwater Management Program.



Stormwater Literature

- [Stormwater Management Plan](#)
- [Stormwater Pollution Prevention Plan \(PDF\)](#)
- [Stormwater Management \(PDF\)](#)
- [Car Wash Brochure \(PDF\)](#)
- [Clean Water Rainier Booklet \(PDF\)](#)
- [Fertilizing Brochure \(PDF\)](#)
- [Ground Water Brochure \(PDF\)](#)
- [Motor Oil Brochure \(PDF\)](#)
- [Nonpoint Source Pollution Brochure \(PDF\)](#)
- [Pet Waste Brochure \(PDF\)](#)
- [Pick Up After Your Pet Brochure \(PDF\)](#)
- [Pond and Wetlands Maintenance Guide \(PDF\)](#)
- [Solutions to Stormwater Pollution \(PDF\)](#)
- [Stormwater Brochure \(PDF\)](#)
- [Urbanization Brochure \(PDF\)](#)
- [What's a Watershed? \(PDF\)](#)
- [Stormwater Public Education Cartoons \(PDF\)](#)
- [Woodbridge Spill Prevention Control and Countermeasure \(PDF\)](#)
- [Stormwater Public Education Cartoons \(PDF\)](#)
- [Woodbridge Spill Prevention Control and Countermeasure Pumping Station \(PDF\)](#)
- [How To Prevent Stormwater Pollution Pamphlet \(PDF\)](#)
- [Stormwater Discharge General Permit Authorization Renewal \(PDF\)](#)
- [Tier A Municipal Stormwater General Permit](#)
- [Land Use Ordinance - Chapter 150](#)
- [Water Pollution Control Regulations - Chapter 23](#)
- [Watershed Master Plan](#)
- [Post-Construction Stormwater Management in New Development and Redevelopment](#)

Stormwater Quick Links

- [2019 Stormwater Pollution Prevention Plan \(PDF\)](#)
- [Animal Control Ordinance - Chapter 11](#)
- [Areas of Special Flood Hazard Ordinance - Chapter 150 B2](#)
- [Clean Water New Jersey](#)
- [Environmental Commission](#)
- [Flood Damage Prevention Ordinance - Chapter 22](#)
- [GIS Information Viewer: To View the Township Stormwater Network](#)
- [Municipal Stormwater Control Ordinance](#)
- [New Jersey Department of Environmental Protection](#)
- [NJDEP Bureau of Nonpoint Pollution Control Supplemental Education Information](#)
- [Property Maintenance Ordinance - Chapter 18](#)
- [Sewers Ordinance - Chapter 28](#)
- [Solid Waste Management Ordinance - Chapter 27](#)
- [Stormwater: Best Practices for Homeowners](#)

[View All Links](#)

- Webpage – February 1, 2024



Section C: Local Public Education & Outreach

- Implement a public education and outreach program
- Annual requirement; based on points system based on audience (general public, school/youth, targeted audience – e.g. location) and they type of program (social media, print or radio, signs at facilities, presentation, workshop, storm drain labeling, clean-up, etc.
- Minimum requirements





Section E: Post Construction Stormwater Management in New Development and Redevelopment

NEW JERSEY FUTURE Working for Smart Growth: More Livable Places and Open Spaces

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NEW JERSEY FUTURE BLOG

Want to Get Ahead of Flooding? Use NJF's New Tool, the Enhanced Model Stormwater Ordinance

February 9th, 2021 by Andrew Tabas

Recommend | Tweet | Share

Stormy days ahead call for strong municipal stormwater ordinances. Climate change is bringing increased rainfall and flooding to New Jersey which, if ignored, will damage property, threaten public health, and pollute waterways. Municipal governments' responses to this challenge will define the quality of life in their towns for generations. Fortunately, municipalities have a strong device to promote responsible and resilient development: stormwater ordinances. The stormwater ordinance is key to implementing public and private green infrastructure, a group of practices that mimic the natural water cycle to capture rainwater where it falls. Municipal leaders should use New Jersey Future's new tool to update their town's stormwater ordinance as soon as possible to increase green infrastructure and reduce flood risk.



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Your email address:

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New Jersey Future in the News 2021

- 06/13/21: Report details surge in warehouse construction as residents fight sprawl (NJSpotlight News)
- 05/04/2021: Rest Easy When It Rains (NJ Municipalities)
- 04/23/2021: NJ makes pitch for massive shifts in statewide response to climate change (NJSpotlight News)
- 04/21/2021: Sweeney: Warehouse projects need regional approval (NJSpotlight News)
- 04/20/2021: Surprise withdrawal of warehouse plan fuels hopes of 'sprawl' opponents (NJSpotlight News)

See all *In the News* items

Upcoming Events

- No events.

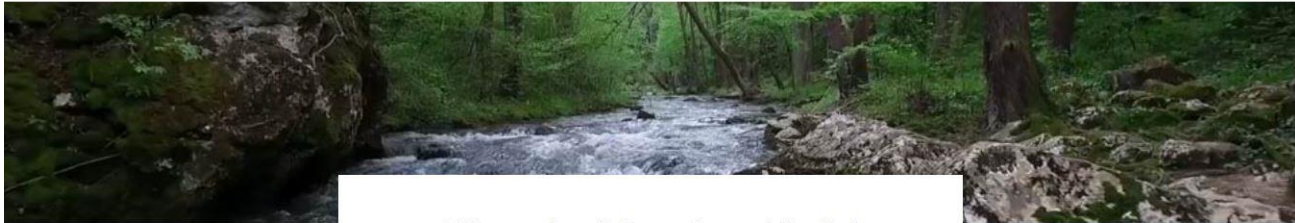
Event Calendar

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Watershed Develops Model Stormwater Ordinance for NJ Towns

JULY 28TH, 2020

The Watershed Institute has developed a model ordinance to help municipalities combat the perils of polluted stormwater runoff and comply with new requirements from the New Jersey Department of Environmental Protection (NJDEP). The new model ordinance protects people and waterways and is stronger than the baseline model released by the state earlier this year.





Section F: Good Housekeeping

- **Community Wide Ordinances:** including pet waste, wildlife feeding, litter control, improper waste disposal, yard waste, private inlet retrofitting; privately-owned salt storage; and tree removal/replacement – *January 1, 2024*
- **Community Wide Measures:** street sweeping, storm drain labeling and retrofits; herbicide management; excessive de-icing materials, roadside vegetation management and erosion control
- **Inspections and Maintenance** of Stormwater Facilities (municipal owned/private)
- **Municipal Maintenance Yards** – sources of contamination
- **Training** – SPC; other employees, design reviewers; municipal board and governing body



Section G: MS4 Mapping, stream scouring and illicit discharge detection and elimination

- Mapping – storm drain inlets; interconnections; manholes, conveyance, pump stations outfalls; groundwater discharge points – **January 1, 2026**
- Stream scoring - Inspect outfalls, once every 5 years
- Identify and eliminate illicit discharges.



[DEP Reporting Templates](#)



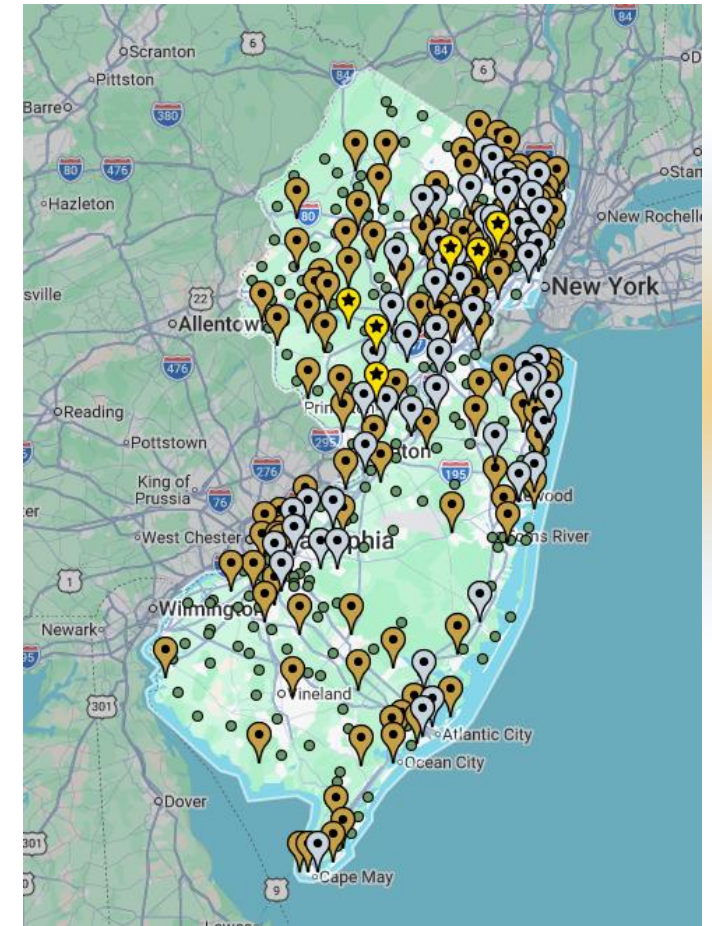
Section H: Watershed Improvement Plan

- Inventory report – *January 1, 2026*
- Watershed Assessment with outreach –
January 1, 2027
- Watershed Improvement Plan with outreach –
December 1, 2027



Sustainable Jersey Actions

- Green Infrastructure Planning
- Green Infrastructure Implementation
- Comprehensive Climate Change-Related Hazard Vulnerability Assessment
- Enhanced Stormwater Management Control Ordinance
- Tree Protection and Replacement Ordinance
- Litter Prevention Education & Compliance – * new *
- Winter Best Practices to Reduce Road Salt Impacts
- Tree Planting – * new *
- Stormwater Utility – * under development *



Watershed Improvement Plan Guidance & Resources

2026 New Jersey Sustainability Summit

May 15, 2026

Rutgers Cooperative Extension Water Resources Program
MS4 Technical Assistance Program

