

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



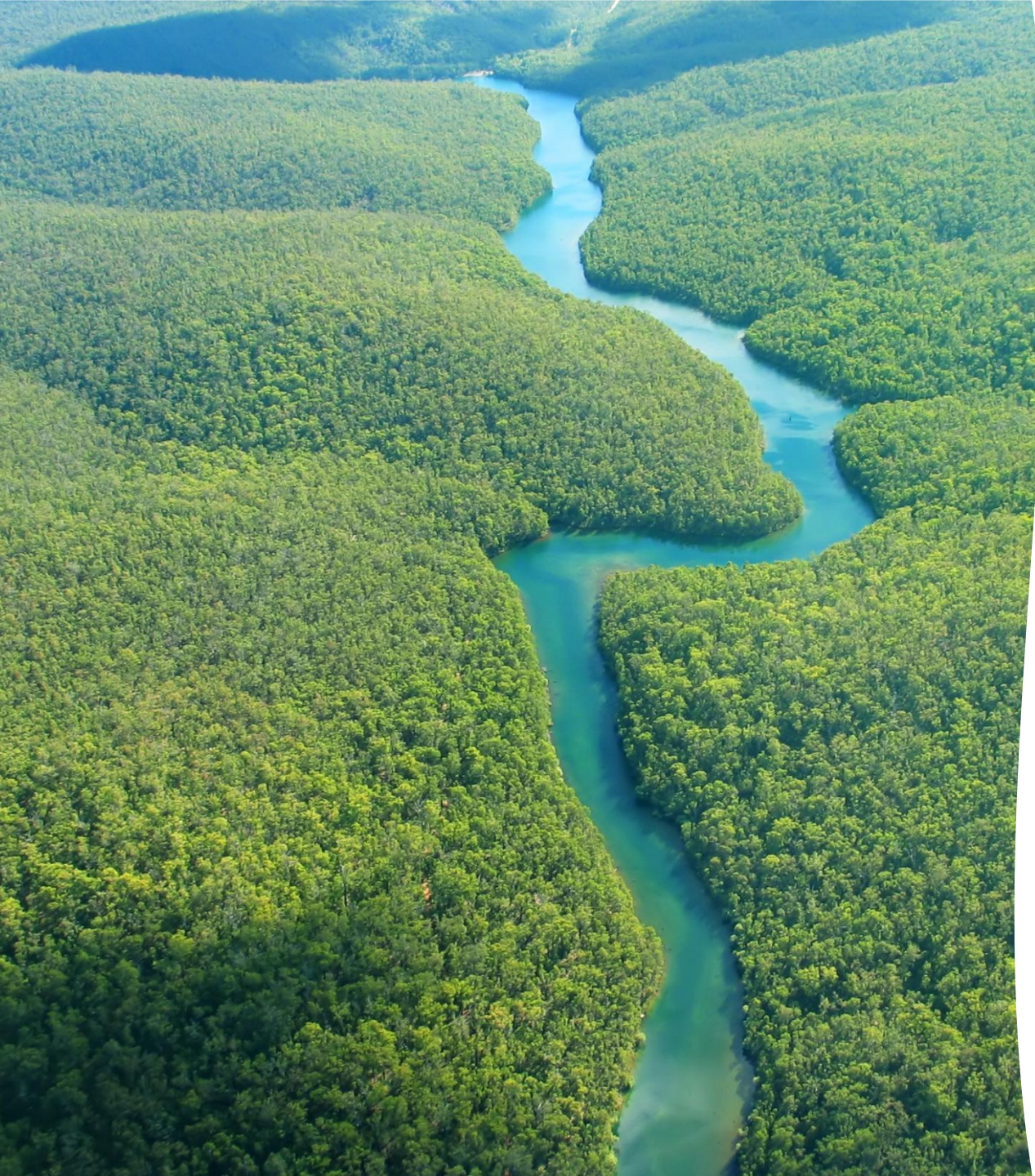
RUTGERS UNIVERSITY
Water Resources Program
New Jersey Agricultural Experiment Station



