# Assunpink Public Information Session

The Watershed Institute

April 7, 2026

# AGENDA

1. Watershed Basics
2. Watershed Management Plan
3. Consultant Update
4. Questions
5. Public Comment
    - Survey
6. Watershed Improvement Plan
7. Regional Approach

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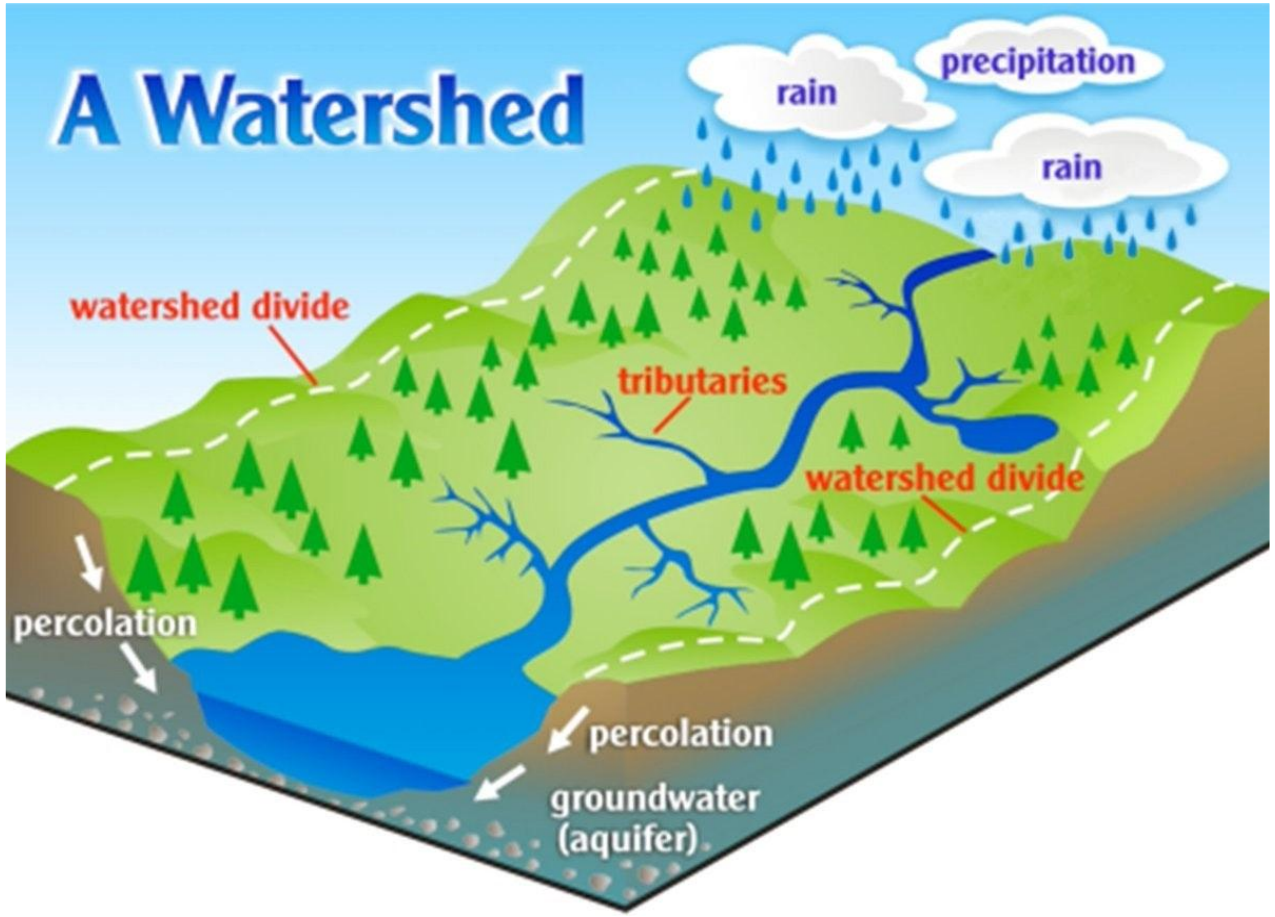
# What is a Watershed?

A watershed is an **area of land that drains or "sheds" water** into a particular **body of water**, such as a **stream, river, pond, or lake**.