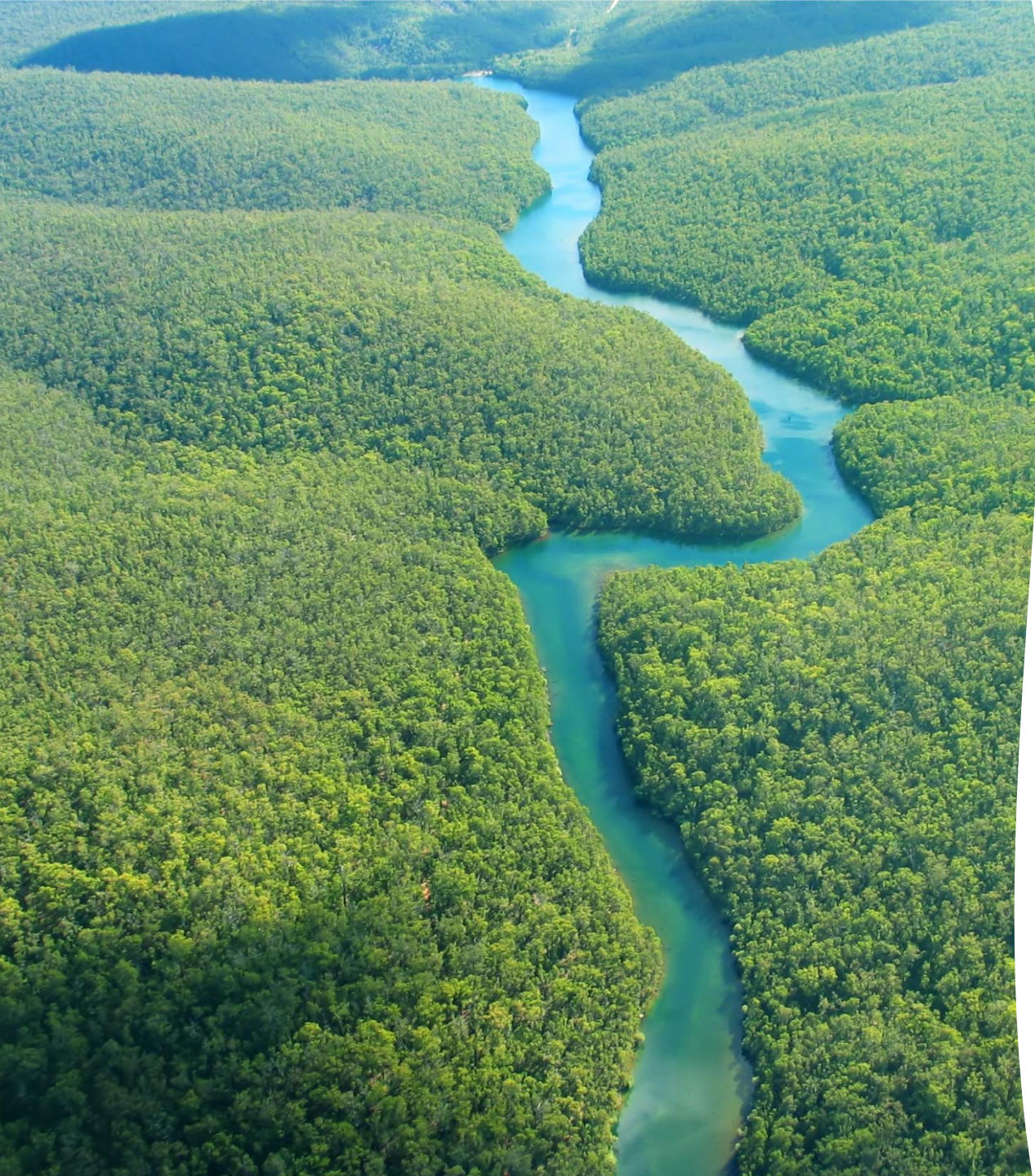
Matthew Leconey



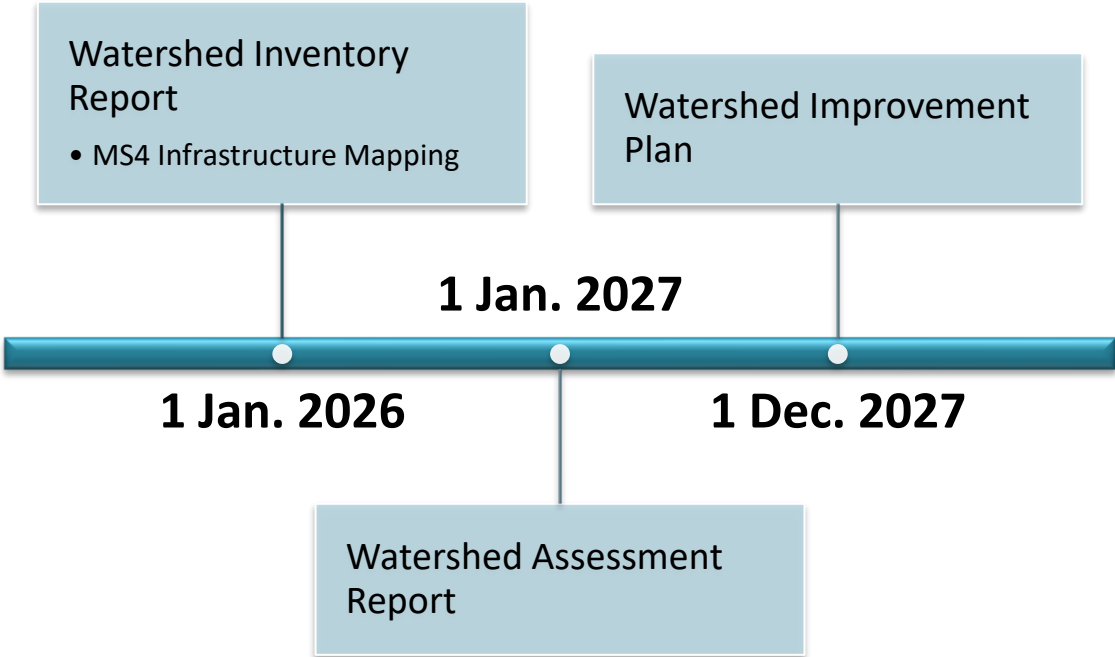
Water Resources Program



Our mission is to identify and address community water resources issues using sustainable and practical science-based solutions.



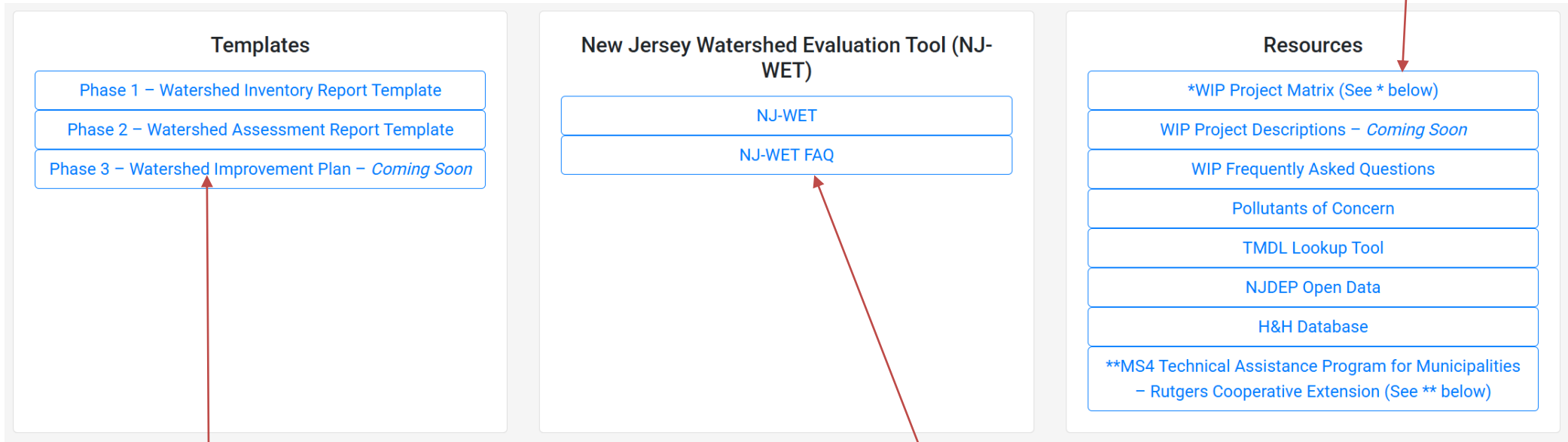
Watershed Improvement Plan



Getting Started: Key Resources

- [NJDEP's WIP page](#)

See next slide



DRAFT WIR & WAR Available

[Useful Tool](#) for general reference

Key Resources

Resources

[*WIP Project Matrix \(See * below\)](#)

[WIP Project Descriptions – *Coming Soon*](#)

[WIP Frequently Asked Questions](#)

[Pollutants of Concern](#)

[TMDL Lookup Tool](#)

[NJDEP Open Data](#)

[H&H Database](#)

[**MS4 Technical Assistance Program for Municipalities – Rutgers Cooperative Extension \(See ** below\)](#)

[WIP Project Matrix](#)

(please submit any additional ideas to DEP for consideration)

[WIP FAQ](#) (provided good clarifications)

[Pollutant of Concern descriptions](#)

[TMDL Lookup Tool](#) (for actual TMDL Reports)

[Source for all state GIS datasets](#)

[Database of stormwater facilities](#)

That's us! See our website (<http://water.rutgers.edu/Projects/MS4/MS4.html>)

On RCE WRP Website

Resources:

[Detailed List of Services](#), May 15, 2025, pdf, 1 p.

[How to Prepare a Watershed Inventory Report](#), April 23, 2025, pdf, 49 pp.; [Recording](#),

[Watershed Assessment Report Guidance](#), February 25, 2026, pdf, 67 pp.; [Recording](#), 1

[NJ Municipalities Documents Viewer](#), web map which allows viewers to view impervious cover reduction action plans (RAPs), green infrastructure feasibility studies for New Jersey municipalities by the RCE Water Resources Program

[RCE Water Resources Program Green Infrastructure Project Database](#), web map which shows green infrastructure projects implemented by the RCE Water Resources Program

How we can help

WIR Webinar

WAR Webinar

ICA, RAP, Feasibility Studies
Sources of Pollution sections

Map of GI projects we've
implemented

Additional Resources

- Watershed NJ Tool (<https://watershednj.rutgers.edu/>)
- Look for past plans
 - See state approved Watershed Plans
 - WatershedNJ great way to access (Improvements-> Management and Improvement Plans -> Watershed Plans)
 - [NJGIN Data layer](#)
 - RCE WRP ICA, RAP, Feasibility Study plans (see [webmap](#))
 - Sources of Pollution section for WAR for all municipalities
 - Example report for Hamilton available upon request
- Other state/group guidance
 - Pennsylvania, Minnesota, Wisconsin, Chesapeake Bay

Phase 1 – Prepare and submit the Watershed Inventory Report (WIR)

Report shall summarize and include an electronic map of the items listed below (Due January 1, 2026)

- i. *All **stormwater outfalls** owned/operated by the permittee;*
- ii. The **drainage area** for each outfall(s);*
- iii. ~The **receiving waterbodies** of those outfalls;*
- iv. ~The **water quality classification** of all receiving waterbody segments;*
- v. *All **stormwater interconnections** from the municipality into another entities' storm or sanitary sewer system;*

* = required by MS4 Map

~ = data is available from DEP

More Mapping Requirements

- vi. The **drainage area** for each **interconnection** into another entities' storm or sanitary sewer system;
- vii. *All **stormwater connection points** into the municipality from another entities' storm sewer system;
- viii. *All **storm drain inlets** owned/operated by the permittee;
- ix. ~Area associated with each **TMDL** for waters that lie within or bordering the municipality;
- x. ~Area associated with each **water quality impairment** for waters that lie within or bordering the municipality;

* = required by MS4 Map

~ = data is available from DEP

More Mapping Requirements

xi. ~Overburdened communities;

xii. ~Impervious areas; and

xiii. The location and ownership of all **stormwater outfalls** and **basins/infrastructure not owned/operated** by the permittee.

* = required by MS4 Map

~ = data is available from DEP

Phase 2 –Watershed Assessment Report

Report shall summarize and include an electronic map of the items listed below (Due January 1, 2027)

- i. An assessment of **potential water quality improvement projects** by sub-watershed and parameter
- ii. An estimate of the **percent reduction in loading of the TMDL/impaired parameters** due to project(s) in i. above
- iii. A summary of **feedback from public information** sessions
- iv. An **estimate of funding needs** for each project, and identification of potential funding sources, including the New Jersey Water Bank (NJWB); the formation of an SWU, using 319 grants, FEMA BRIC grants
- v. An estimate of an **implementation schedule**

Recommended Sections

Rec: = Recommended

Rq: = Required

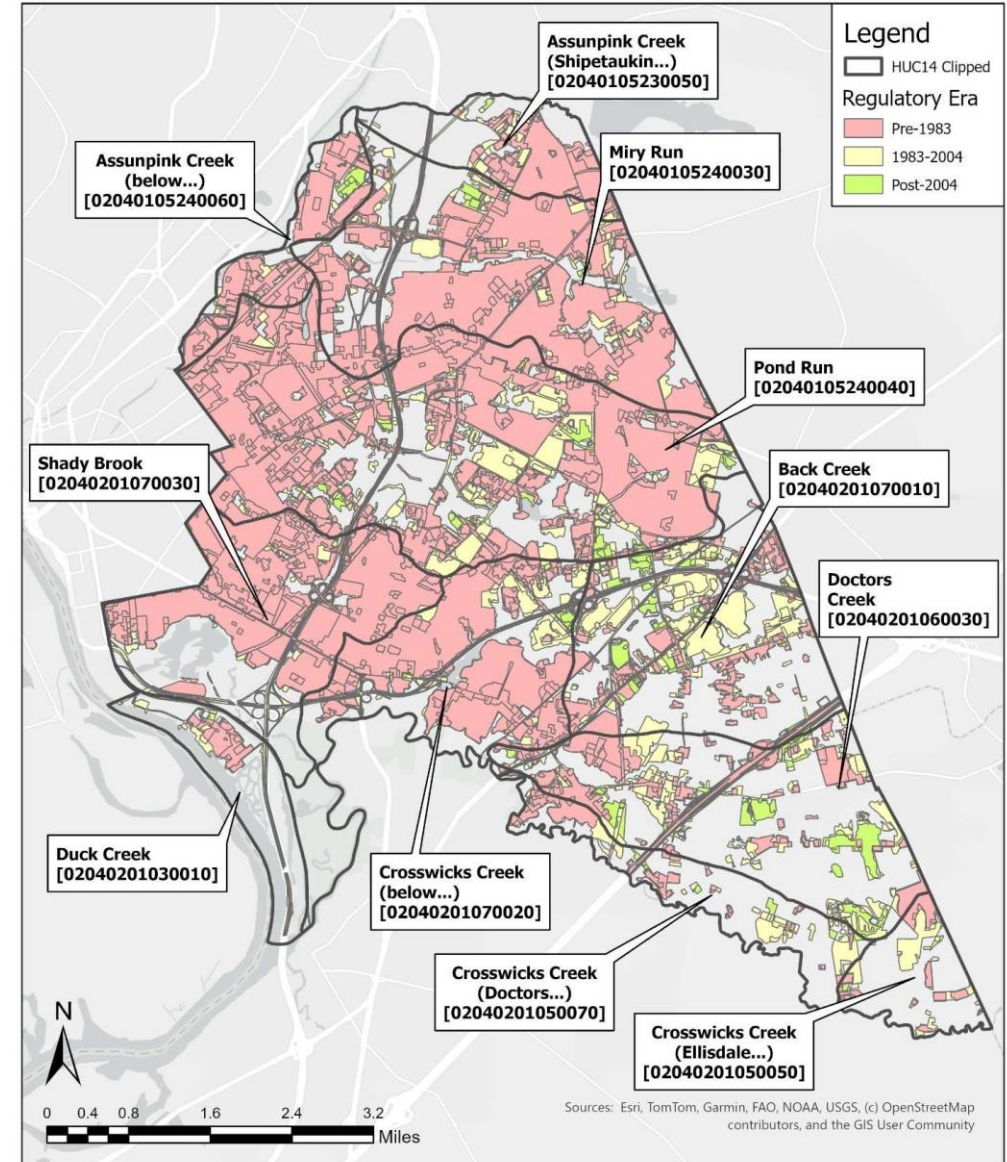
- Existing Water Quality Problems (Rec)
- Sources of Problems (Rec)
- Loading Analysis & Load Reduction Targets (Rec)
- Existing Management (Rec)
- Proposed Management (Rq, w/ proposed reductions)
- Potential Management Summary (Rec)
- Costs and Funding Sources (Rq)
- Schedule (Rq)
- Addressing All TMDLs and Impairments Summary (Rq)
- Public Feedback (Rq)

Accounting for Existing Management

- What has stormwater management already?