Water Resources Program



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



Watershed Improvement Plan

Watershed Inventory Report

- MS4 Infrastructure Mapping

Watershed Improvement Plan

1 Jan. 2027

1 Jan. 2026

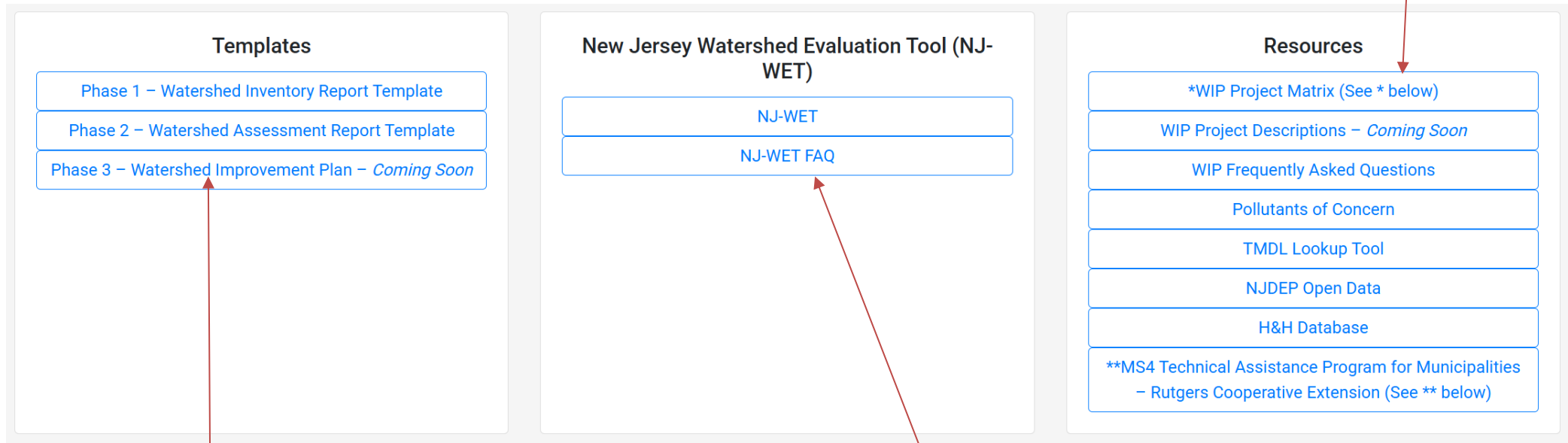
1 Dec. 2027

Watershed Assessment Report

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](#), I

[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 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

