

# *Riverine Flooding and Stormwater Runoff in Piscataway, NJ*

April 9, 2026

Heather Fenyk, Ph.D., AICP/PP – Executive Director

Lower Raritan Watershed Partnership



Thank you to Piscataway's New Market Fire Department for their heroic lifesaving efforts, rescuing occupants of numerous vehicles from flooded streets, December 18, 2023.

*Photo credit: PatchNJ*



A total of 30 New Jersey residents died in Hurricane Ida-related floods, including a Piscataway resident who lost his life on River Road, September 1, 2021.

*Photo credit: PatchNJ*

# About the Lower Raritan Watershed Partnership

Restoring the Raritan through Science & Stewardship

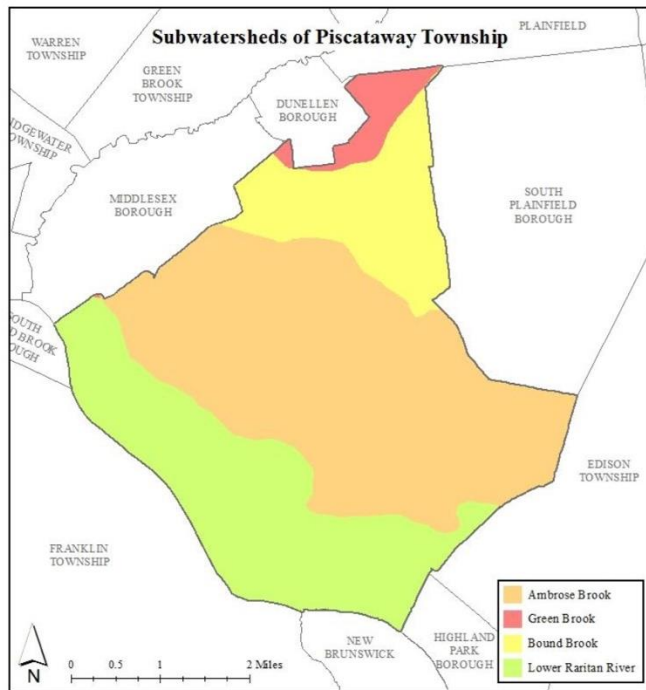
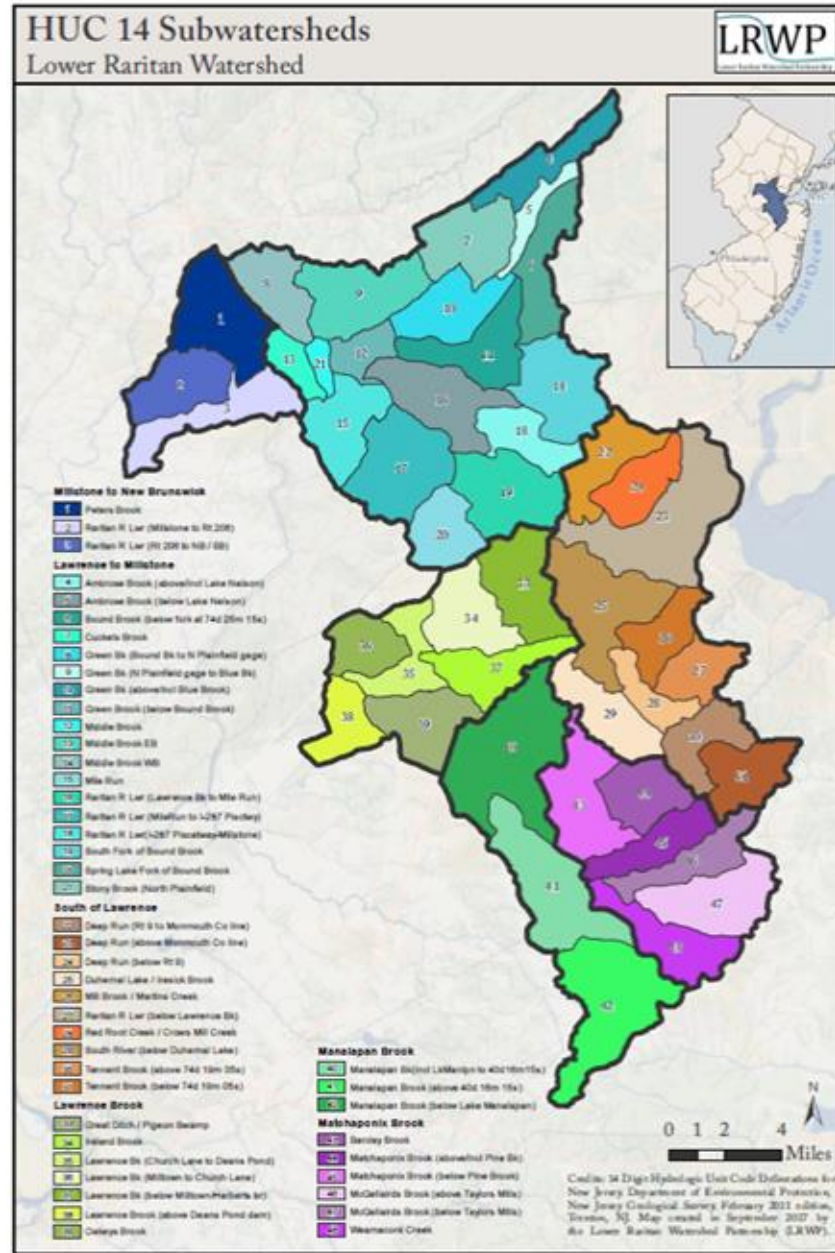