Subwatershed	HUC14	Management Status		
		None	Ok	Good
		Pre-1983	1983-2004	Post-2004
Assunpink Creek	2040105230050	79.4%	19.5%	1.1%
Miry Run	2040105240030	88.4%	10.1%	1.5%
Pond Run	2040105240040	81.4%	16.2%	2.5%
Assunpink Creek	2040105240060	89.2%	5.1%	5.7%
Duck Creek	2040201030010	35.7%	61.9%	2.4%
Crosswicks Creek	2040201050050	43.3%	54.0%	2.7%
Crosswicks Creek	2040201050070	46.8%	45.1%	8.1%
Doctors Creek	2040201060030	45.9%	33.6%	20.5%
Back Creek	2040201070010	39.7%	49.0%	11.3%
Crosswicks Creek	2040201070020	82.4%	16.4%	1.2%
Shady Brook	2040201070030	92.3%	7.4%	0.2%
Total		76.2%	19.5%	4.3%

- Compare Urban Land Use Data from 2020, 2007, and 1986 OR use existing mapped management with drainage areas



Proposed Management Projects

- Implementation of BMPs (new bioretention & retrofits)
- Street sweeping & leaf collection improvements
- Septic system maintenance/repair
 - Municipality could require septic systems to be inspected and/or pumped every 3 years or on some other interval
- Review [NJPDES Permit list](#) for dischargers to audit
- Education & outreach
 - Education materials can educate the public to reduce pollution from residential and commercial areas

Additional Ideas worth exploring

- End of Pipe solutions
 - Management at outfalls or other discharge points in the MS4 system may be effective strategies
- MTD like devices to filter large volumes of runoff
 - poor water quantity control, but may provide good WQ management
- Revised Stormwater Ordinances to improve redevelopment
- Stormwater utility w/ credits
 - incentivize business/residents to implement projects
- Monitoring/sampling built into plan to check progress at regular intervals

WIP Matrix

Projects	DO (BOD, COD)	E. Coli	Fecal Coliforr	Projects	DO (BOD, COD)	E. Coli	Fecal Coliforr
Agricultural BMPs	x ¹⁹			Bioretention Systems		x ²⁴	35% ³² , x ²
Cluster and Concentrate				Blue Roofs			
Disconnect/Distribute/Decentralize				Extended Detention Basins	x ²²		<10% ¹² , x ¹
Green Parking				Grass Swales			x ²
Housekeeping Practices/Spill Prevention and Cleanup			x ¹⁸	Green Roofs			x ²
Illicit Connection/Dumping Controls			x ⁸	Infiltration Basins/Trenches	70-90% ²¹ , x ²²		90-100% ^{8,12,32} , x ²
Improved Source Control (Street Sweeping, Pet Waste, Fertilizer, Geese Management)	x ²⁰		x ⁸	Manufactured Treatment Devices (MTDs)			
Pervious Paving			x ²	Retrofitting Basins			
Protect Sensitive and Special Value Resources and Stream Bank Restoration				Sand Filters			x ²
Public Education	x ¹⁶	x ¹⁶	x ¹⁶	Silt Fences			
Rain Gardens/Rain Barrels				Standard Constructed Wetlands	x ²²	x ²⁴	75% ³² , x ²
Street/Storm Drain Maintenance				Subsurface Gravel Wetlands			
Tree and Vegetative Planting				Vegetated Curb Extensions			
				Vegetated Filter Strips			x ²
				Wet Ponds		51% ²¹ , x ²⁴	40-90% ^{12,32} , x ^{2,8}

[Link](#): Check the footnotes for excellent references!

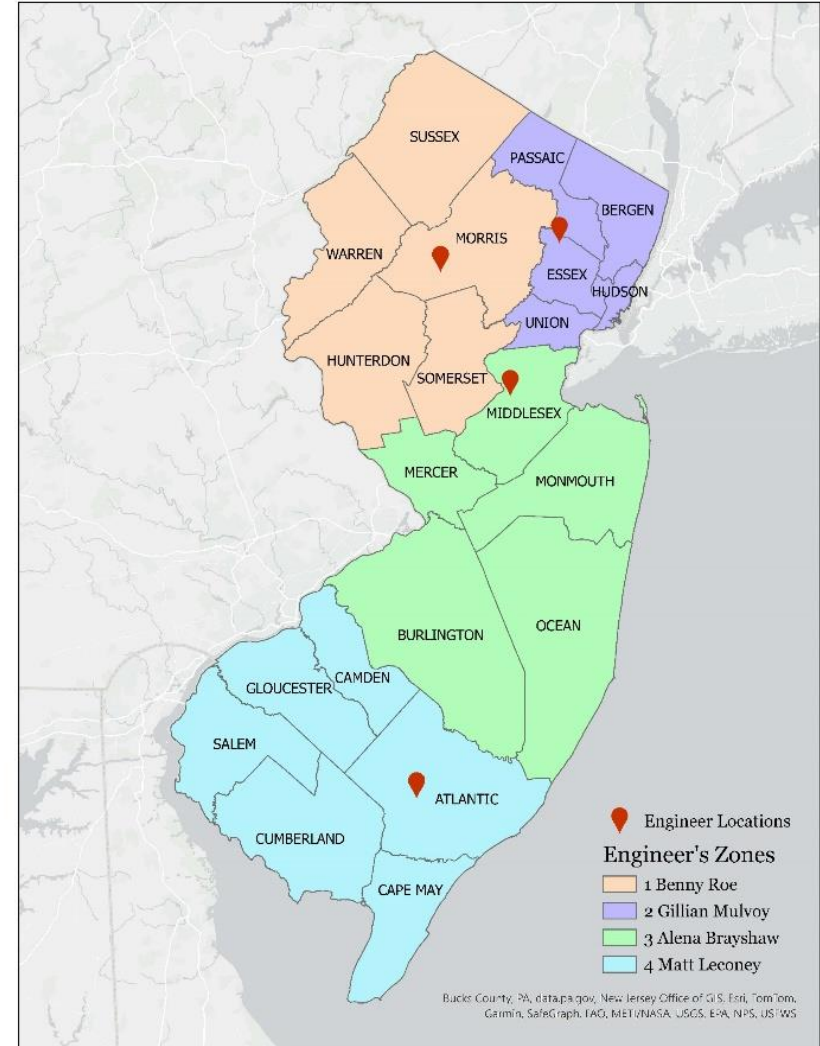
WAR vs. Final WIP

WAR	Final WIP
<ul style="list-style-type: none"> Generalized projects by subwatershed w/ load reductions 	<ul style="list-style-type: none"> <u>Specific</u> project locations w/ load reductions
<ul style="list-style-type: none"> Generalized Schedule 	<ul style="list-style-type: none"> Schedule broken down by project and year
<ul style="list-style-type: none"> Generalized Cost Breakdown by project type 	<ul style="list-style-type: none"> Costs broken down by project and year with associated funding opportunities
<ul style="list-style-type: none"> Public feedback from public sessions (should be held semiannual [2 times per year]) 	<ul style="list-style-type: none"> Public feedback from public sessions & required 60-day comment period for WAR
	<p>Additional Elements</p> <ul style="list-style-type: none"> Coordination w/ regulatory requirements Schedule of public information sessions Problems outside the jurisdiction of the permittee (agricultural or otherwise) Overburdened communities prioritized within report

How can we help?

- Three-year agreement w/ NJDEP to support MS4 communities statewide (currently ends June 2027)
- Four Regional Engineers
- Provide technical support to all municipalities

MS4 Engineer's Zones



Primary Support Tasks

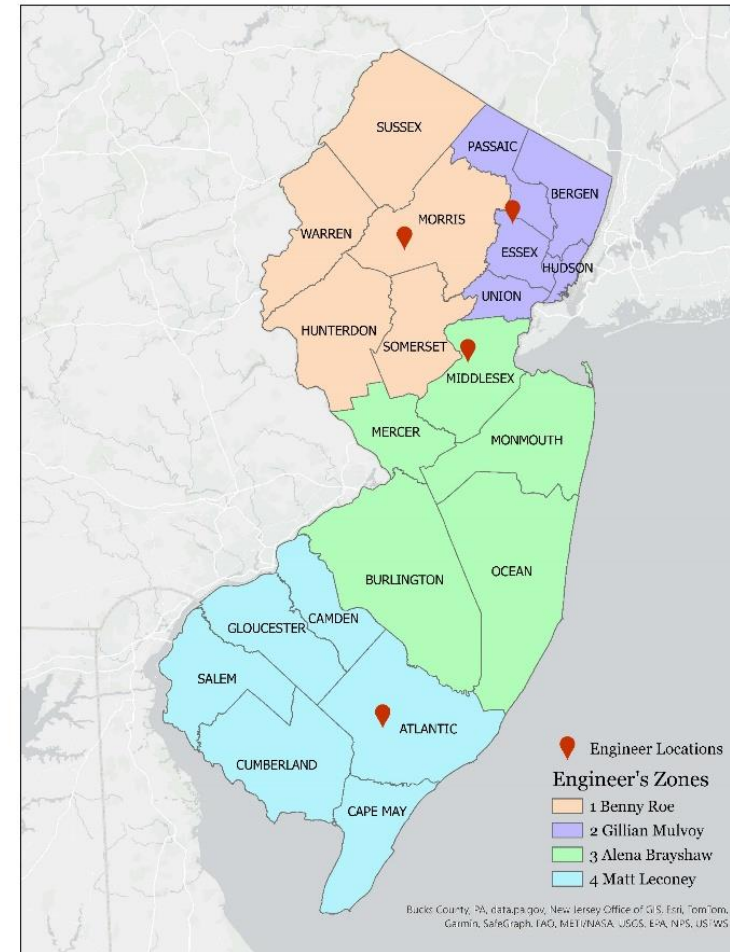
- 1. Preparation of the Watershed Inventory Report/ MS4 Infrastructure Map (Due January 1, 2026)**
- 2. Preparation of the Watershed Assessment Plan (Due January 1, 2027)**
3. Preparation of the Watershed Improvement Plan (Due December 1, 2027)
4. Inspections of stormwater management facilities, inlets, catch basins, pipes, outfall
5. Implementation of an Illicit Discharge Detection and Elimination program
6. Other MS4 Compliance
7. Other tasks upon request

Contact Us

- **General questions:** Matt
 - matthew.leconey@rutgers.edu
- **Northwest:** Benny Roe
 - benny.roe@rutgers.edu
- **Northeast:** Gillian Mulvoy
 - gillian.mulvoy@rutgers.edu
- **Central:** Alena Brayshaw
 - alena.brayshaw@rutgers.edu
- **South:** Matthew Leconey
 - matthew.leconey@rutgers.edu

<http://water.rutgers.edu/Projects/MS4/MS4.html>

MS4 Engineer's Zones



RUTGERS UNIVERSITY
Water Resources Program
New Jersey Agricultural Experiment Station