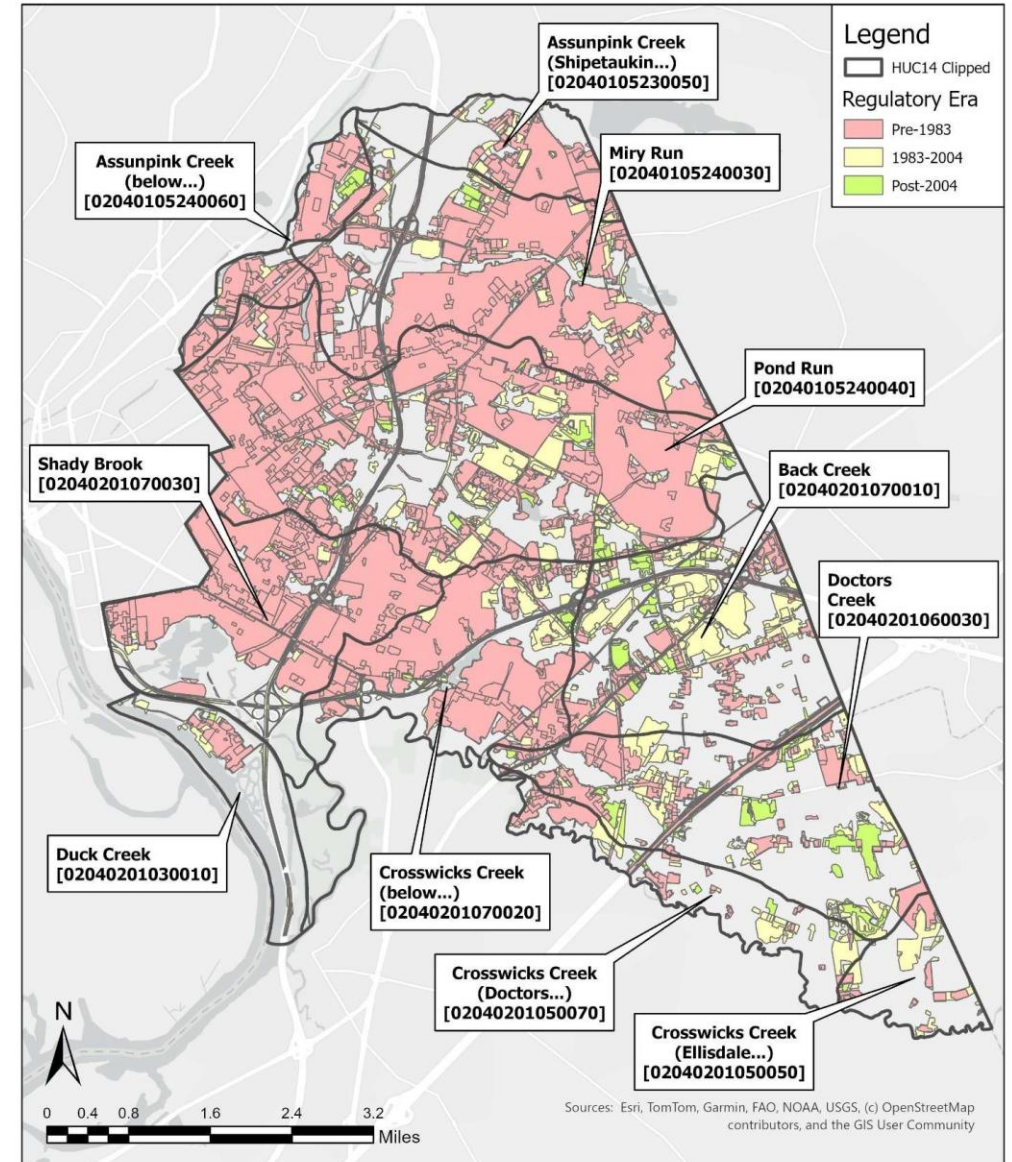
- Existing Water Quality Problems (Rec)
- Sources of Problems (Rec)
- Loading Analysis & Load Reduction Targets (Rec)
- Existing Management (Rec)
- Proposed Management (Rq, w/ proposed reductions)
- Potential Management Summary (Rec)
- Costs and Funding Sources (Rq)
- Schedule (Rq)
- Addressing All TMDLs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

Accounting for Existing Management

- What has stormwater management already?

Subwatershed	HUC14	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 Coliform	Projects	DO (BOD, COD)	E. Coli	Fecal Coliform
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}

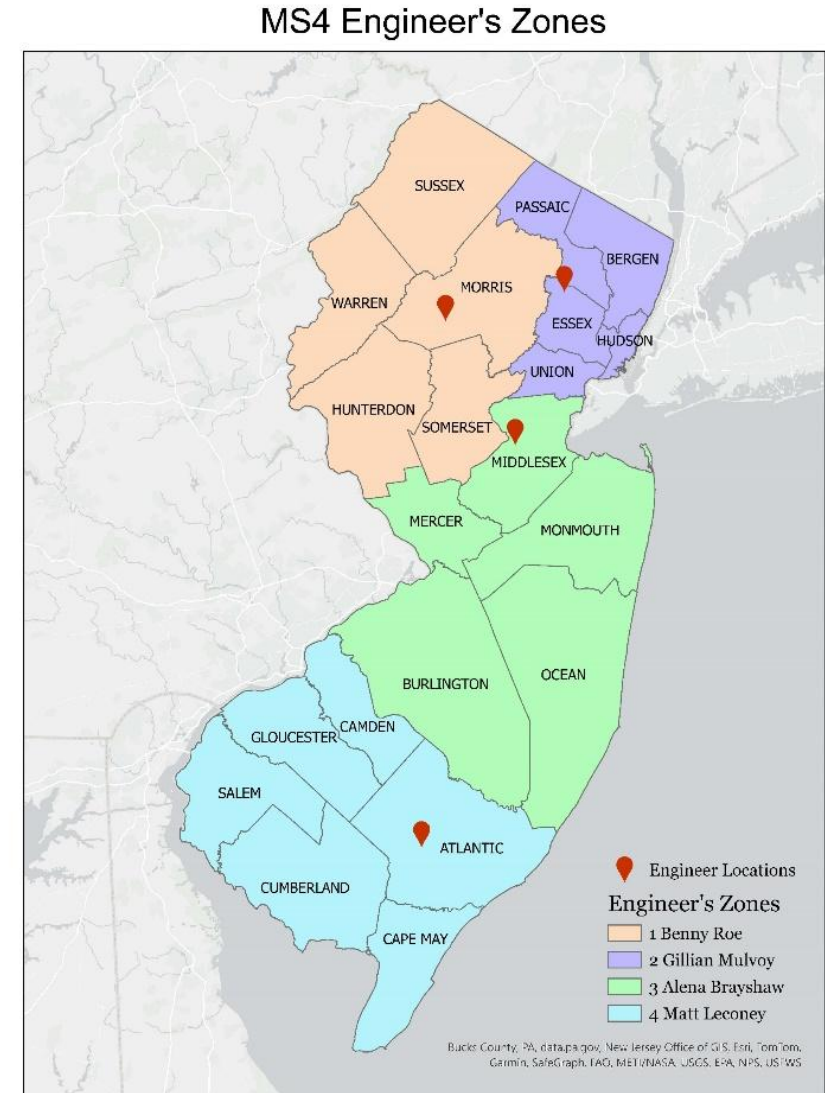
[Link](#): Check the footnotes for excellent references!