Figure 4: Map of the subwatersheds in Piscataway Township



**LRWP**  
Lower Raritan Watershed Partnership



L R W P

[www.loweraritanwatershed.org](http://www.loweraritanwatershed.org)

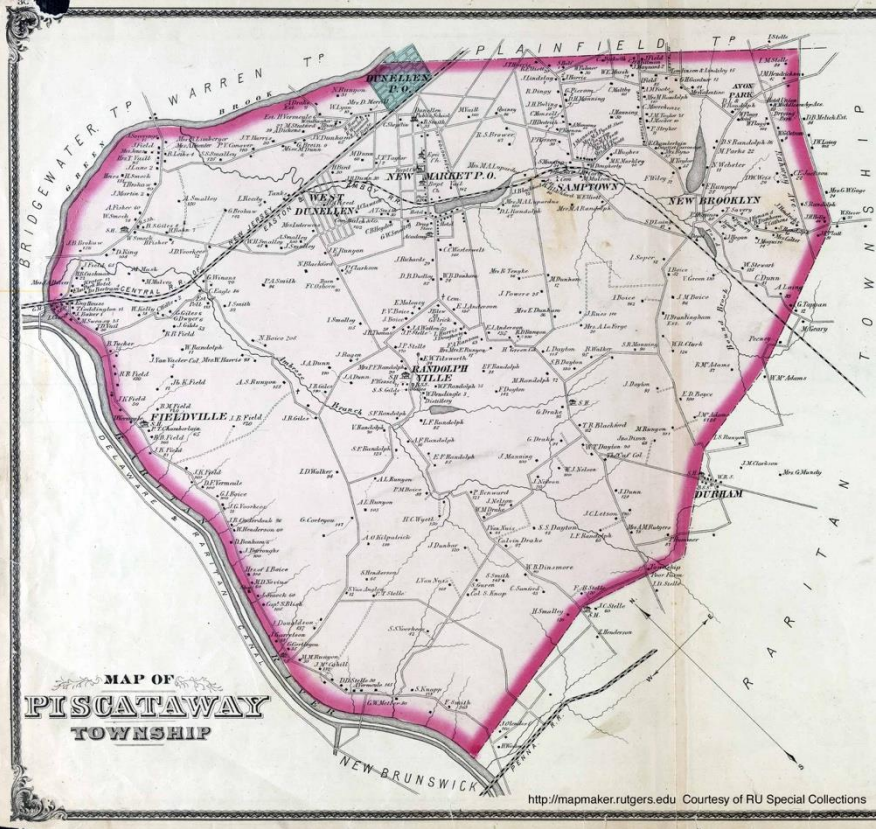
The LRWP vision:

*A healthy Raritan River and Lower Raritan Watershed community, restored and sustained through collaboration, participatory science, and stewardship.*