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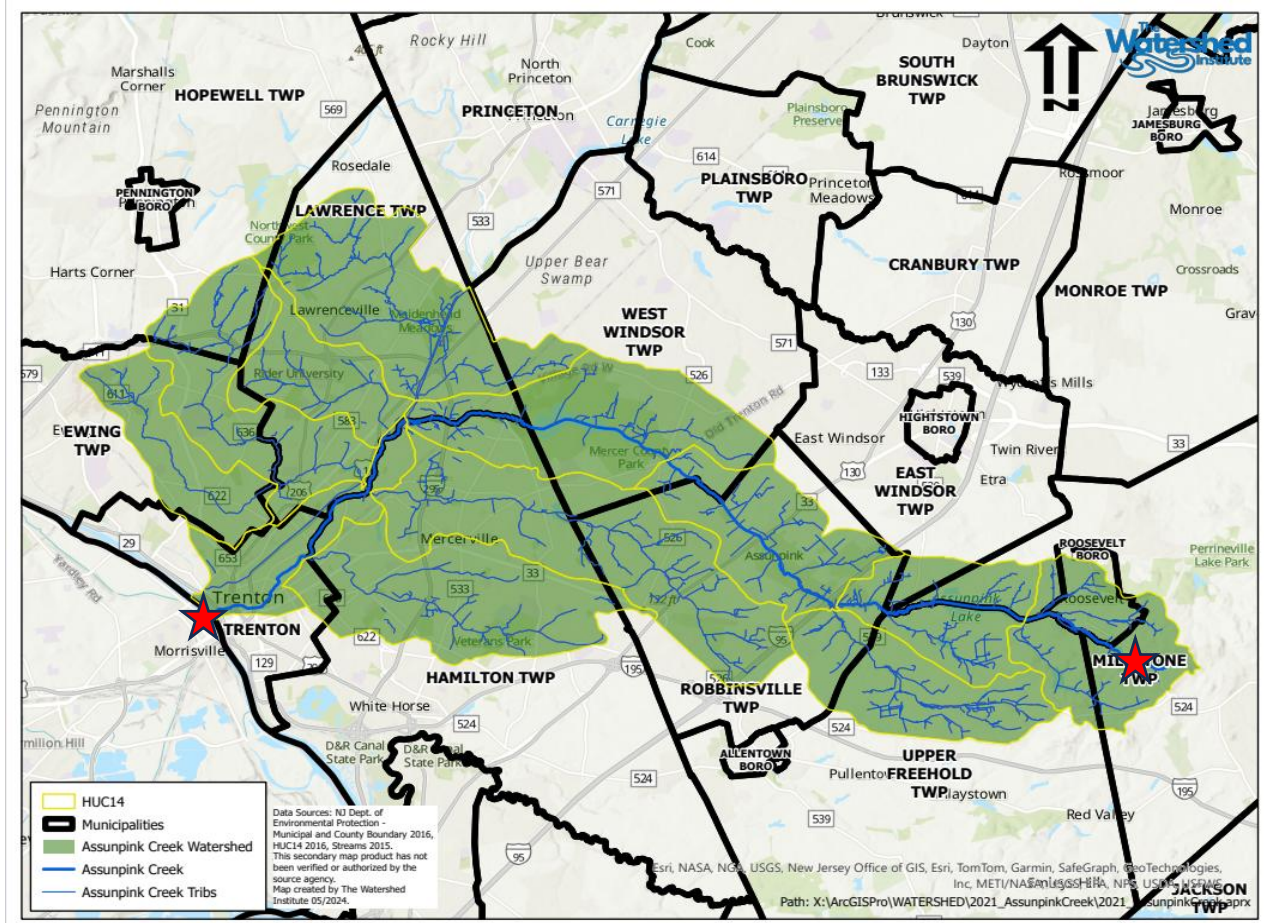
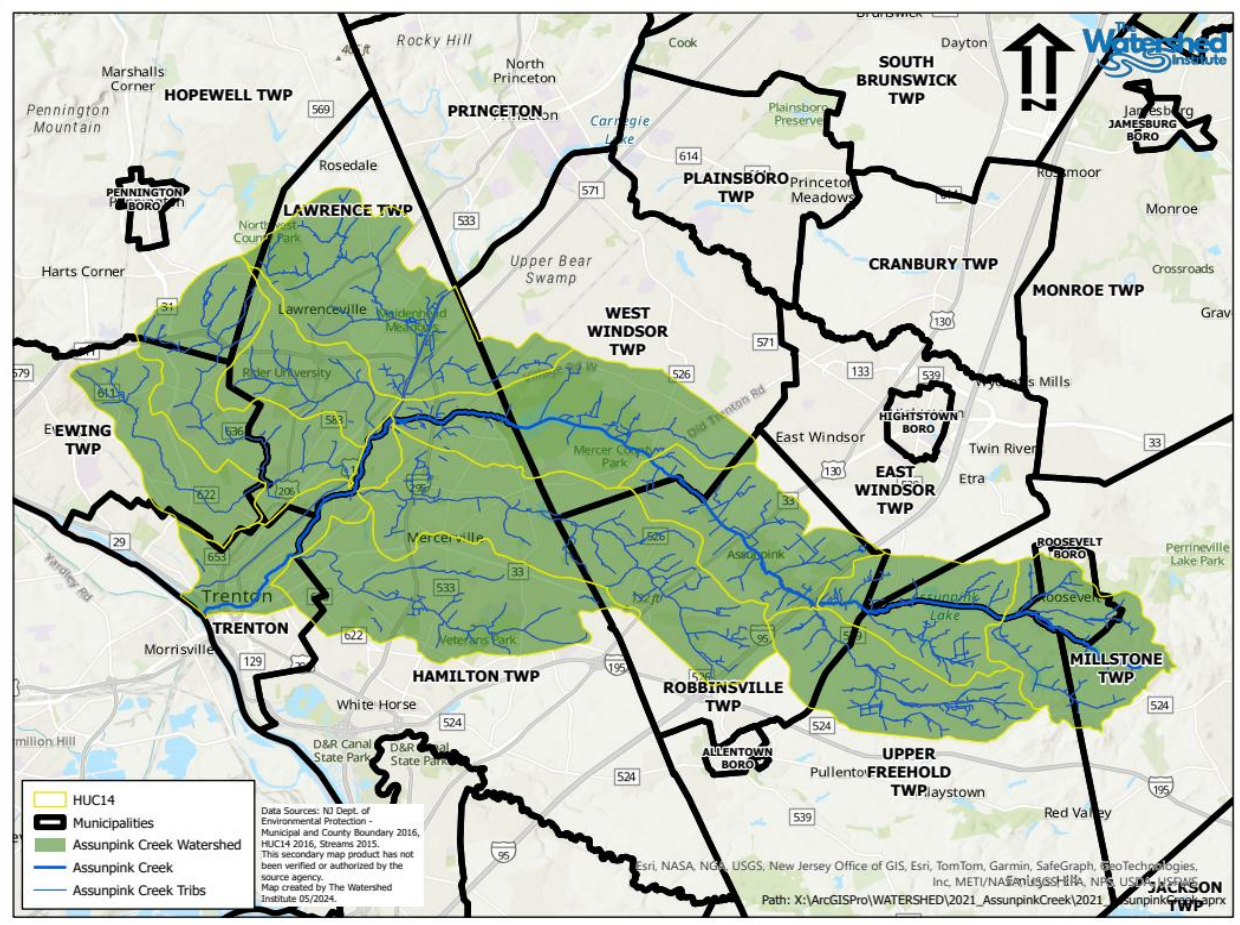
# State, Regional, and Local Scale Watersheds

The Assunpink Watershed is 92.5 mi².