Navigating New Jersey's MS4 Rules

What Green Teams Need to Know



May 15, 2026

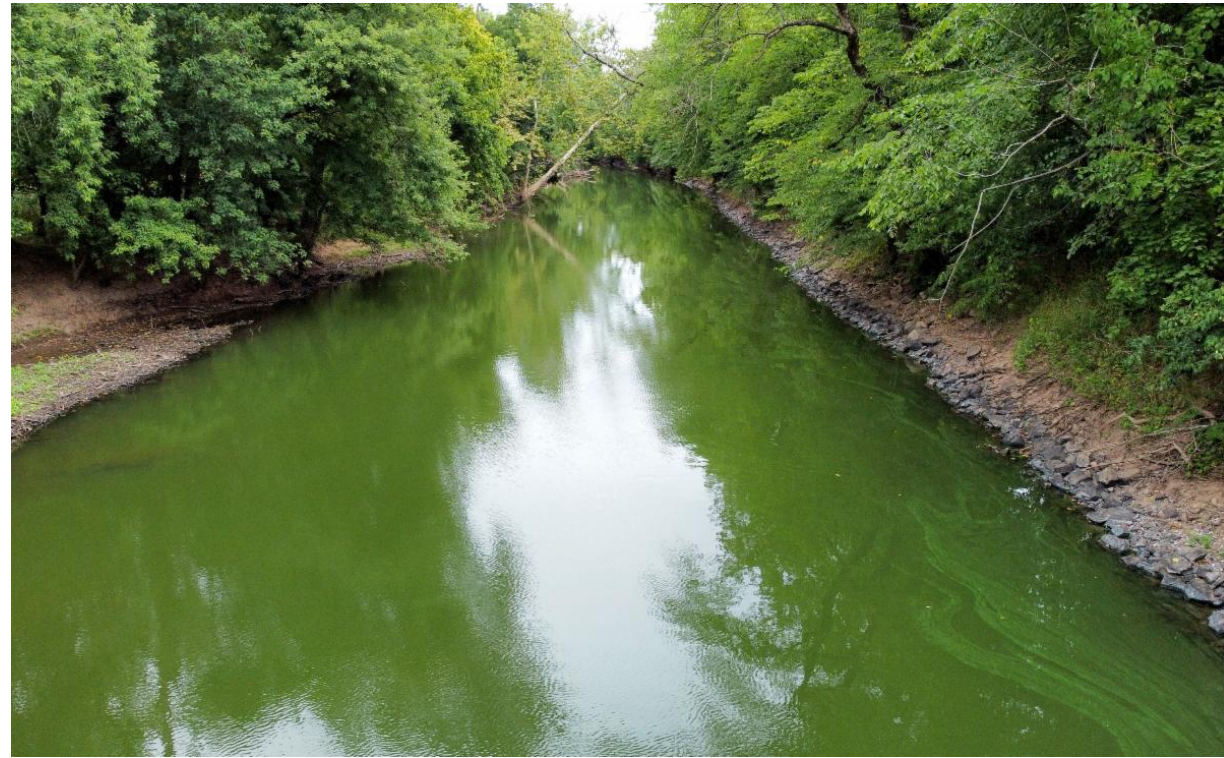
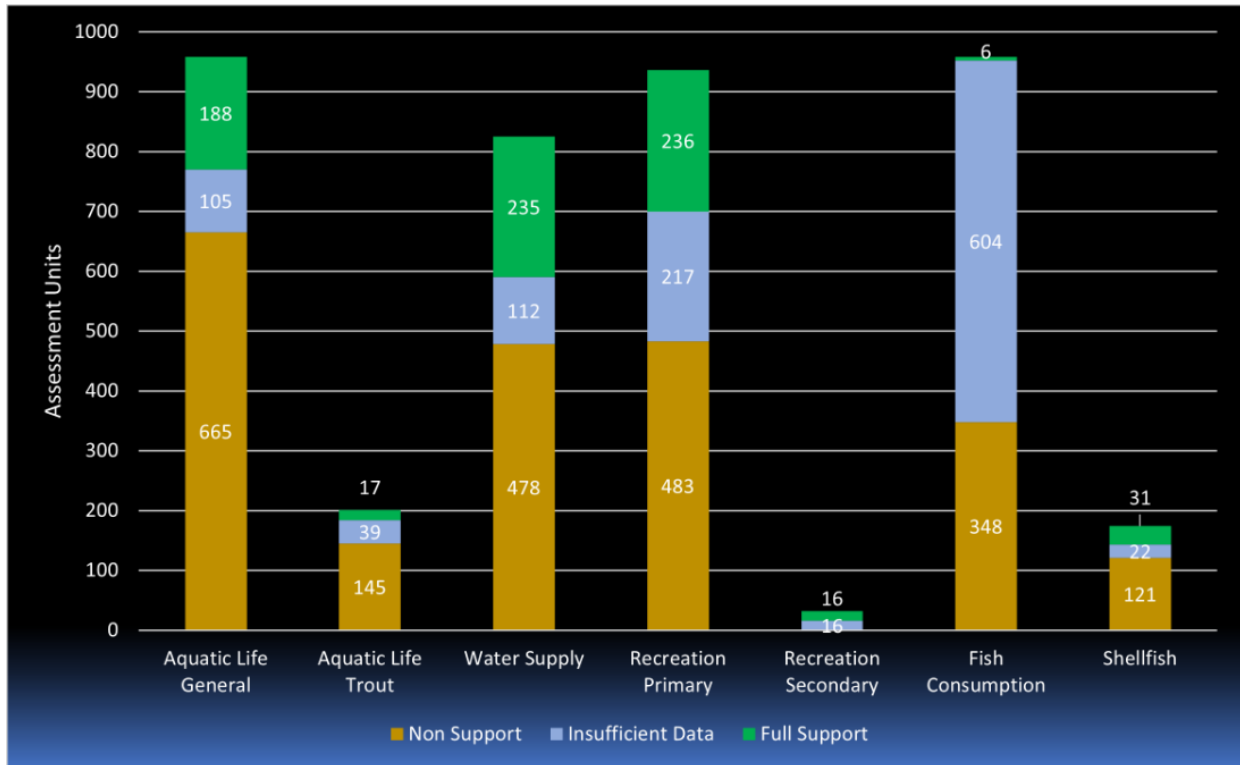
Our Mission



Keeping water clean, safe and healthy is the heart of our mission.

We work to protect and restore our water and natural environment in central New Jersey through conservation, advocacy, science and education.

Why Stormwater Management?



Why Stormwater Management?



Clean Water Act

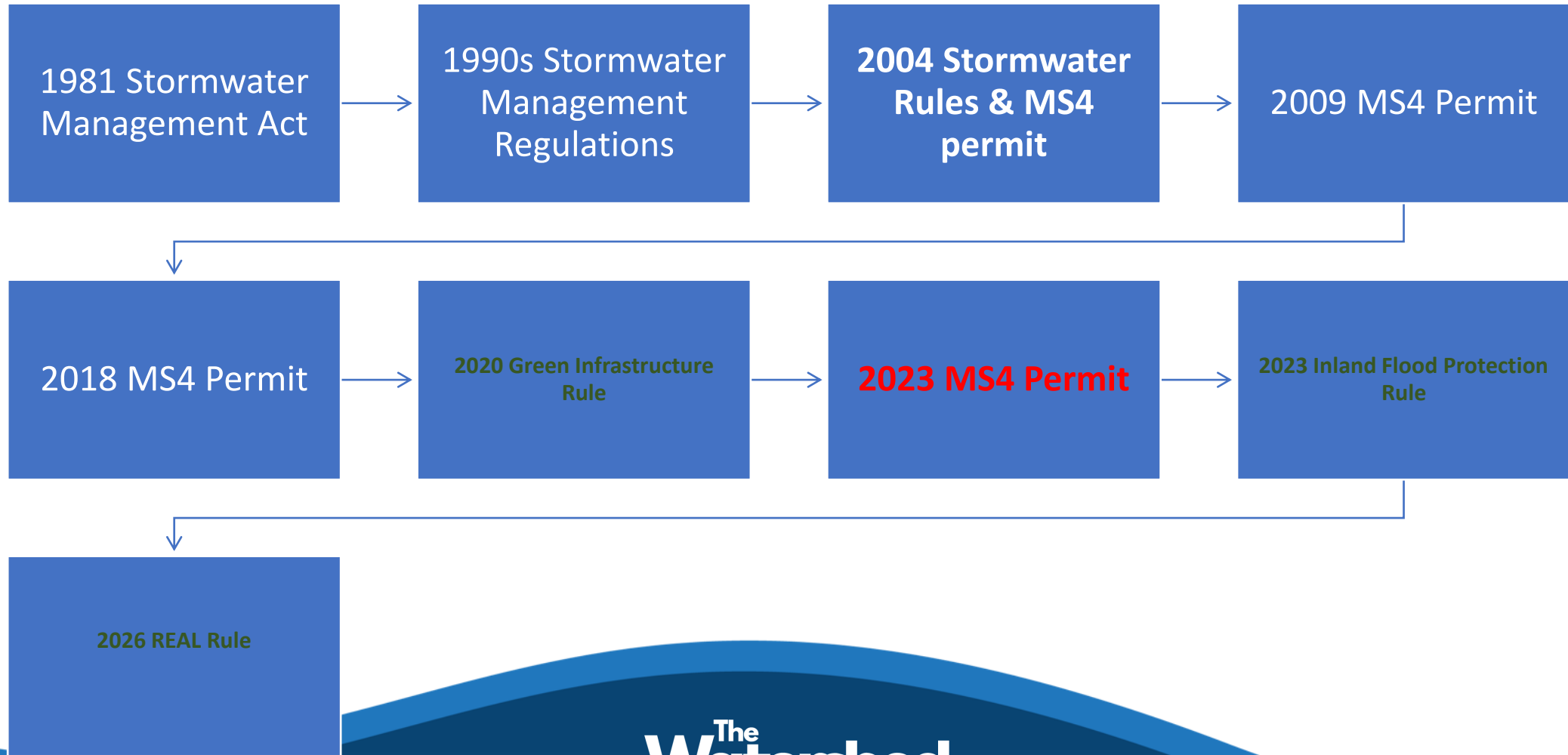
The objective of this chapter is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

It is the national goal that the discharge of pollutants into the navigable waters be eliminated by **1985**;



It is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by **July 1, 1983**;

Evolution of NJ's Stormwater Management Regime



Stormwater Management

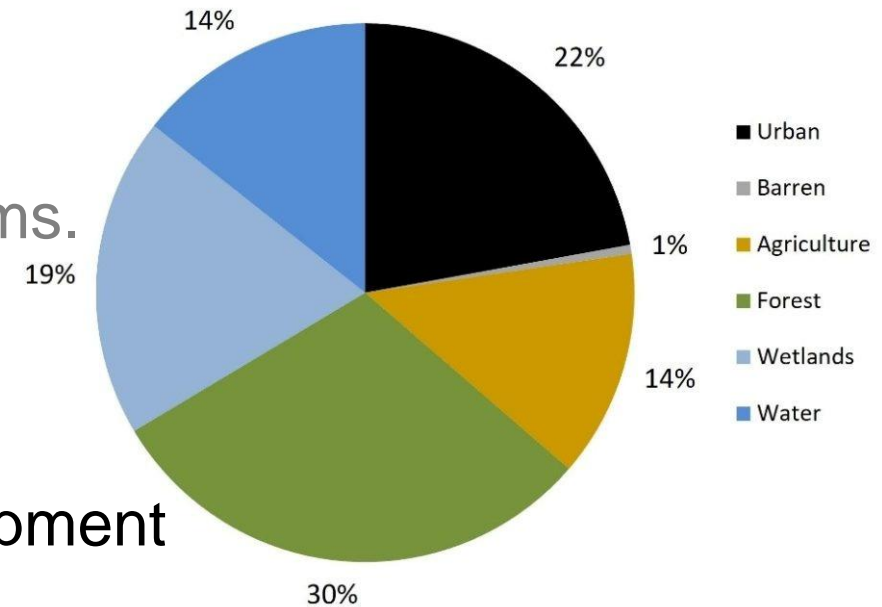


- Major Development
- Treat for: Quantity, Quality, Recharge
- Only since 1982 for flood control
- 2004 for Quantity, Quality, Recharge
- 2026 for volume control

State Stormwater Management Challenges

- Current program may be **slowing** not stopping the rate at which the stormwater problem is getting worse.
- But only large developments are addressed.
- Program not addressing existing stormwater problems.
- *Pre-2026 rules do not address volume of runoff.*
- Pre-2026 rules do not *in practice* address Redevelopment

Land-use/Land-cover estimates; 1986



New Jersey Water Pollution Issues

Declining water quality trends for nitrate, total dissolved solids (TDS) and chlorides were also observed. Ammonia reduction measures implemented at waste treatment plants oxidize ammonia to form nitrate, resulting in increased nitrate concentrations over time. **Runoff from urban and agricultural areas, including runoff of salt used to control ice on roadways**, are the likely cause of increased TDS and chloride concentrations over time.