# Lower Raritan Watershed Stakeholder-identified concerns, needs & involvement

CONCERNS	Why a regional / watershed perspective?	How community involvement is key
Water quality degradation	<ul style="list-style-type: none"> <li>• Historic and ongoing pollution affects us all - a regional perspective can help prioritize clean-ups.</li> <li>• Help bring attention to how upstream polluting affects downstream communities</li> </ul>	<ul style="list-style-type: none"> <li>• Communicate spills and issues</li> <li>• Volunteer water quality monitors (pathogens sampling &amp; stream assessments)</li> <li>• Assist with clean-ups</li> </ul>
Habitat fragmentation	<ul style="list-style-type: none"> <li>• Municipal “Home Rule” means that towns don’t think of the impacts of their land use choices on their neighbors (transportation, development, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Stewardship &amp; advocacy for impervious cover reduction &amp; Green Infrastructure</li> <li>• Identify and organize around development threats</li> <li>• Develop urban forestry plans &amp; gardens</li> </ul>
Flooding (stormwater and sea level rise)	<ul style="list-style-type: none"> <li>• Water does not respect municipal boundaries!</li> </ul>	<ul style="list-style-type: none"> <li>• Regional resiliency planning: strategic interventions to minimize costs and maximize benefits for all</li> </ul>
Access to water & natural resources for recreation	<ul style="list-style-type: none"> <li>• Coordination among municipalities for communicating trails networks, access points, amenities</li> </ul>	<ul style="list-style-type: none"> <li>• Trail network identification, development &amp; clearing</li> <li>• Developing regional green and blue trail maps</li> </ul>
Environmental Justice	<ul style="list-style-type: none"> <li>• Regional approach to ensuring equitable access to environmental resources</li> <li>• Regional approach to addressing environmental remediation &amp; restoration</li> </ul>	<ul style="list-style-type: none"> <li>• Community engagement to redress prior harms and advance equitable solutions</li> </ul>

# The Changing Piscataway Landscape



Map of Piscataway, 1876

## Piscataway Land Uses, Approx 1850

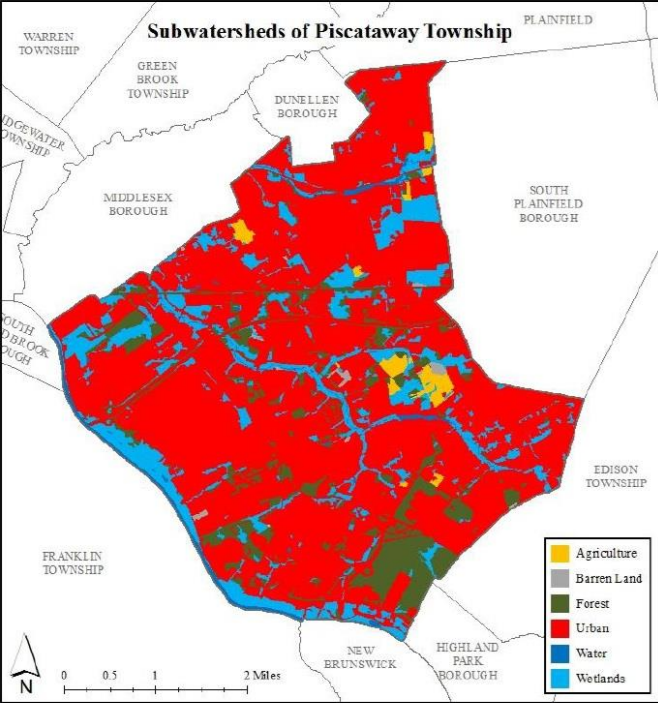
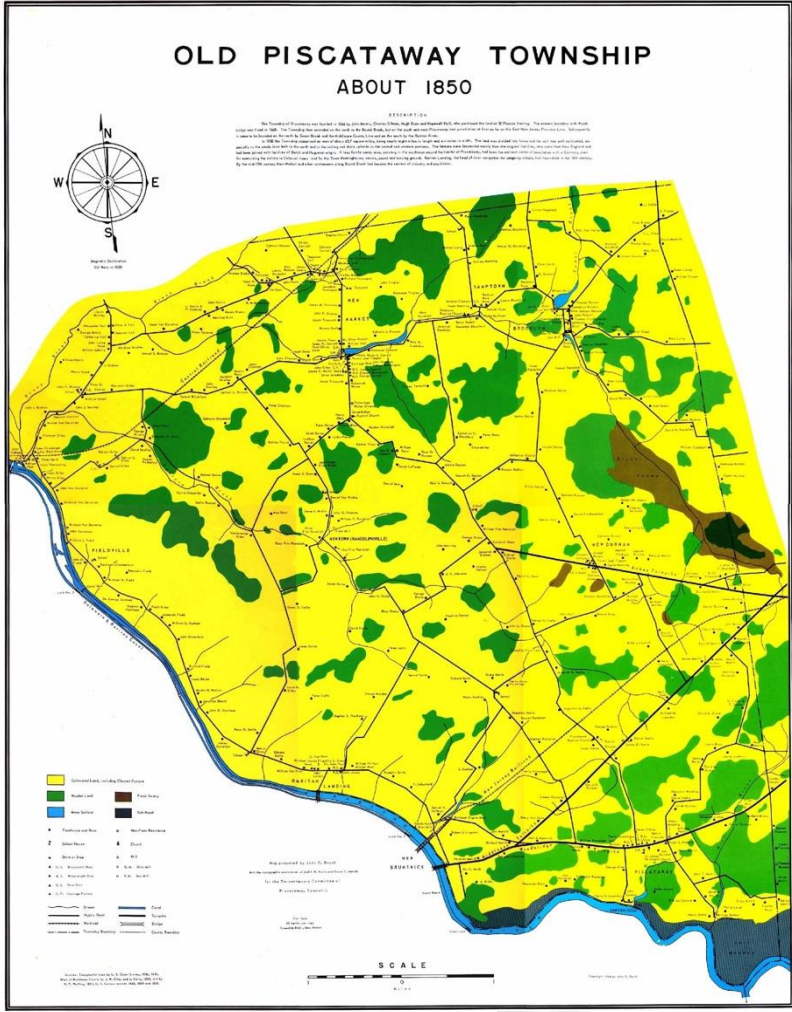