WAR vs. Final WIP

WAR	Final WIP
Generalized projects by subwatershed w/ load reductions	<u>Specific</u> project locations w/ load reductions
Generalized Schedule	Schedule broken down by project and year
Generalized Cost Breakdown by project type	Costs broken down by project and year with associated funding opportunities
Public feedback from public sessions (should be held semiannual [2 times per year])	Public feedback from public sessions & required 60-day comment period for WAR
	Additional Elements - 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



Primary Support Tasks

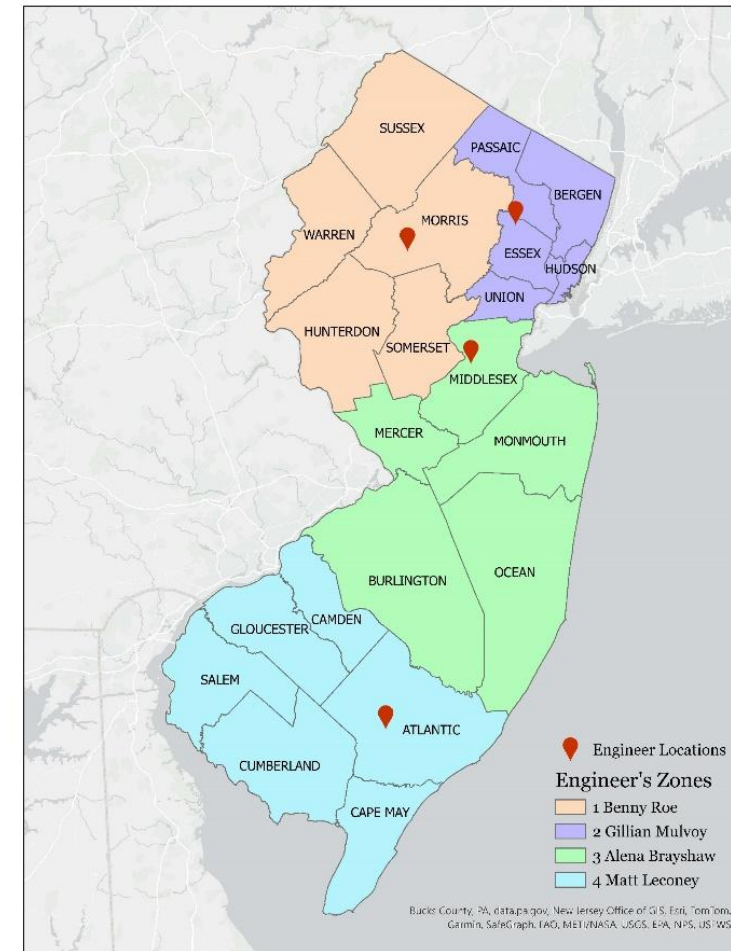
- 1. Preparation of the Watershed Inventory Report/ MS4 Infrastructure Map (Due January 1, 2026)**
- 2. Preparation of the Watershed Assessment Plan (Due January 1, 2027)**
3. Preparation of the Watershed Improvement Plan (Due December 1, 2027)
4. Inspections of stormwater management facilities, inlets, 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

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

MS4 Engineer's Zones



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