Headwaters: Millstone
Mouth: Trenton

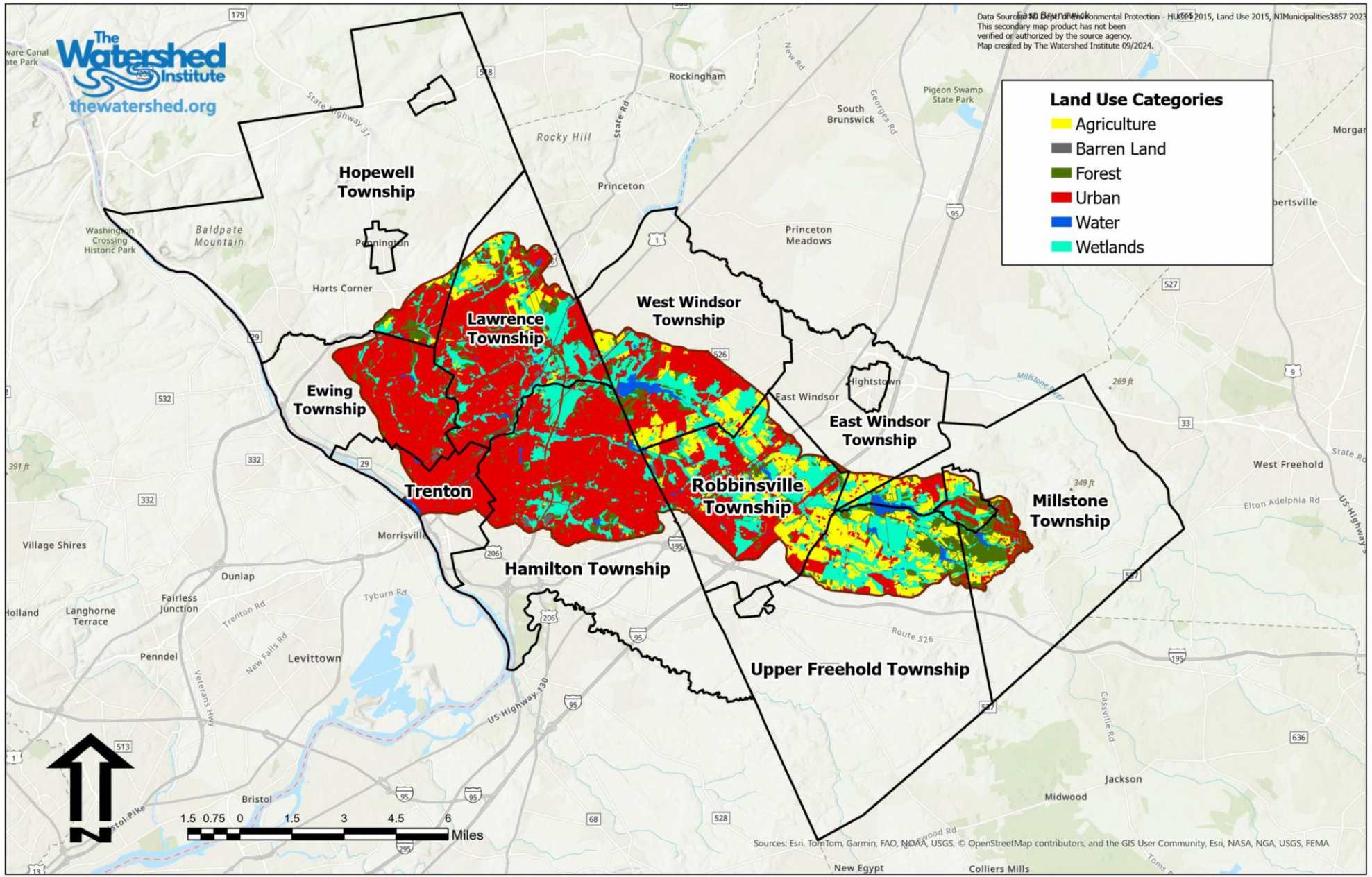


# Assunpink Watershed Map with Towns

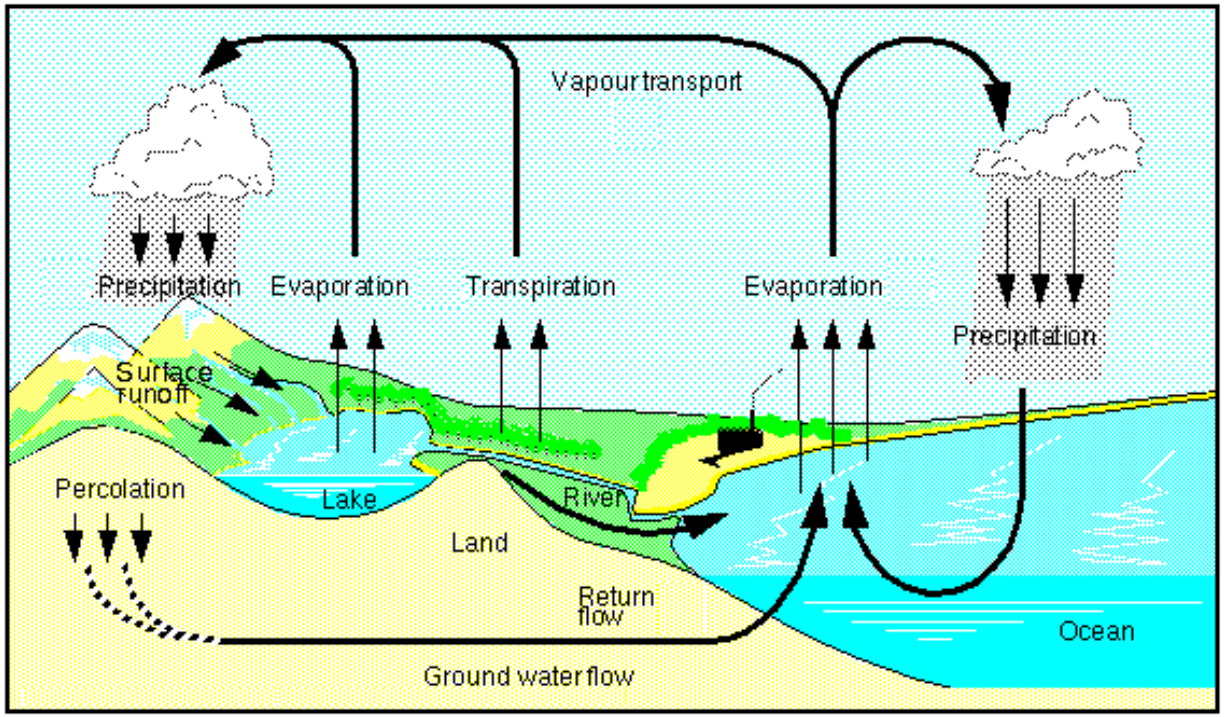



- **Trenton (Mouth)**
- Hamilton
- Ewing
- **Robbinsville**
- **Hopewell Twp.**
- **Lawrence Twp.**
- **West Windsor**
- Upper Freehold
- **East Windsor**
- **Roosevelt**
- **Millstone Twp.** (Headwaters)

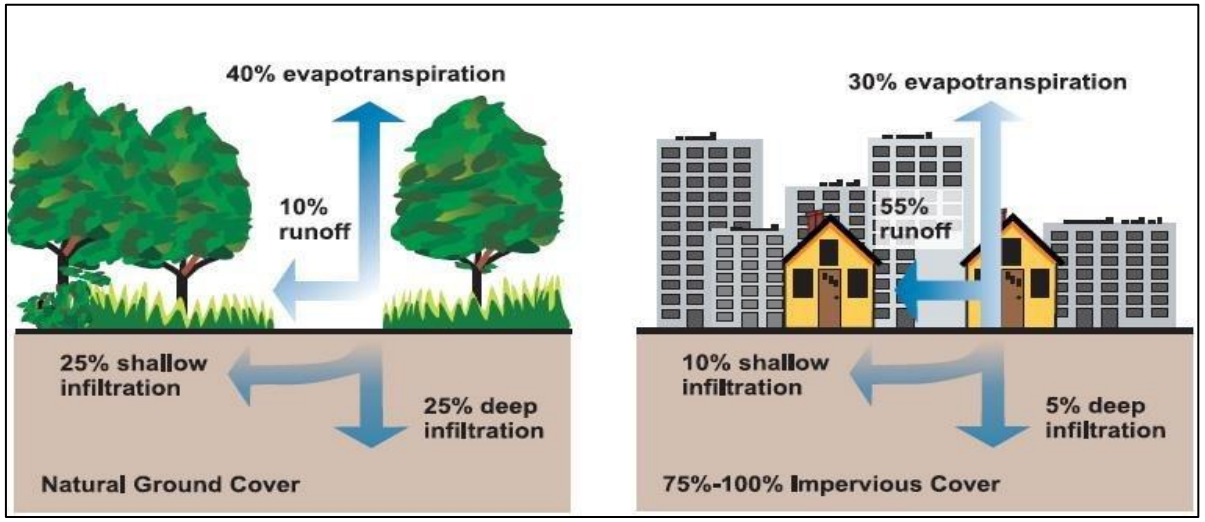
# Assunpink Watershed Land Use Map



# Humans are Changing the Water Cycle




Courtesy Erich Roeckner, Max Planck Institute for Meteorology




Increase in impervious surfaces means less groundwater recharge, less groundwater recharge, means increased runoff of surface water leading to flooding and stream bank erosion.