Figure 1: Map illustrating the land use in Piscataway Township

## Piscataway Land Uses, 2015

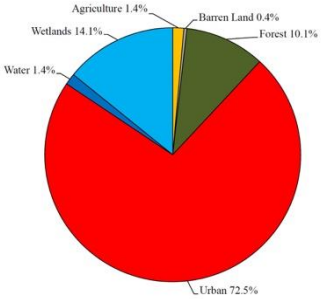


Figure 2: Pie chart illustrating the land use in Piscataway Township

# Understanding the Changing Piscataway Landscape



**How has development and land use changed how the land functions from a watershed perspective?**

Most of our streams and wetlands have been filled in, buried, or culverted to create space for industrial and residential development.

These “hidden streams” make us highly vulnerable to flooding and water quality pollution today.

<https://newjersey.maps.arcgis.com/apps/instant/media/index.html?appid=fcad50ae41634cd1aa293e3e47ce1c00>

**How do we “hide” streams? The case of the culvert:** A culvert is a structure that channels water past an obstacle or to channel a subterranean waterway. Typically embedded and surrounded by soil, a culvert may be made from a pipe, reinforced concrete or other material.



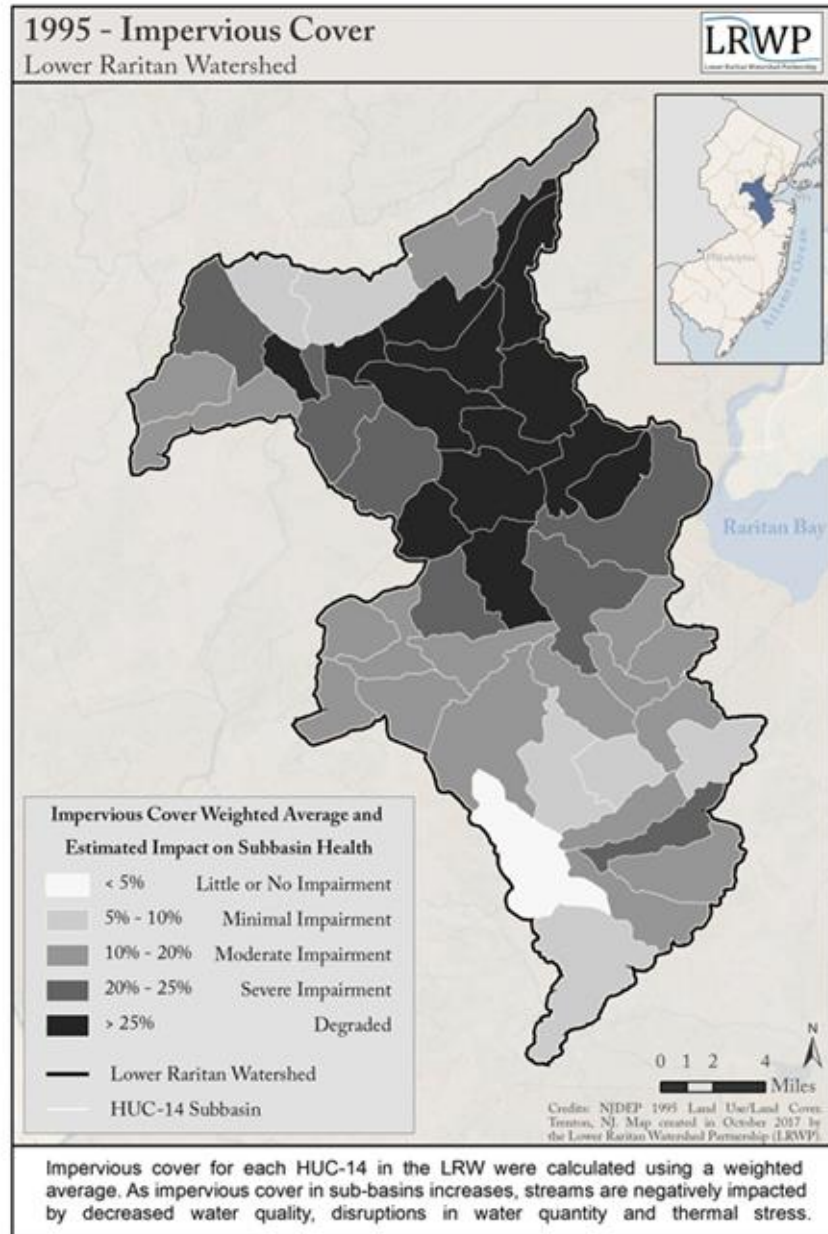
*Photo series: Susan Edmunds*



*Convergence of stream flow at Highland Park’s Mill Brook.*

*Note sedimentation on left – direct flow from culvert.  
Note clearer stream on right - flow through forested buffer.*

# Hidden streams (culverted or developed) cause flooding...



## Flooding Traps Piscataway Woman; DPW Worker Saves Her

Possumtown Road, last Thursday: A woman's car became stuck in flood waters and she was screaming for help. The water was up to her chin.



Carly Baldwin, Patch Staff

Posted Tue, Sep 18, 2018 at 1:59 pm ET | Updated Tue, Sep 18, 2018 at 4:05 pm ET

0