-2016 Draft New Jersey Integrated Water Quality Assessment Report

New Jersey Water Pollution Issues

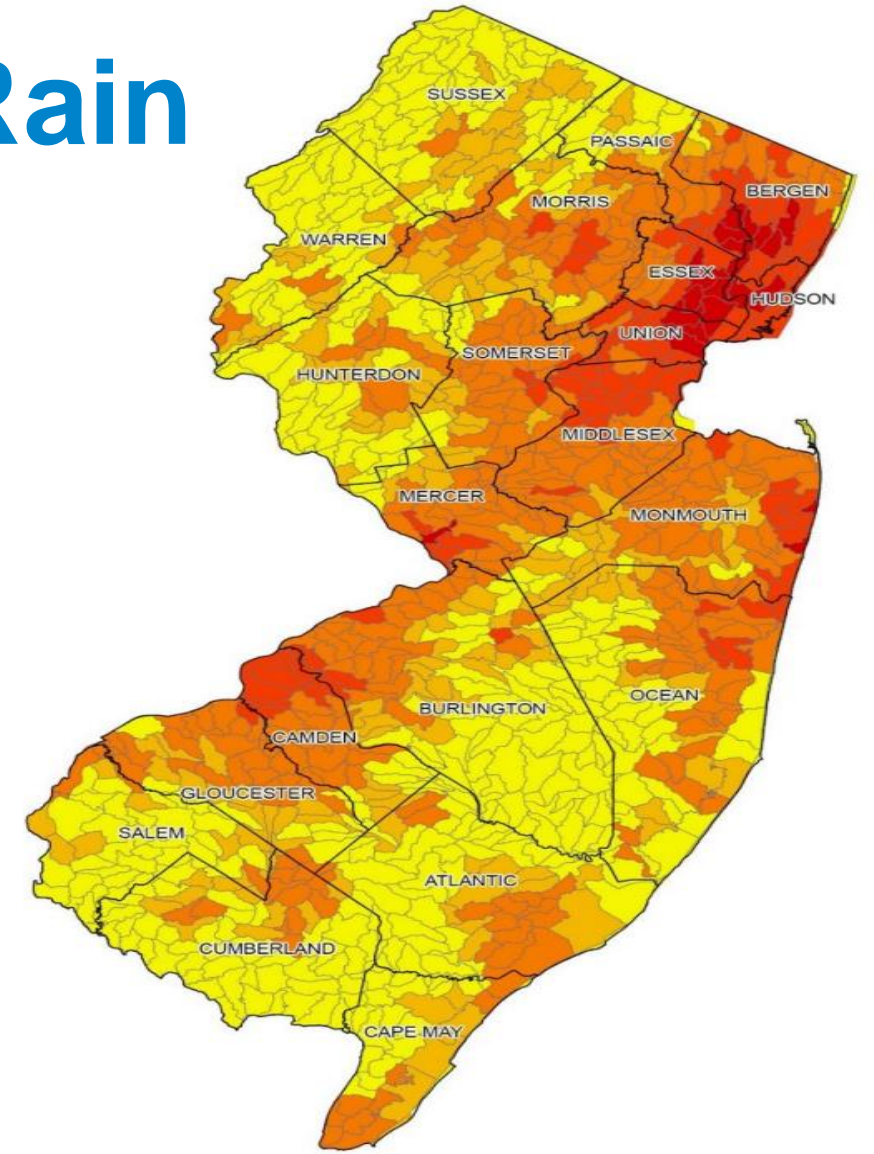
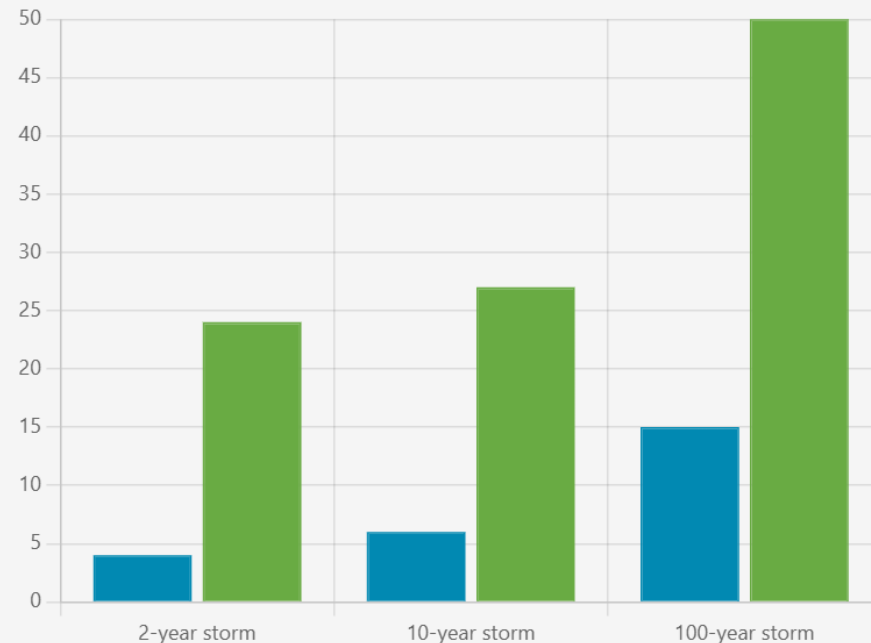
However, there was an observable trend in the number of “Excellent” conditions and “Poor” conditions migrating toward the “Good” and “Fair” categories. **The trends also show a correlation between biological impairment and anthropogenic factors** such as land use, total urban land, increase in impervious surface, and decrease in forests and wetlands in a stream’s drainage basin. **The replacement of pervious land with impervious surfaces increases storm water and the associated impacts** such as degraded riparian zones, unstable streambanks, higher turbidity, nutrients and other chemicals.

-2016 Draft New Jersey Integrated Water Quality Assessment Report

More Impervious More Rain

Highest Observed and Projected Precipitation Change

- Observed Precipitation Change Since 1999
- Projected Precipitation Change Under a Moderate Emissions Scenario for 2050-2099



% Impervious Surface 2020

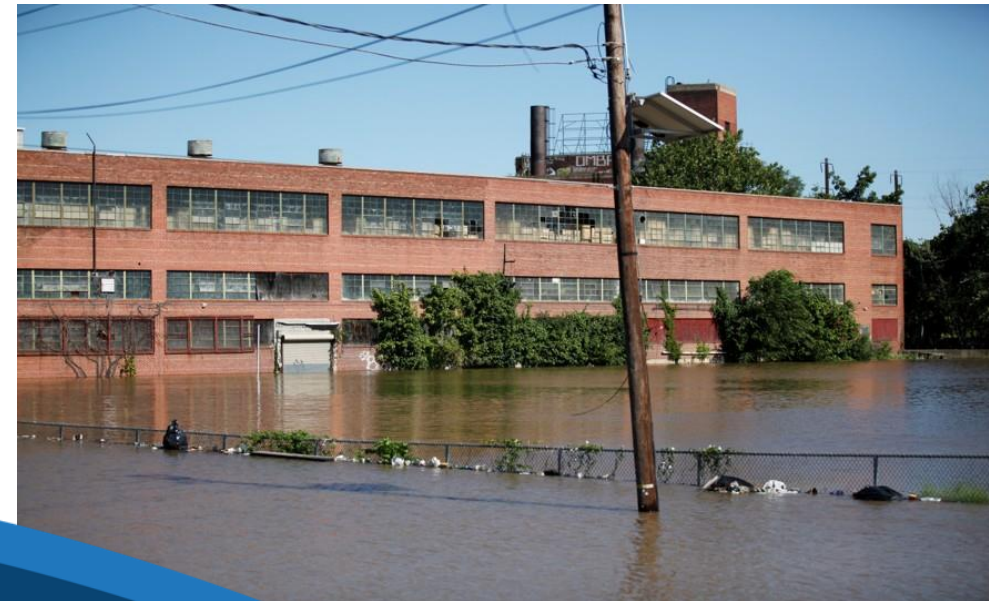


Changing Landscapes in the Garden State:
Land Use Change in NJ 1986 to 2020

Watershed Improvement Plans

Objective:

- Improve water quality by reducing contribution of pollutant parameters found in a Total Maximum Daily Load (TMDL)
- Improve water quality by reducing contribution of pollutant parameters causing water quality in Integrated Report
- Reduce and/or eliminate stormwater flooding in the municipality



Watershed Assessment Report



- Assessment of potential water quality improvement projects
- Estimate of percent reduction in loading of TMDL/Impaired
- Estimate of funding for each project and identification of funding
 - NJ Water Bank
 - SWU
 - 319
 - FEMA
 - Etc.
- Estimate of implementation schedule
- Public Information Session
- Comment period on draft plan

Why Regional

Four Watershed Based Groups:

- Lower Millstone
- Upper Millstone
- Assunpink
- Stony Brook

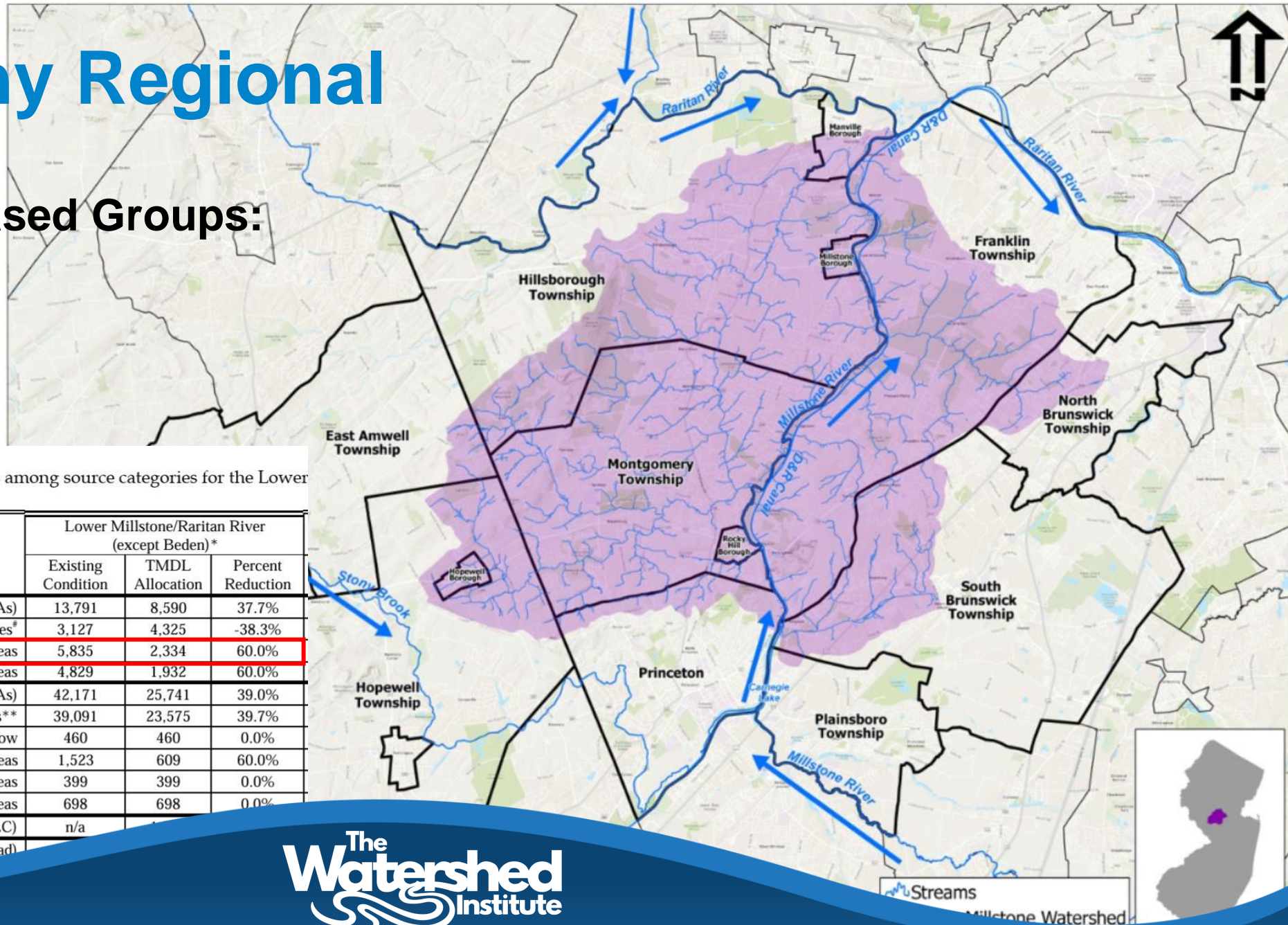


Table 11. Distribution of TSS WLAs and LAs among source categories for the Lower watershed

Long Term Average Daily Load (kg/d TSS)	Lower Millstone/Raritan River (except Beden)*		
	Existing Condition	TMDL Allocation	Percent Reduction
Sum of Wasteload Allocations (WLAs)	13,791	8,590	37.7%
Treated Effluent from WWTP Discharges [#]	3,127	4,325	-38.3%
Stormwater from Residential Land Cover Areas	5,835	2,334	60.0%
Stormwater from Other Urban Land Cover Areas	4,829	1,932	60.0%
Sum of Load Allocations (LAs)	42,171	25,741	39.0%
Boundary Inputs**	39,091	23,575	39.7%
Tributary Baseflow	460	460	0.0%
Stormwater from Agricultural Land Cover Areas	1,523	609	60.0%
Stormwater from Forest and Barren Land Cover Areas	399	399	0.0%
Stormwater from Wetlands Land Cover Areas	698	698	0.0%
Total Margin of Safety (% of LC)	n/a		
Reserve Capacity (% of WWTP load)			
Loading C...			