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# Flooding in the Assunpink


Image: Hurricane Ida Flooding

Decreased Groundwater Recharge and Increased Flooding

Image: Enterprise Avenue, Trenton NJ

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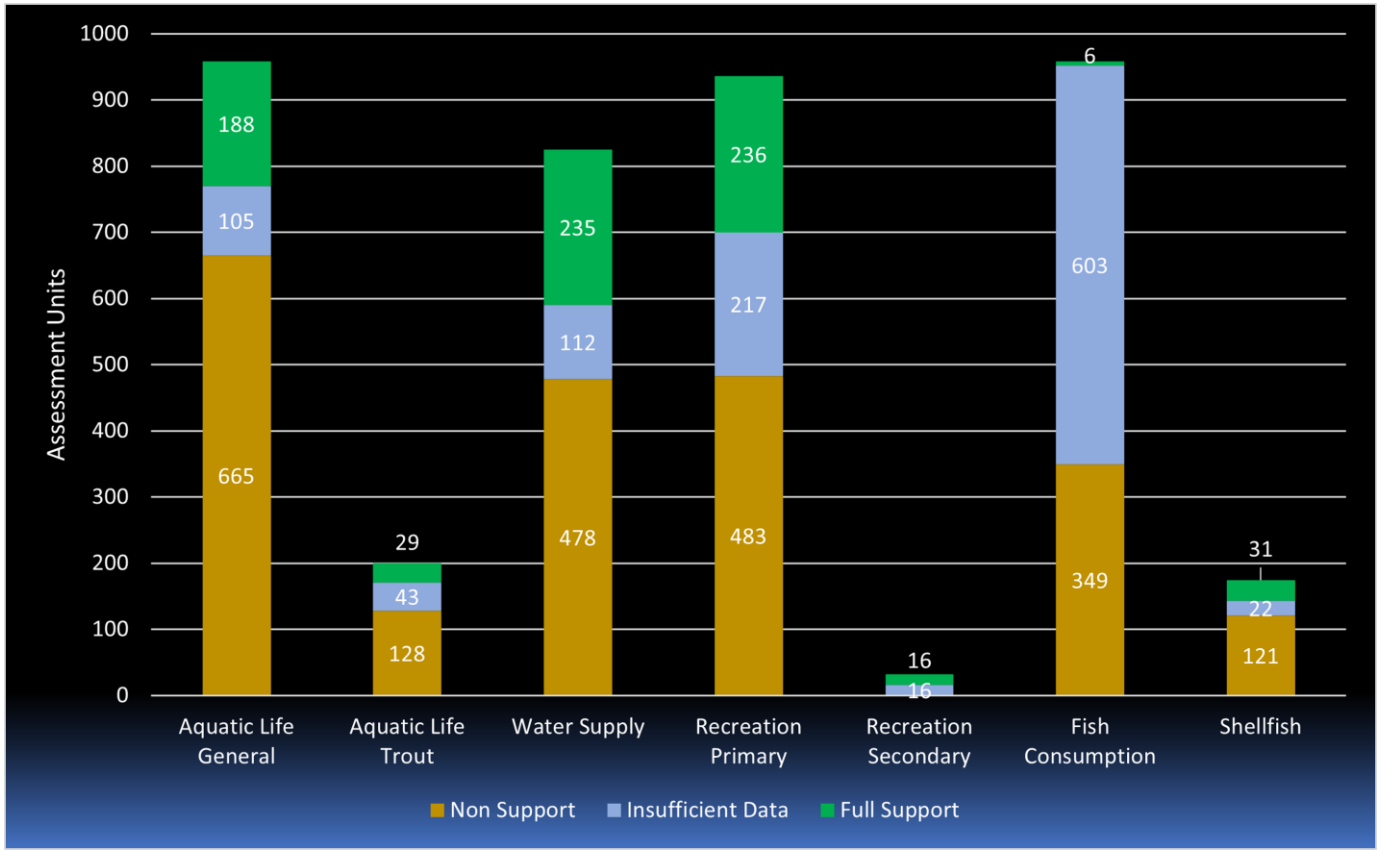
# NJ Water Pollution Issues




2022 NJ Integrated Water Quality Assessment Report

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# Assunpink Management Plan Update


**Tanya Dapkey**

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SCIENCE ENGINEERING DESIGN

# Princeton Hydro Team
# Michael Hartshorne, Chris Mikolajczyk, CLM, and Tanya Dapkey

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# Princeton Hydro

- ✓ Since 1998 we have provided integrated ecological and engineering consulting services
- ✓ Extensive experience in lake, river, and stream restoration and watershed management

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# Watershed Management Plan – Scope of Work
# USEPA 9-Element Approach

- ✓ Water Quality Data
- ✓ Historical Data Review
- ✓ Solicit Community and Stakeholder Input
- ✓ Watershed Modeling (Pollutants & Flooding)
- ✓ Visual Watershed Assessment
- ✓ BMP Selection and Pollutant/Flood Reduction Analysis
- ✓ Develop WMP

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# Watershed Management Plan – Key Points

- ✓ **WMP expected to be in draft form for review by 9/30/26.**

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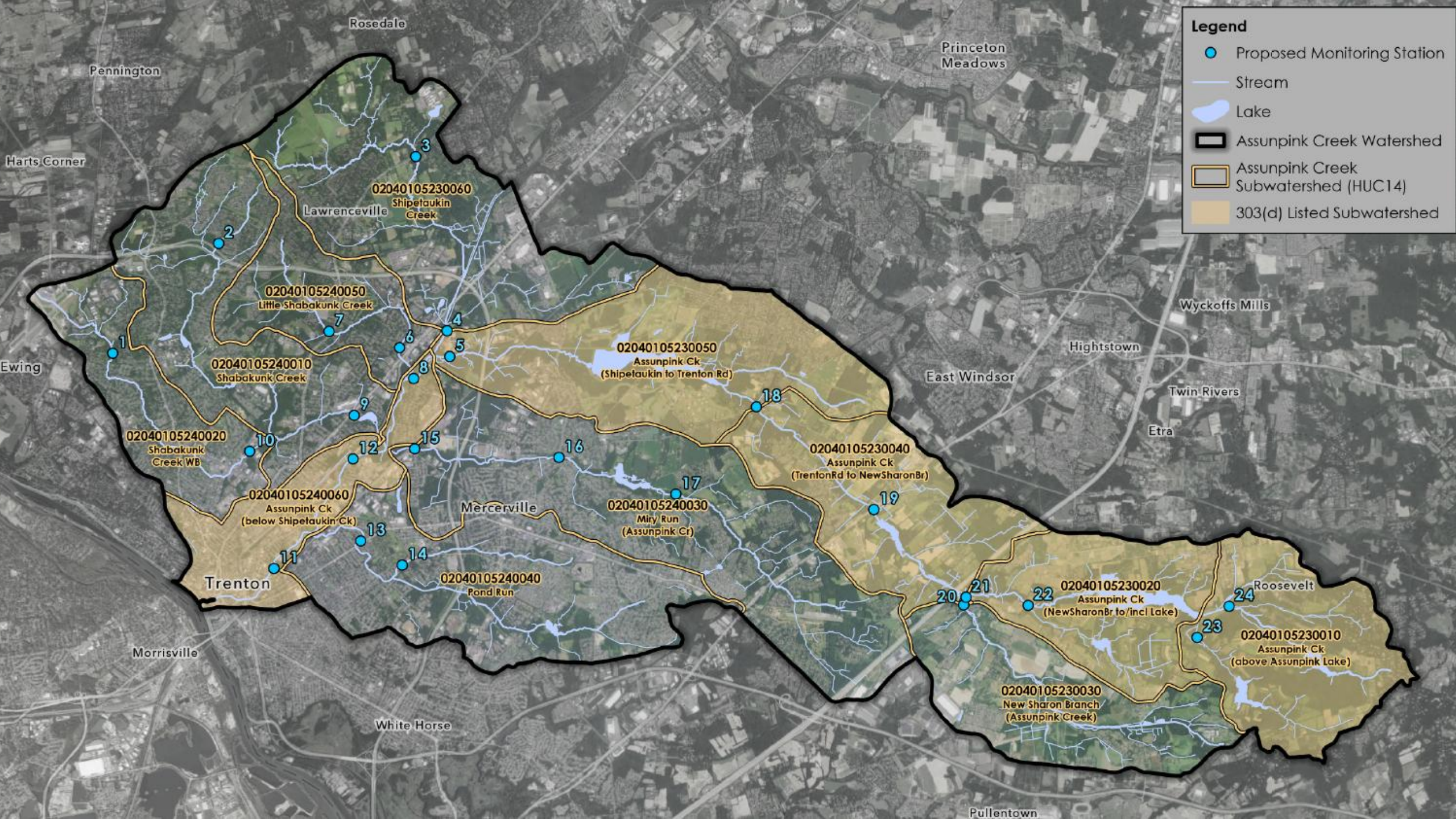
Legend
Proposed Monitoring Station
Stream
Lake
Assunpink Creek Watershed
Assunpink Creek Subwatershed (HUC14)
303(d) Listed Subwatershed
Rosedale
Pennington
Princeton Meadows
Harts Corner
Lawrenceville
Wyckoffs Mills
Hightstown
Ewing
East Windsor
Twin Rivers
Etra
Mercerville
Trenton
Roosevelt
Morrisville
White Horse
Pullentown
02040105230060 Shipetaukin Creek
02040105240050 Little Shabakunk Creek
02040105240010 Shabakunk Creek
02040105240020 Shabakunk Creek WB
02040105240060 Assunpink Ck (below Shipetaukin Ck)
02040105230050 Assunpink Ck (Shipetaukin to Trenton Rd)
02040105230040 Assunpink Ck (TrentonRd to NewSharonBr)
02040105240030 Miry Run (Assunpink Cr)
02040105240040 Pond Run
02040105230020 Assunpink Ck (NewSharonBr to/incl Lake)
02040105230010 Assunpink Ck (above Assunpink Lake)
02040105230030 New Sharon Branch (Assunpink Creek)
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# Stressors Facing Assunpink Creek