Flooding of Piscataway's Ambrose Brook at Possumtown Road, 2018

## ...and pose risks to aging water infrastructure



New Brunswick (George Street) 34-foot sinkhole caused by record precipitation overwhelming a culverted stream, 2018

*Photo: Heather Fenyk*



South Amboy (Gordon Street)  
20-foot sinkhole caused by water main break, 2015

*Photo: South Amboy police*

**Take Action!**

Addressing Flooding and Water Quality Issues in Piscataway Via Stormwater Management Best Practices



Riverside Park, Piscataway, NJ

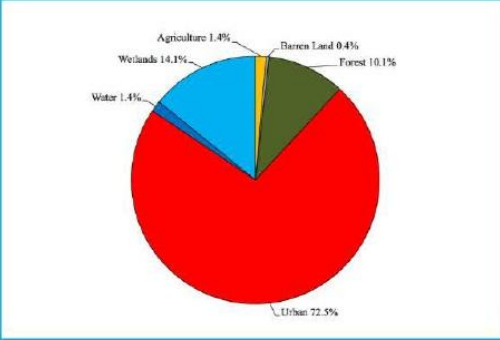


**FINDINGS FOR RIVERSIDE PARK**

- This site exceeded the federal standard for Enterococcus pathogens **61 times** in the last five years. This is more than any other non-swimming public access beach site on the Raritan River
- This site consistently exceeds federal standards for Fecal Coliform
- High pathogens and fecal levels are linked to precipitation

**CAUSES OF POLLUTION**

72.5% of Piscataway is urbanized. Urban communities have more hard surfaces (impervious cover), which increases flooding and stormwater runoff.



Stormwater runoff carries pollutants into our waterways. Pervious land surfaces like wetlands and forests work to naturally filter out pollutants before they enter the water and are important for water quality and environmental health

Sources of stormwater pollution:

- Fertilizers/Pesticides/Grass Clippings
- Pet/Animal waste
- Litter
- Improperly functioning wastewater & stormwater infrastructure

**STORMWATER MANAGEMENT**

Under the Federal Clean Water Act, all New Jersey Municipalities are required to secure Municipal Separate Storm Sewer System (MS4) permits.