Regional Approaches Are Encouraged!

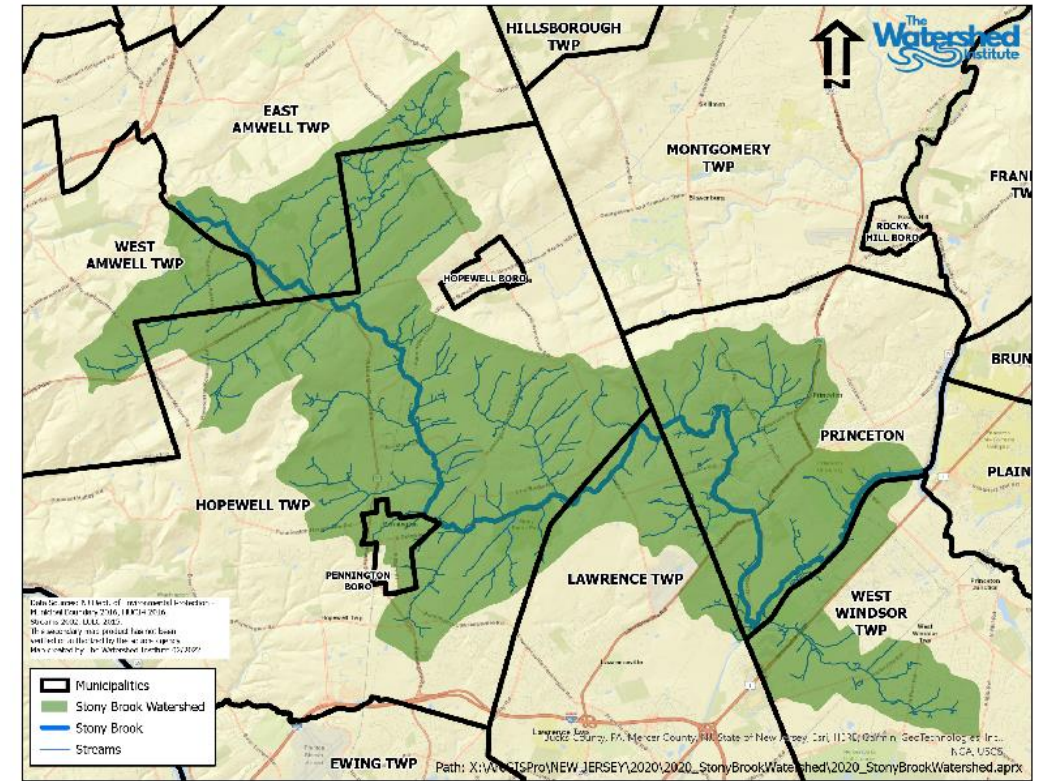
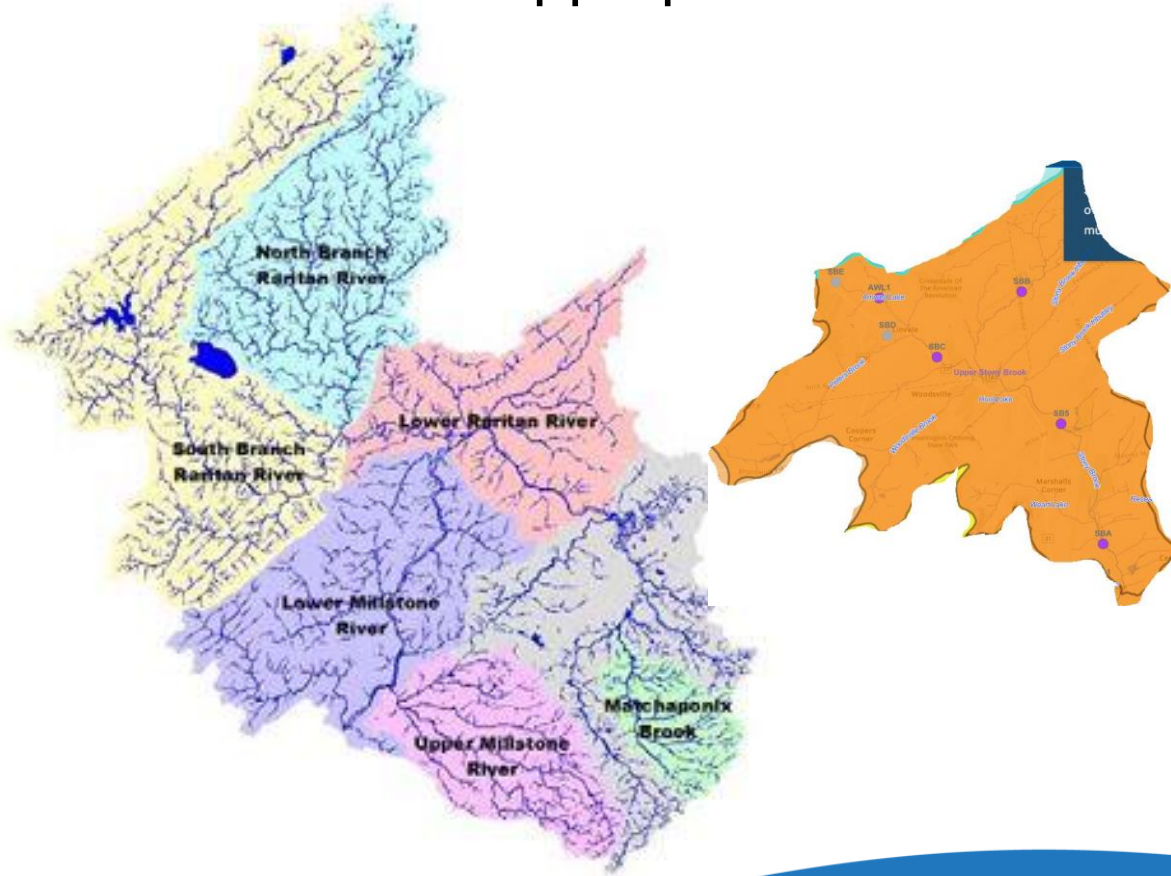
However, if multiple dischargers were to choose to coordinate their watershed improvement activities on a regional basis where one permittee was able to remove more than their percent reduction, then other towns in that HUC could conceivably remove less, as long as there was a net overall percent reduction achieved in the HUC(s) and no water quality impairments were allowed to get worse.

Regional Approaches Are Encouraged!

And since watersheds and subwatersheds do not follow municipal boundaries, the requirement in this Tier A renewal permit to develop and implement a Watershed Improvement Plan (WIP) in Part IV, Section H.1.b, also **requires municipalities to interact with stakeholders including their neighboring municipalities** that discharge to the same waterbodies so that watershed improvement actions can be coordinated within the subwatersheds. **These are ideal opportunities for more regional efforts to be developed and multi-municipality collaboration.** However, while **the Department prefers and encourages the WIPs to be developed on a regional basis**, it should be noted that this permit does not require municipalities to take a regional approach to the WIPs.

Organizing Regional WIP

- Determine the appropriate watershed?



Who to invite

- Municipal Engineer/Planner
- Stormwater Coordinator
- Elected Official
- EC members
- County Planner/Engineer
- County Commissioner
- Water Company
- NJDEP
- Local NGO
- Potential consultants

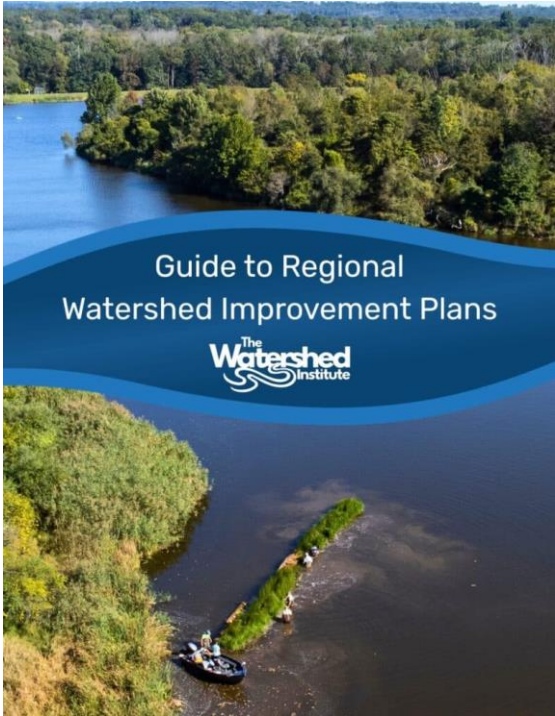
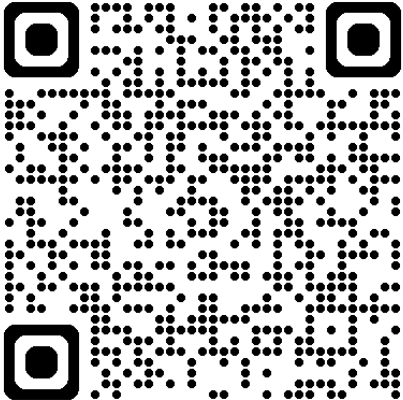


Plan B if no regional plan

- Coordinate regular meetings of consultants
- Utilize the same consultant
- Exchange draft plans early and often
- Review neighboring municipalities' inventory report

Guide to Regional WIPs

The Guide will be found on our Professional Resources Page.



Contents

- Introduction 1
- What are Watershed Improvement Plans 1
- Why are WIPs necessary? 3
- The Problem 6
- The Solution 7
- How to implement a regional WIP? 9
- Identify the Region 9
- Identify the Stakeholders 10
- All The Rest 12
- When is it too late? 15
- Conclusion 16
- RESOURCES 18
- Online Resources 18
- Checklist 19
- Draft Model Municipal Resolution for watershed planning 22
- Flowchart: Developing a Regional Watershed Improvement Plan (WIP) 24



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Resources

- Enhanced Stormwater Management Ordinance Webinar - <https://www.youtube.com/watch?v=ROn4wtzyp4k>
- Enhanced Stormwater Management Ordinance - <https://thewatershed.org/the-watershed-institute-releases-enhanced-stormwater-management-model-ordinance/>
- Regional Watershed Improvement Plan Webinar - <https://www.youtube.com/watch?feature=shared&v=t3MxukT6d6M>
- Guide to Regional Improvement Plans - <https://thewatershed.org/watershed-improvement-plans/guide-to-regional-watershed-improvement-plans-2025/>
- Understanding MS4 Requirements in NJ Webinar - <https://www.youtube.com/watch?v=KK6gX7KLbfE>
- Impervious Cover Assessment/Reduction Action Plan- <https://thewatershed.org/impervious-cover-assessments/>
- Stream Watch- <https://thewatershed.org/monitoring/>
- NJ Salt Watch- <https://njwatershedwatch.org/>
- NJDEP MS4 Permit - <https://dep.nj.gov/stormwater/municipal-stormwater-regulation-program/ms4-permits/>
- MS4 Deliverables Timeline - <https://dep.nj.gov/wp-content/uploads/stormwater/updated-deliverables-timeline-tier-a.pdf>
- Stormwater Ordinances - <https://dep.nj.gov/stormwater/municipal-stormwater-regulation-program/example-ordinances/>
- Enhanced Stormwater Management Plan - https://gtoolkit.njfuture.org/wp-content/uploads/2025/06/Enhanced-Model-Municipal-Stormwater-Management-Plan_2025-Update_final-1.pdf

2026 Technical Fridays

Informative webinars for watershed professionals and other interested audiences focused on water quality & science, engineering, and law in Watershed efforts.

SAVE THE DATE

The following schedule is subject to change.

Check back on the Professionals Programs page for webinar updates, descriptions, speaker bios past webinar recordings, slides, and more.

Questions? Email us at
poliveira@thewatershed.org

January 23 - Municipal Ordinances

Exploring municipal ordinances that are key to local environmental protection.

April - NJ Resilient Environments and Landscapes

Preparing NJ for climate change impacts.

May 8 - The Benefits of Restoration

Learning about the impacts of restoration efforts and successful projects.

September - Myths and Misconceptions with Stormwater Design Pt. II

Avoiding design pitfalls and rethinking how we manage stormwater in NJ.

October - The Art of Commenting

Understanding regulations and effectively preparing comments.

November - The Echoes of Sackett

Understanding NJ's water pollution laws and the impacts of Sackett v EPA.

December - A Local Study on Harmful Algal Blooms

Understanding the impacts of HABs at Wargo Pond on The Watershed Reserve.



<https://thewatershed.org/professional-programs/>



We are approved to provide PE and CLE professional development credits as appropriate.

Navigating New Jersey's MS4 Rules

What Green Teams Need to Know

Learn more at thewatershed.org

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Stormwater Utilities: Fee-based or Tax-based?