- ✓ Flooding
- ✓ Phosphorus (Algal blooms), TSS and Turbidity
- ✓ *E. coli*
- ✓ Metals like Arsenic, Mercury in fish tissue, Lead
- ✓ Dissolved Oxygen and pH

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# TMDL – Pollution Diet for Streams

- ✓ What does TMDL mean?
- ✓ Is it something that I need to worry about?
- ✓ Who is responsible for meeting TMDL?

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Photo by Raúl Mermans García on Unsplash

# Flooding

- Assess scope of flooding and areas of acute concern.
- Prioritize flood risk based on impacts to human health, property, and water quality
- Ameliorate flooding using a regional approach with emphasis on Nature Based Solutions

# Assunpink Water Quality Impairments / TMDLs

- Miry Run: Phosphorus and *E. coli* TMDL
- Assunpink Creek at Peace Street at Trenton: *E. coli* TMDL

# Watershed Survey

- ✓ Desktop Analysis
- ✓ Visual Survey
- ✓ Establish a list of BMPs



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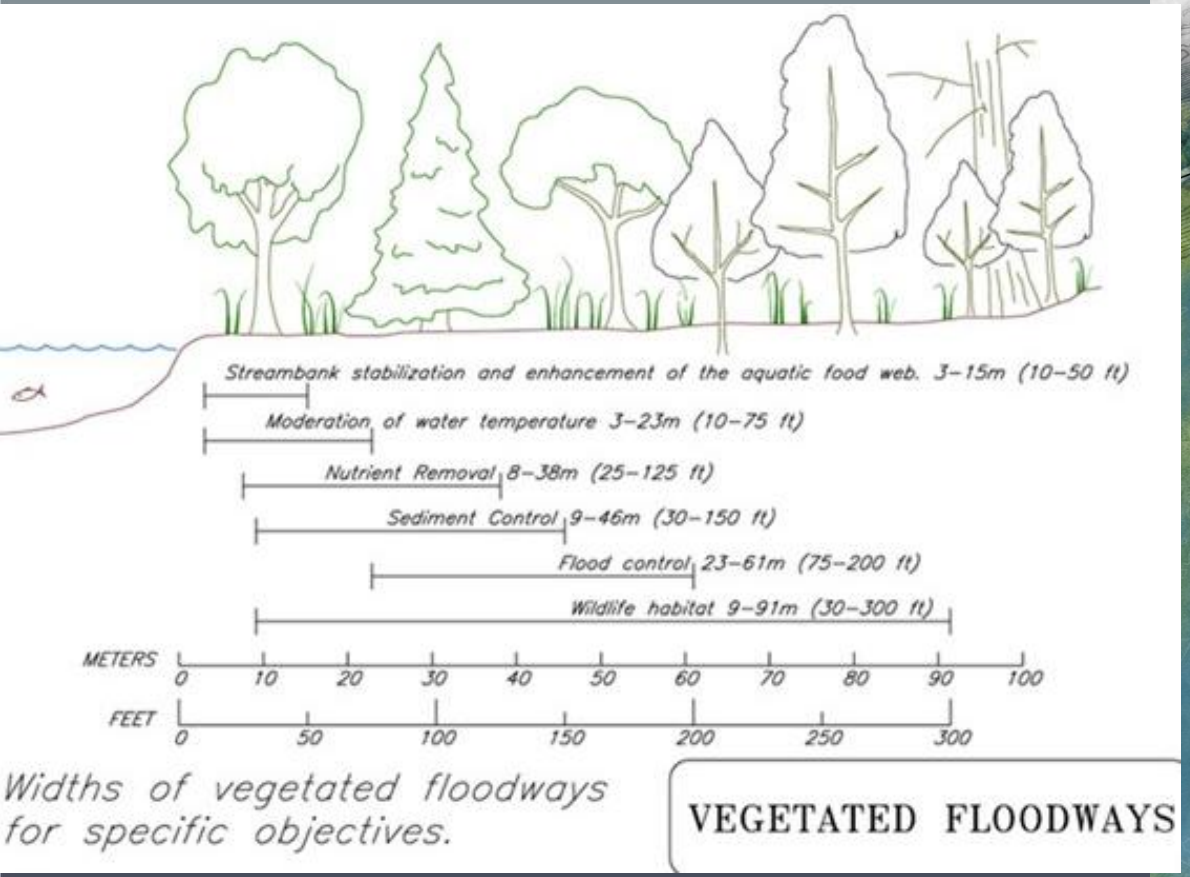
# BMPs





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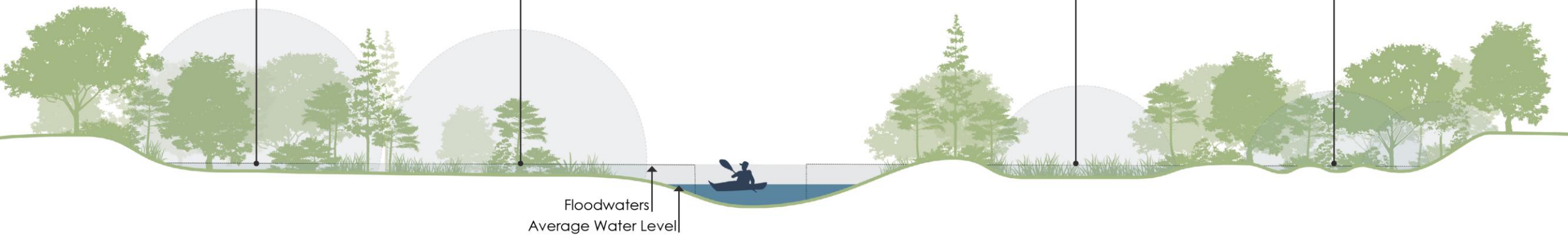
# Ecologically Based Restoration

### Floodplain Reconnection
Floodplain reconnection is the process of restoring a river or stream's ability to naturally access its floodplain during high-flow events.

### Floodplain Bench
A floodplain bench is a gently sloped or flat terrace constructed or restored along the side of a river channel.
prevent natural infiltration.

### Flood Storage
Flood storage refers to the intentional creation or restoration of areas that can temporarily hold excess water during storms, river floods, or coastal surge.

### Wetland Complexes
A wetland complex is a system of multiple wetland types (marshes, swamps, bogs, ponds) that function together to manage water.



# Supplemental Sampling – TWI Funded

- ✓ 24 sites across the Assunpink watershed
- ✓ In-situ, Discrete Water samples, *E. coli*, and metals
- ✓ Initial lab results show watershed has some degradation to water quality

# What's Next?

Spring and Summer water quality sampling

Map and visual watershed assessment

We need input from YOU!

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# QUESTIONS?

**Tanya Dapkey**
Project Manager, Aquatics
Princeton Hydro, LLC
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THANK YOU!