These permits focus on:

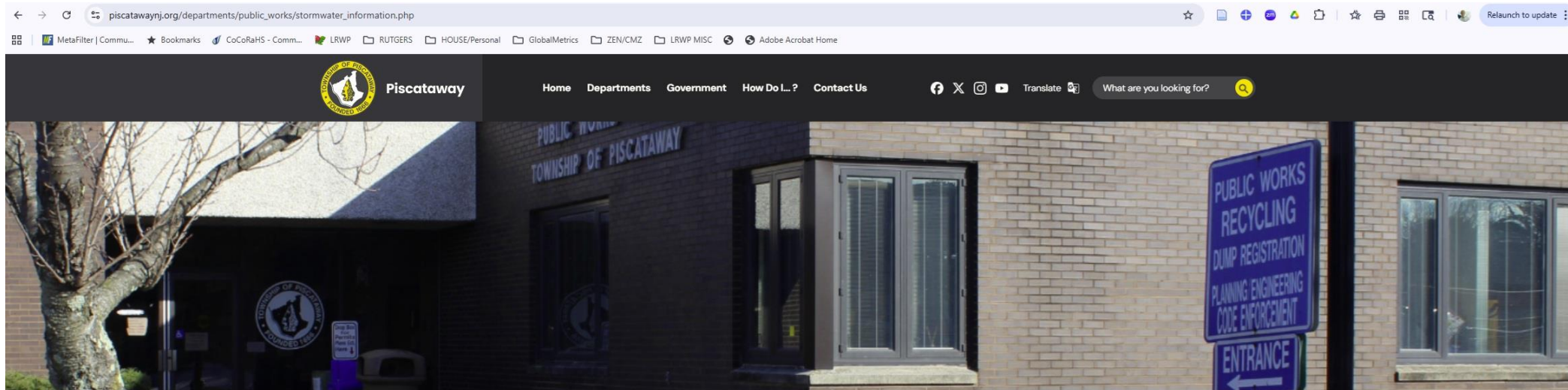
- Pollution preventions measures
- Treatment and removal techniques
- Water Quality Monitoring
- Measures to control discharge of stormwater runoff.

Piscataway should consider the following to improve stormwater management:

- Seek funding via the Bipartisan Infrastructure Law to modernize stormwater and sanitary sewage infrastructure.
- Adopt and implement an impervious cover reduction strategy
- Protect and restore all remaining wetlands and forests
- Increase education and outreach around water quality, environmental health and stormwater management

# Take Action!

## Addressing Flooding and Water Quality Issues in Piscataway Via Stormwater Management Best Practices



- ### Public Works
- Division Of Administration & Operations
  - Division Of Buildings & Grounds / Parks & Public Playgrounds
  - Division Of Fleet Maintenance
  - Division Of Recycling & Solid Waste
  - Division Of Sewers
  - Division Of Streets & Roads
  - Report An Issue
  - Service Cards
  - Stormwater Information

## Stormwater Information

Home > Departments > Public Works > Stormwater Information

- [Stormwater Pollution Prevention Program \(2024\)](#)
- [Solutions to Storm Water Pollution](#)
- [MS4 Outfall Map](#)

Ordinances related to stormwater management:

- [Pet Waste](#)
- [Wildlife Feeding](#)
- [Litter Control](#)
- [Improper Disposal of Waste: Protection of Storm Sewer System](#)
- [Illicit Connection](#)
- [Private Storm Drain Inlet Retrofitting](#)
- [Stormwater Management](#)
- [Tree Removal/Replacement Plan](#)
- [Dumpsters and Containers](#)
- [Yard Waste Placed in Street Restricted](#)
- [Privately Owned Salt Storage](#)

### Contact DPW


- 505 Sidney Rd
- (732) 562-2309
- (732) 529-2501



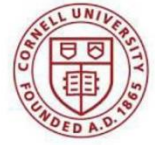
# Take Action!

Addressing Flooding and Water Quality Issues in Piscataway via Culvert Retrofits (a win-win for habitat AND hydraulics!)