Daniel J. Van Abs, PhD, FAICP/PP

Brief Background

- PhD, SUNY-ESF
- Passaic River Coalition, Technical Director (1982-86)
- Career manager with State of New Jersey (1986-2012)
 - NJ Department of Environmental Protection (water resource management planning and standards)
 - NJ Water Supply Authority (watershed protection)
 - Highlands Council (regional land and water management)
- Academia (Rutgers, 2012-2024)
 - Environmental and water resources policy/management
 - Water systems management and planning research
- State Appointments
 - Member, Highlands Water Protection & Planning Council
 - Former Member and Chair, NJ Clean Water Council

Stormwater Utilities: Physical v. Funding

Physical

- Catch basins (the streets)
- Storm sewers (the pipes)
- Basins (detention, retention, infiltration)
- Outfalls (end of pipe)
- Maintenance & Repair

- If you have any of these, you have a stormwater utility

Funding Options

- General budget (property taxes)
- NJ Water Bank loans for capital projects (paid off using what funds?)
- Private stormwater system inspection fees (rare)
- **Stormwater utility fee based on relative stormwater generation**

Funding Imperatives

NJDEP MS4 Permits

- Asset identification, mapping
- Asset management (O&M)
- Watershed Improvement Plan (WIP) development
- Inspection requirements
- Next MS4 Permit – WIP implementation
 - Stormwater system upgrades
 - Add stormwater treatment to pre-modern systems
 - Reduce peak flows

Infrastructure Management

- All stormwater systems decline in functionality over time
- O&M and capital costs of maintenance, repair and replacement, including green infrastructure and private systems
- Increasing storm frequency and severity: old systems no longer meet needs
- Address problems from pre-modern systems

Limited Waters, Impaired Waters

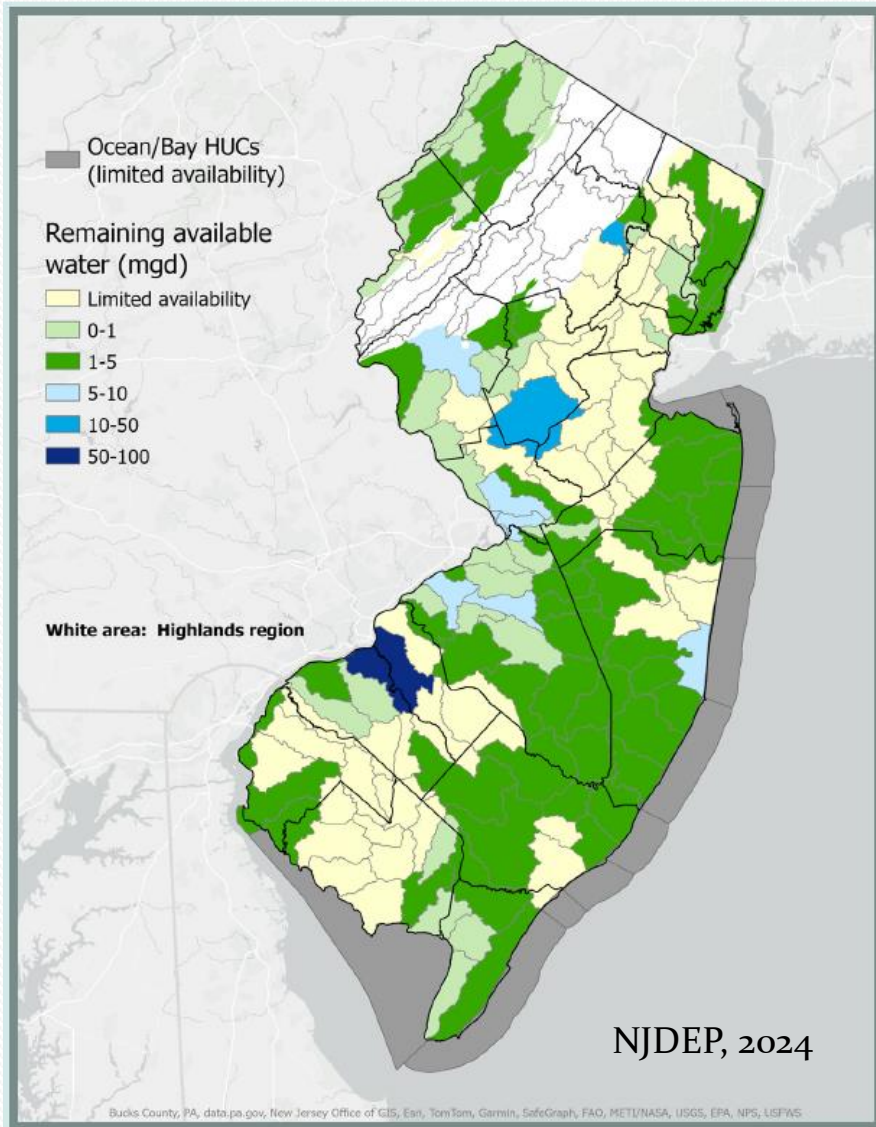
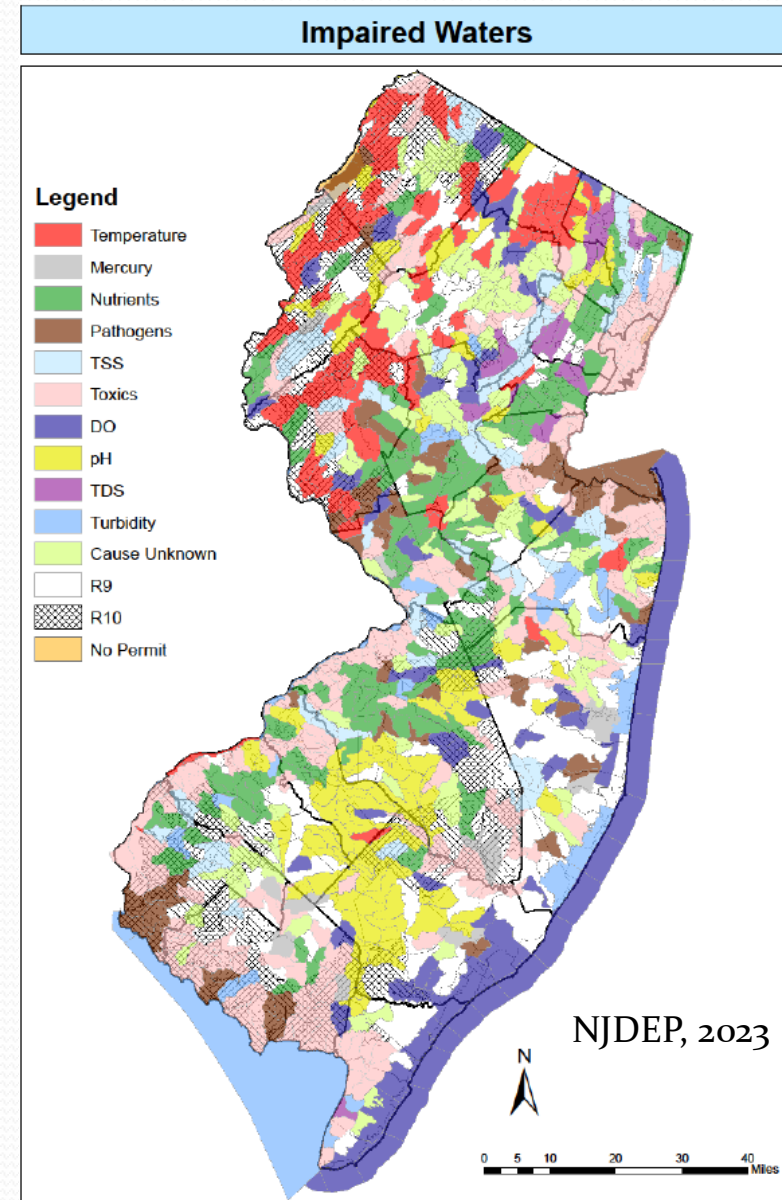


Figure 4.21a Remaining available unconfined groundwater and surface water for depletive and consumptive use by HUC11 at peak current use rates.



Pay, we will. But how?

Standard Methods

- Property taxes
 - Only affects landowners that pay property taxes
 - Property values likely not related to stormwater generation
- Market loans – general or revenue obligation bonds (must repay)

Fee-based Utility

- Stormwater fee based on relative stormwater generation
- “Enterprise fund” – dedicated
- VERY RARELY a new administrative agency (none in NJ)
- USUALLY handled by existing DPW or MUA

NJ Water Bank loans (and possible “principal forgiveness”, aka grants)
Funding source needed to repay the loans

>2100 Stormwater Utilities

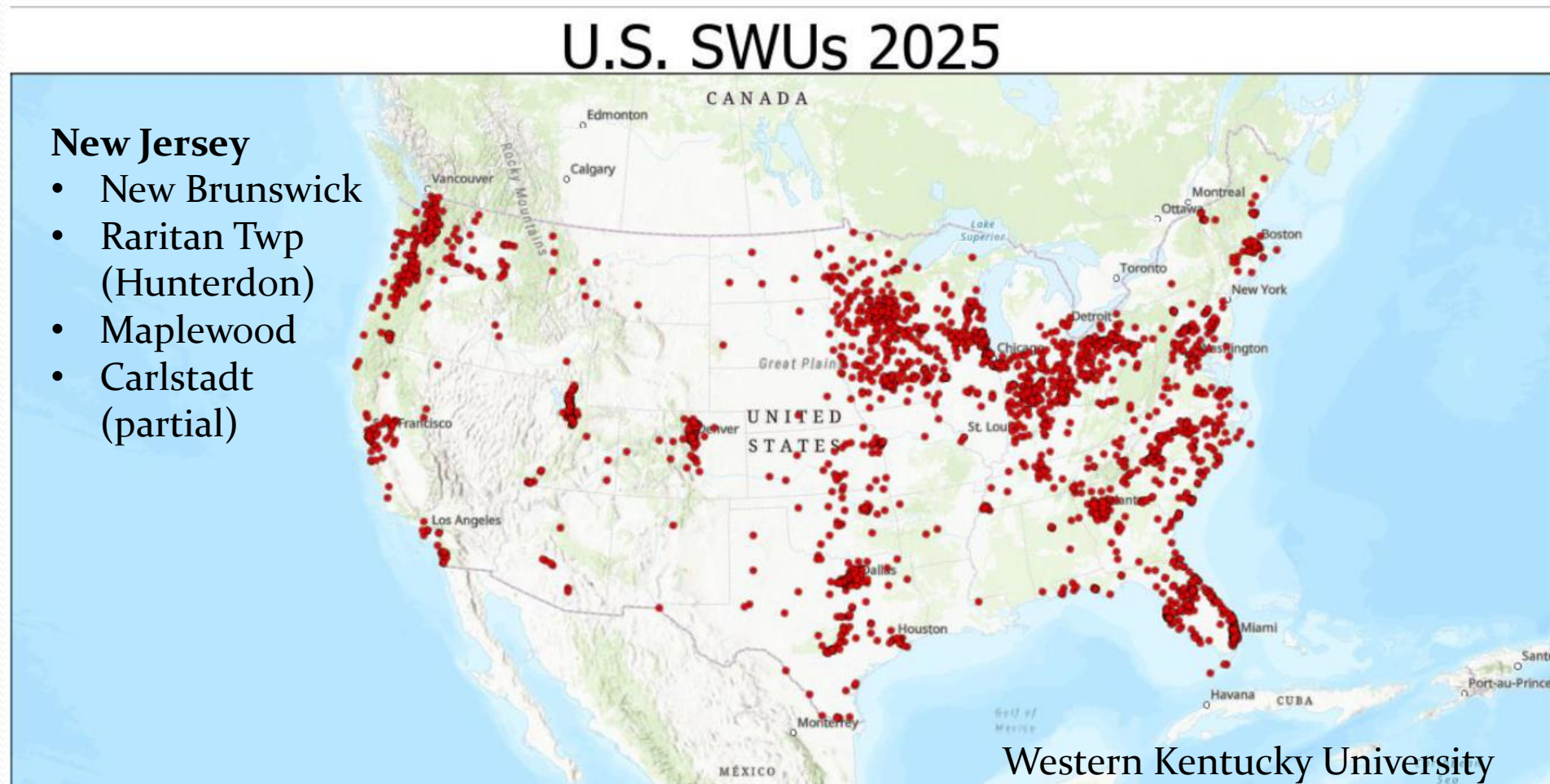


Figure 1. U.S. stormwater utilities (SWUs).