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# Questions?

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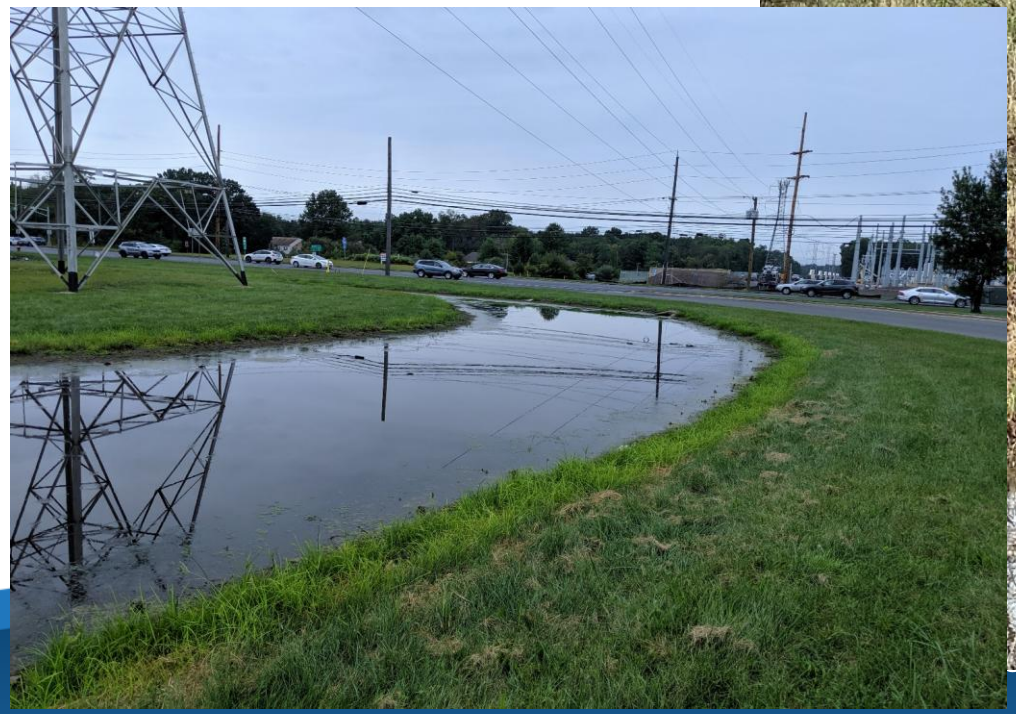
# Public Comment

**What we are looking for:**

- Where, in your municipality, do you see:
  - Flooding
  - Stream Bank Erosion
  - Non-functioning Stormwater Basins
  - Other stormwater related issues

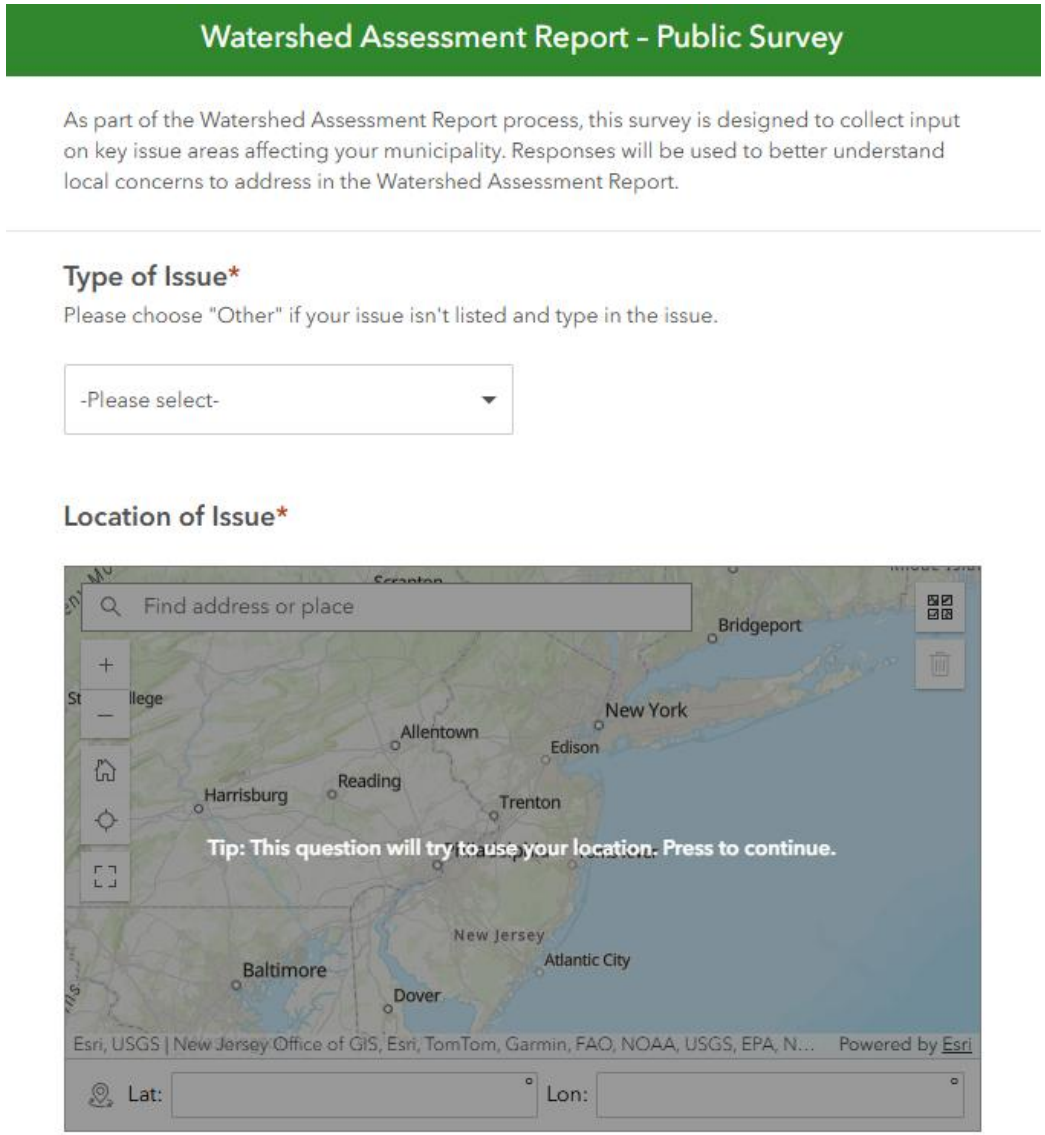


# Survey

The Watershed Institute has created a survey for the public to detail where they have seen issues with stormwater within their municipality.