Aquatic Connectivity

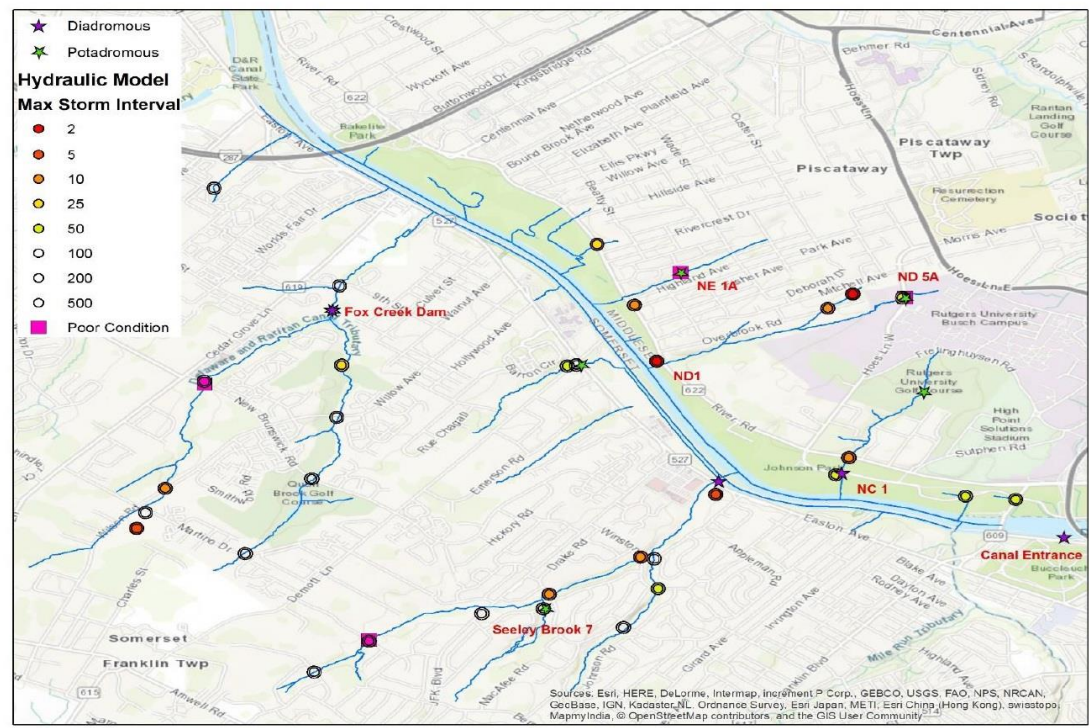


Hydraulic Capacity



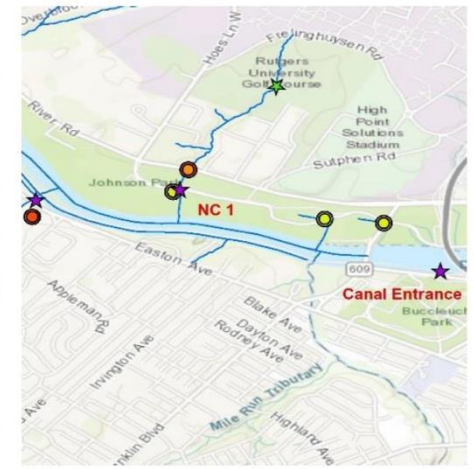
Water Resources Institute  
Cornell University  
Cornel Culvert Model

## Raritan Restoration Recommendations



### NC 1

A diadromous barrier that also can only accommodate a 50 year storm.



### ND 1

Can only accommodate a 2 year storm event.



## Take Action!

# Addressing Flooding and Water Quality Issues in Piscataway via Data & Story Telling



## Developing Piscataway's "Water Story"

A MUNICIPAL WATER STORY CONSISTS OF FIVE CHAPTERS: WATER RESOURCES IN YOUR MUNICIPALITY, COMMUNITY ACCESS TO WATER, DRINKING WATER, WASTEWATER, AND STORMWATER. IT IS CREATED TO IDENTIFY AND PLAN FOR IMPROVEMENTS IN WATER MANAGEMENT.