Western Kentucky University
Stormwater Utility Survey 2025

Affordability

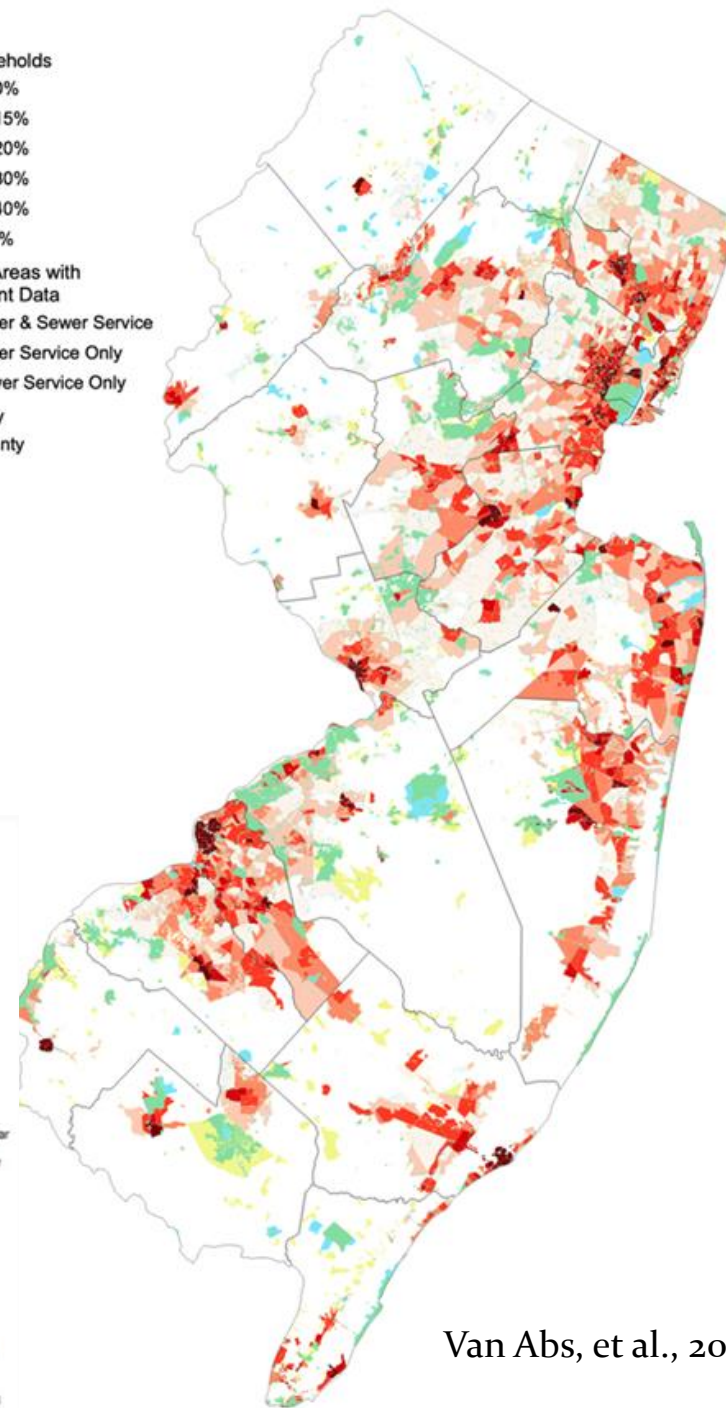
Based on 2021 water/sewer rates and household incomes, roughly 20% of households face affordability stresses above thresholds in NJ

Legend

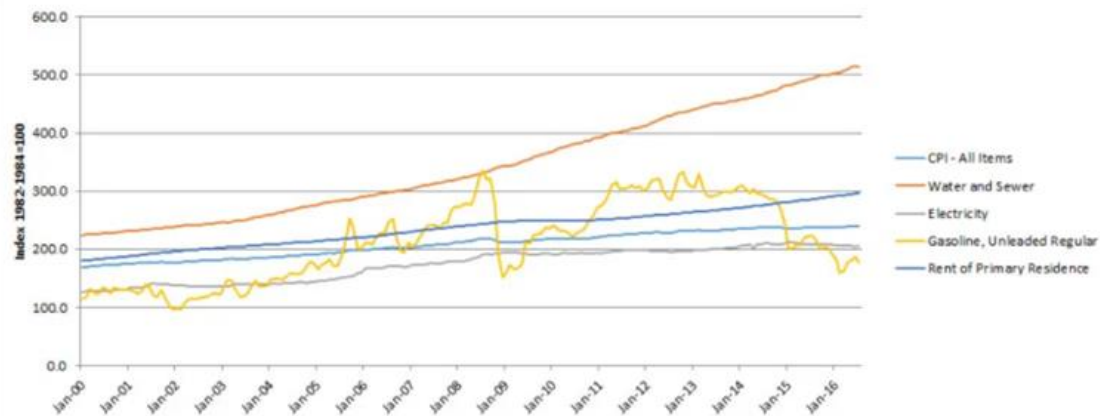
- % of Households
- 0-10%
- 10-15%
- 15-20%
- 20-30%
- 30-40%
- >40%

- Service Areas with Insufficient Data
- Water & Sewer Service
- Water Service Only
- Sewer Service Only

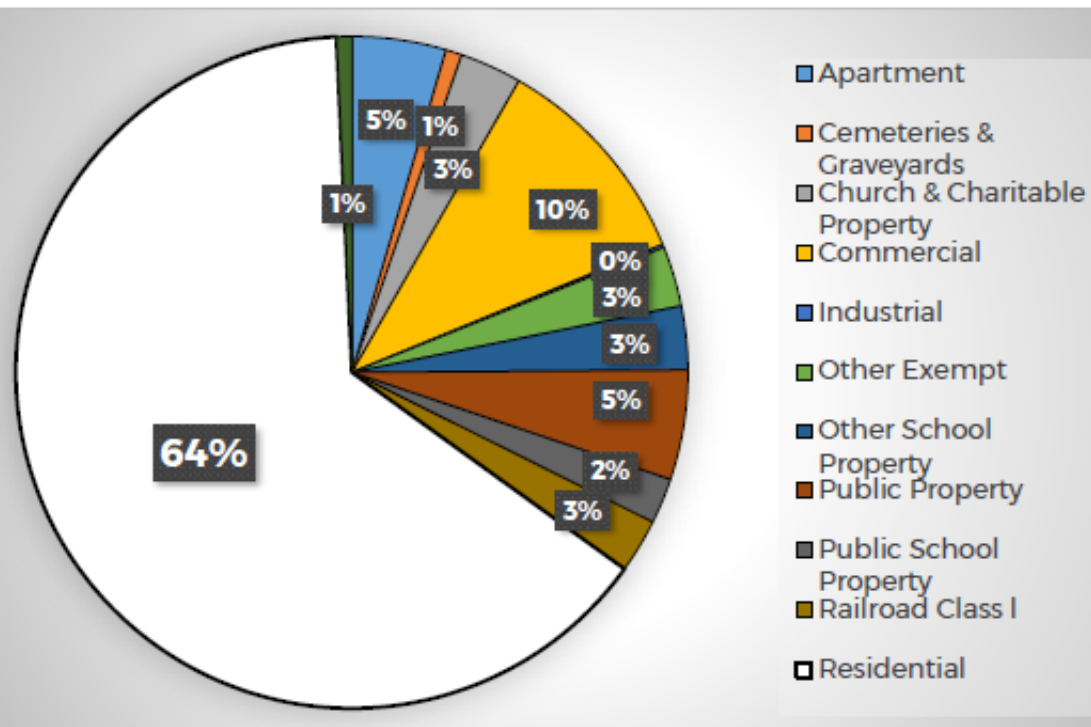
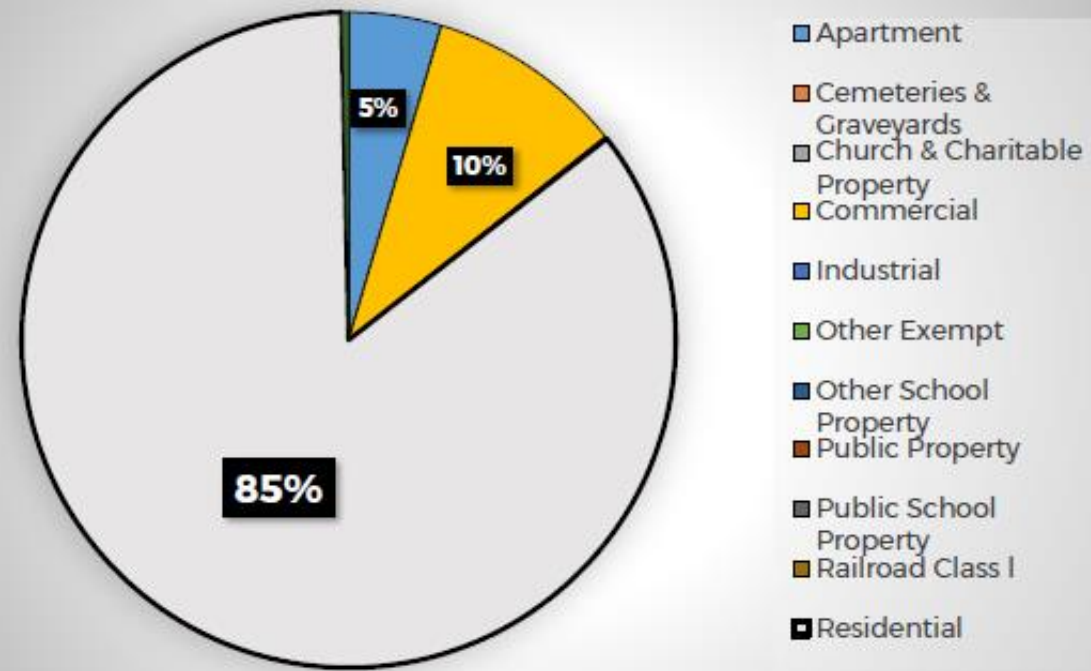
- Boundary
- County



Increase in Monthly Price of Water and Sewer Services, Consumer Price Index, 2000 to 2016



Example Shift in Costs by Land Use



Key Arguments For SWUs

- More equitable distribution of costs
- Dedicated source of funds
- Administration can be handled through normal municipal, MUA or county financial offices
- Regular flow of funds allows for long-term planning, design and implementation of projects
- Reduced reliance on reactive “fix what fails” efforts
- SWU funds can be used for **shared services**, including **watershed-based projects** with other jurisdictions

Key Arguments Against SWUs

- Setup and administrative costs may not be worth it for municipalities with minor stormwater system costs
- Municipalities with very high percentage of single-family homes may see little shift in homeowner costs between property tax and SWU fees
- Can result in high fees for religious and educational facilities with large parking lots (but incentives can help them reduce their fees through credits)
- Perception that fees are taxes, or that a new funding stream is just too complicated or politically fraught

Recommended Steps

1. What are the **key** needs and anticipated costs?
2. What are the major **priorities**?
3. **What should fees pay for** versus property taxes?
4. What is the **distribution of impervious surfaces**?
5. What is the most equitable **distribution of fees**?
6. What is the most **equitable credit system**?
7. How can #5 and #6 be made **administratively simple**?
8. **Decision point** – implement fees or not.



Contact Information

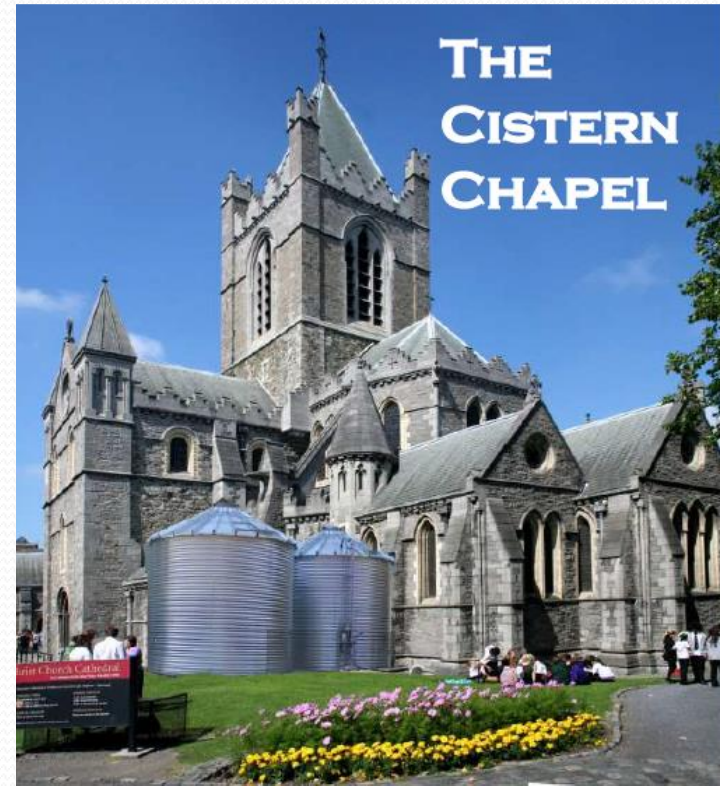
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Call to Action: Support Municipal Compliance

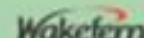
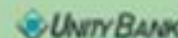
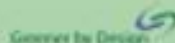
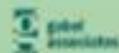
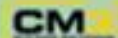
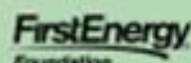
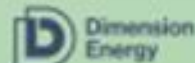
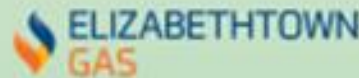
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