**Please select:**

- **The type of issue**
  - Flooding, Erosion, Non-functioning Stormwater Basin, or Other
    - A text box will appear for a description of "Other"
- **The Regional Group**
  - Assunpink

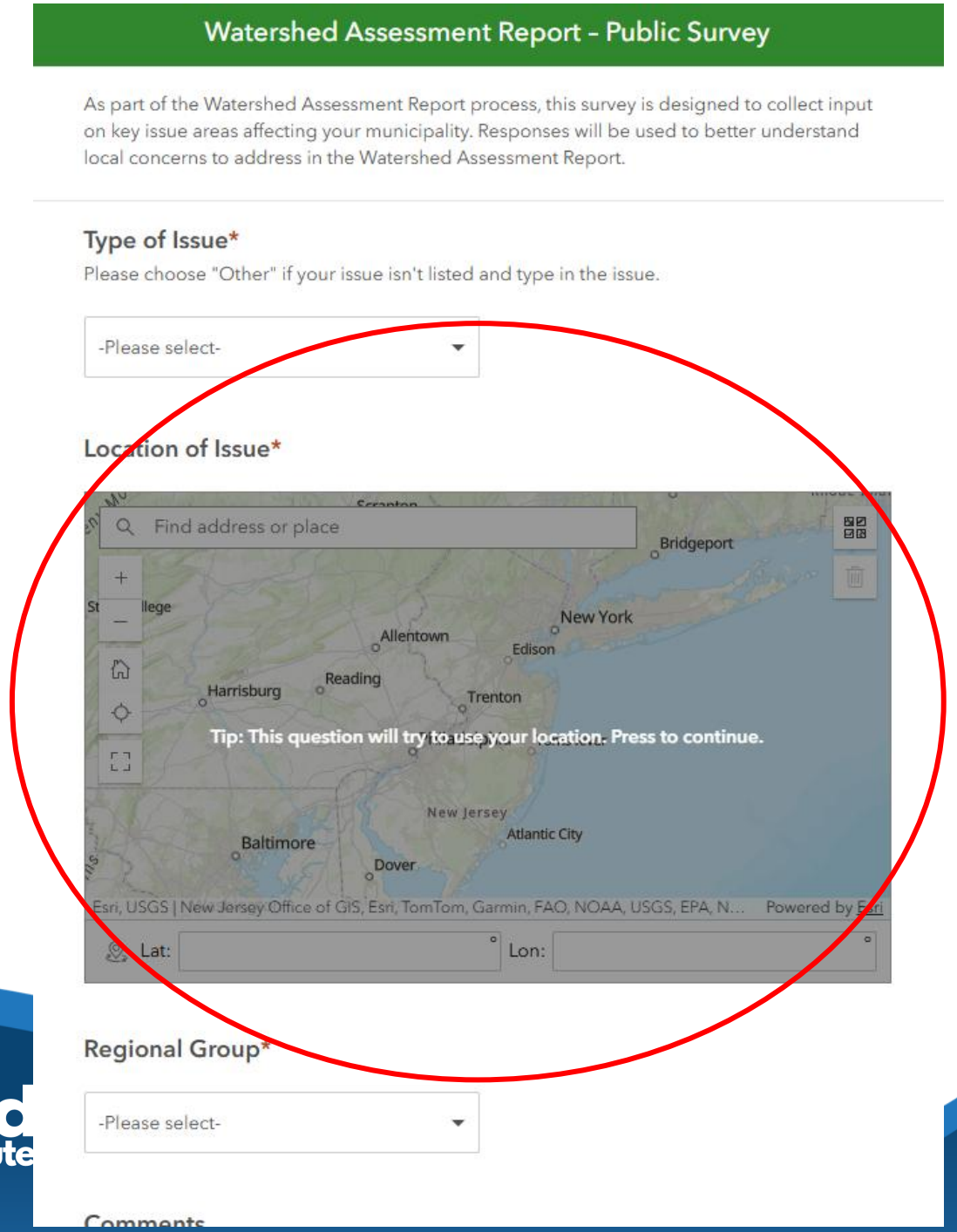


# Survey

The Watershed Institute has created a survey for the public to detail where they have seen issues with stormwater within their municipality.

**Please select:**

- **Location of issue**
  - Click on map
    - Either
      - Allow the map to use your location (if you are close to location of the issue)
      - Input address of issue
  - Where you click on the map, the pin will move to
    - Please put pin near issue

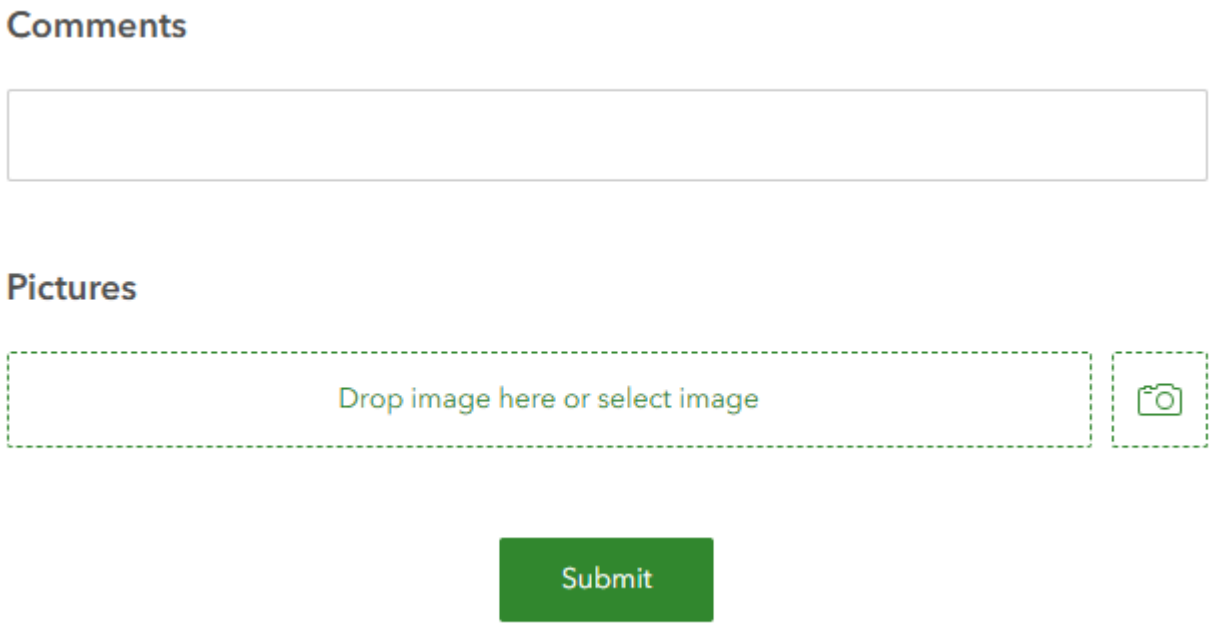


# Survey

The Watershed Institute has created a survey for the public to detail where they have seen issues with stormwater within their municipality.

**Optional (but helpful):**

- Additional comments on issue
- Pictures of issue

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# Public Comment

Please use the QR code to the right to report issue areas within your municipality.

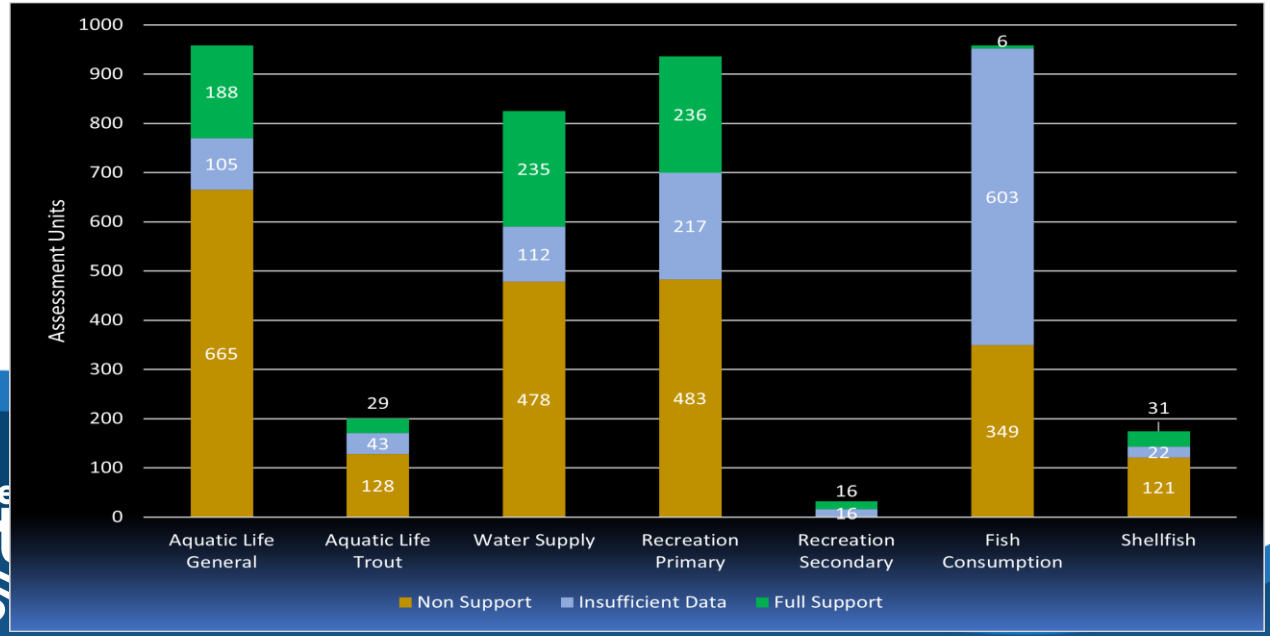
Please submit input by **April 28, 2026**