*Piscataway: what are your stories related to water in your community?*

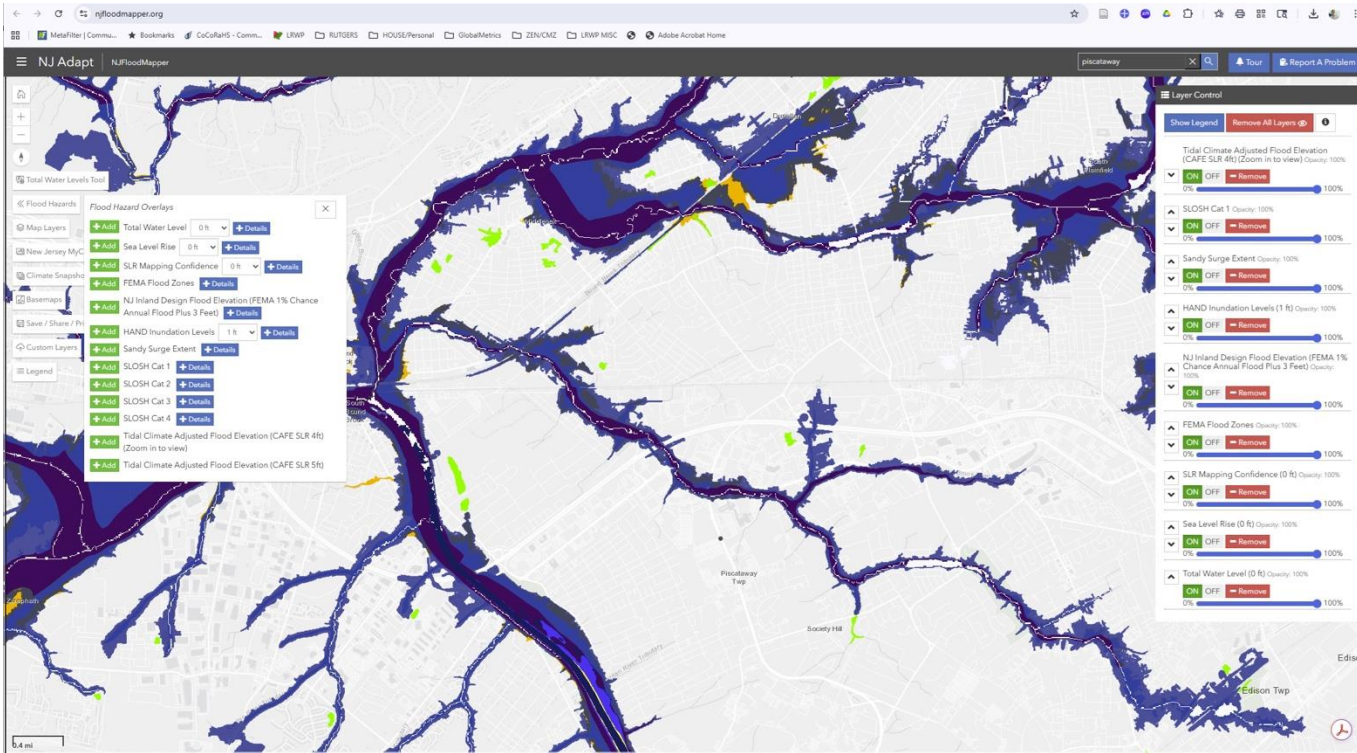
### THINGS TO CONSIDER:

- Where is your favorite place to see or access water?
- Have you been impacted by flooding in the municipality?
- Do you worry about your drinking water quality?
- Is your home serviced by a septic system?
- What recreational activities do you enjoy in the waters of Piscataway?

**Case Study:** The Lower Raritan Watershed Partnership partnered with the Borough of South River to create a Municipal Water Story that now guides the Borough's policies and land use decision making around clean water and resilience. *Scan the QR code to read the report!*



NJFloodmapper.org  
Identifying flood risk in YOUR community



**Take Action!**

Addressing Flooding and Water Quality Issues in Piscataway  
via Data (Gathering) & Story Telling - **JOIN US!**

# Thank you!

**“Cultivating a culture of science & stewardship”**

[admin@lowerraritanwatershed.org](mailto:admin@lowerraritanwatershed.org)

[lowerraritanwatershed.org](http://lowerraritanwatershed.org)



LRWP Website



LRWP Events  
Registration



LRWP Reports



## BECOME A RARITAN RIVER CLEAN WATER ADVOCATE

### SPRING 2026

*Workshops & Trainings*

<u>April 9</u>	<u>April 30</u>	<u>May 18</u>
<b>WQ Policy Workshop with ANJEC</b> @ East Jersey Olde Town Village	<b>Assessing Landscape Impacts on the Raritan @ Middlesex County EARTH Center</b>	<b>WQ Monitoring Training with EPA @ Middlesex County EARTH Center</b>

[www.lowerraritanwatershed.org](http://www.lowerraritanwatershed.org)