Email additional comments to: **assunpinkwatershed@thewatershed.org**

# 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



# What is a TMDL?

**T**otal **M**aximum **D**aily **L**oad

- How much pollution is going into a stream now
- How much pollution can the stream handle and meet standards
- Calculate the difference with margin of safety
- Allocate the reductions among various sources.

Table 9. Distribution of TSS WLAs and LAs among source categories for parts of the Carnegie Lake Watershed

| Long Term Average Daily Load (kg/d TSS) | Upper Millstone River Watershed | | | Stony Brook Watershed | | | Carnegie Lake Direct Watershed | | |
|---|---|---|---|---|---|---|---|---|---|
| | Existing Condition | TMDL Allocation | Percent Reduction | Existing Condition | TMDL Allocation | Percent Reduction | Existing Condition | TMDL Allocation | Percent Reduction |
| Sum of Wasteload Allocations (WLAs) | 3,961 | 1,506 | 62.0% | 2,286 | 401 | 82.5% | 602 | 96 | 84.0% |
| Treated Effluent from WWTP Discharges[#] | 502 | 953 | -89.6% | 20 | 38 | -89.6% | 0 | 0 | 0% |
| Stormwater from Residential Land Cover Areas | 1,615 | 258 | 84.0% | 1,529 | 245 | 84.0% | 272 | 44 | 84.0% |
| Stormwater from Other Urban Land Cover Areas | 1,843 | 295 | 84.0% | 737 | 118 | 84.0% | 329 | 53 | 84.0% |
| Sum of Load Allocations (LAs) | 2,775 | 2,060 | 25.8% | 2,624 | 1,328 | 49.4% | 58 | 49 | 14.9% |
| Boundary Inputs | 0 | 0 | 0.0% | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| Tributary Baseflow | 1,267 | 1,267 | 0.0% | 297 | 297 | 0.0% | 29 | 29 | 0.0% |
| Stormwater from Agricultural Land Cover Areas | 851 | 136 | 84.0% | 1,543 | 247 | 84.0% | 10 | 2 | 84.0% |
| Stormwater from Forest and Barren Land Cover Areas | 51 | 51 | 0.0% | 525 | 525 | 0.0% | 6 | 6 | 0.0% |
| Stormwater from Wetlands Land Cover Areas | 605 | 605 | 0.0% | 260 | 260 | 0.0% | 13 | 13 | 0.0% |
| Total Margin of Safety (% of LC) | n/a | 172 | 4.5% | n/a | 152 | 8.0% | n/a | 24 | 14.4% |
| Reserve Capacity (% of WWTP load) | n/a | 103 | 10.8% | n/a | 25 | 66.5% | n/a | 0 | n/a |
| | 6,735 | 3,841 | 43.0% | 4,909 | 1,906 | 61.2% | 660 | 170 | 74.2% |

...tive of discharging up to current permitted flow and existing NJDPES permit TSS limits, the ...to TP being present in suspended solids in WWTP effluent.

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# Watershed Improvement Plans


**Watershed Inventory Report**

**Due: Dec. 2025**

**Watershed Assessment Report**

**Due: Dec. 2026**

**Watershed Improvement Plan Report**

**Due: Dec. 2027**

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# Watershed Inventory Report

- All outfalls
- Drainage areas for each outfall
- Receiving waterbodies for those outfalls
- Water Quality Classification
- Interconnection from municipality into another entity
- Drainage areas for those interconnection
- Interconnection into municipality from another entity
- All storm drain inlets

- Areas associated with each TMDL
- Area associate with each water quality impairment
- Overburdened communities
- Impervious areas
- Location of BMPs

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# 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

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# Watershed Improvement Plan Report

- Assessment of potential water quality improvement projects
- Estimate of percent reduction in loading of TMDL/Impaired
- Integrating public comment on the plan
- How Overburdened communities are prioritized
- Estimate of cost of each project and identification of funding sources
- Estimate of implementation schedule

# How does a Watershed Management Plan get to a Watershed Improvement Plan?

The elements of a Watershed Management Plan can be used to create the Watershed Assessment Report, which is phase 2 of the Watershed Improvement Plan.

A draft of the Watershed Management Plan will be provided to the municipalities within the regional group with enough time for them to use it for the Watershed Assessment Report.

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# Watershed Management Plan

There are 9 elements of a Watershed Management Plan:

1. Project summary, historical data review, identification of causes and sources of pollution
2. Estimate load reductions expected from management measures
3. Description of management measures and description of the critical areas in which those measures will be implemented
4. Estimate amount of technical and financial assistance, associated costs, and /or the sources and authorities that will be relied upon to implement the plan
5. Information and education component to enhance public understanding of the project and encourage participation
6. Schedule for implementation of management measures
7. Description of interim measurable milestones for determining whether management measures are being implemented
8. Evaluation criteria of the management measures
9. Monitoring component

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# Regional Approaches for a Watershed Improvement Plan

What does a regional approach mean for a Watershed Improvement Plan?

- Municipalities within a single watershed will work together to create a Watershed Assessment Report, which can have some benefits.

Benefits:

- Studying the entire watershed helps identify smarter and more efficient solutions.
- Working together reduces duplicated efforts, so towns aren't spending time and resources studying the same issues separately.
- Watersheds don't follow municipal boundaries, so regional solutions can be more cost-effective because planning and identifying solutions is more efficient.
- Working together reduces the chance that DEP will reject inconsistent plans and require municipalities to revise their plans.

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# 2026 Technical Fridays

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

***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***

**SAVE THE DATE**

**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/*

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

# REAL RULES

## *GET THE FACTS ON NEW JERSEY'S NEW RESILIENT ENVIRONMENTS AND LANDSCAPES RULE*

**Speakers:**

- **Danielle McCulloch**
- **Vincent Mazzei**
- **Michael Pisauro, Esq.**

**APRIL 10 | 12 P.M. | ON ZOOM**

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# BENEFITS OF RESTORATION

## *IMPACTS OF RESTORATION EFFORTS AND SUCCESSFUL PROJECTS*

Continuing Education Available

**Speakers:**

- **Jon Kasitz, RES**
- **Hannah Kalk, RES**
- **Mark Gallagher, Princeton Hydro**
- **Michael Pisauro, Esq., The Watershed Institute**

**MAY 8 | 12 P.M. | ON ZOOM**

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# Thank You!

If you have any other questions, comments, or concerns, please email: **assunpinkwatershed@thewatershed.org**

Recording of this meeting will be available on The Watershed Institute's YouTube channel: **@TheWatershedInstitute**

Public Survey QR Code

Submit by **April 28, 2026**