

June 24, 2022

# Telling your municipal water story

IG: Sustainable\_Jersey | Twitter: @SJ\_Program and @SJ\_Schools | FB: @SustainableJersey | LinkedIn: sustainable-jersey

### Agenda

- 1. Welcome
- 2. Drinking Water
- 3. Watershed Organizations
- 4. Green Teams
- 5. Municipal Staff
- 6. Question and Answers



### Municipal Water Story

Foundational Action for Water Gold

- Holistic Approach
- It's a Story
- Exciting Opportunity to Announce



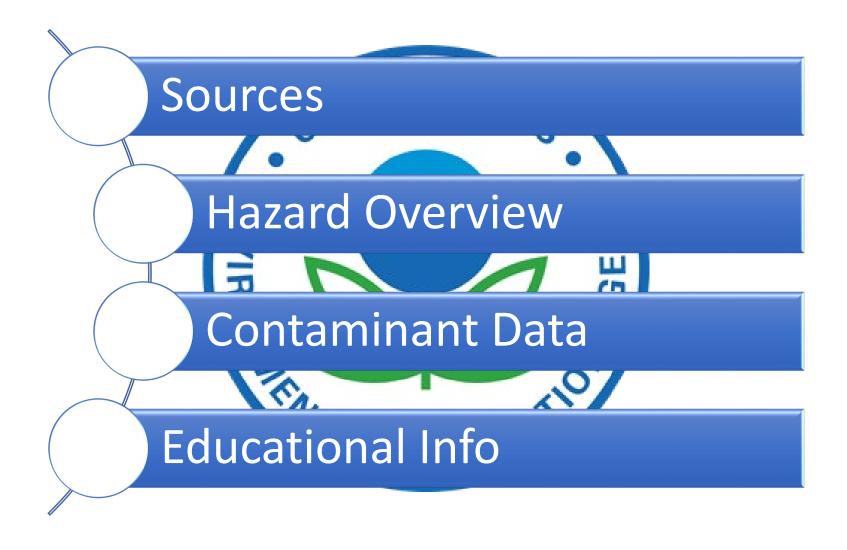




### Municipal Water Story

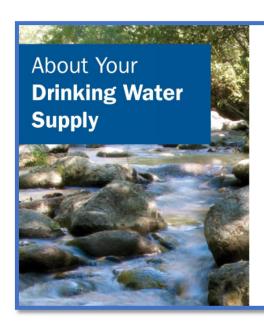
**Drinking Water** 

### **Consumer Confidence Reports**





### **Water Quality Report**



#### WHERE YOUR WATER COMES FROM

Shrewsbury area of system-Groundwater from the Potomac-Raritan-Magothy Aquifer (PRM) and surface water from the Glendola Reservoir, the Manasquan River/Reservoir, the Shark River, and the Swimming River/Reservoir.

Lakewood/Howell area of system-14 wells, 1 surface water supply. This system's source water comes from the Englishtown aquifer, Kirkwood-Cohansey aquifer, Mount Laurel-Wenonah aquifer, Potomac-Raritan-Magothy aquifer, upper Potomac-Raritan-Magothy aquifer, and Vincentown aquifer.

Ocean County area of system-5 wells and 1 purchased ground water source. This system's source water comes from the Englishtown aquifer system, Potomac-Raritan-Magothy aquifer, and upper Potomac-Raritan-Magothy aquifer. Also, bulk transfer of surface water from Jumping Brook Treatment Plant. Ortley Beach/Pelican Island area of the system- This system can purchase water from the Lavallette Water Dept., and Seaside Heights Water Department. Also, bulk transfer of surface water from Jumping Brook Treatment Plant.

CONTAMINANTS THAT MAY BE PRESENT IN SOURCE WATER INCLUDE:					
Microbial Contaminants	such as viruses and bacteria, which may come from sewage treatment plants, septic systems agricultural livestock operations, and wildlife.				
Inorganic Contaminants	such as salts and metals, which can be naturally occurring or may result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.				
Pesticides and Herbicides	which may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses.				
Organic Chemical Contaminants	including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also, come from gas stations, urban storm water runoff, and septic systems.				
Radioactive Contaminants	which can be naturally occurring or may be the result of oil and gas production and mining activities.				

DISINFECTANTS - Collected in the Distribution System and at the Treatment Plant									
Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Compliance Result	Range Detected	Typical Source		
Chloramin (ppm) (Distribution System) <sup>1</sup>	2021	Yes	NA	MRDL = 4	1.55	0.05 to 3.0	Water additive used to control microbes.		
Chloramine (ppm) (Surface Water –Entry Point) <sup>2</sup>	2021	Yes	MRDLG = 4	TT: Results ≥ 0.20	0.59	059 to 3.15	Water additive used to control microbes.		



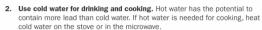
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Visit newjerseyamwater.com/leadfacts to learn how to identify your service line material, then scan the QR code to the right to self-report your service line material.



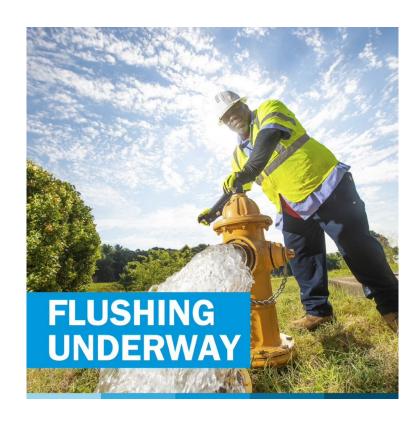
1. Flush your taps. The longer the water lies dormant in your home's plumbing, the more lead it might contain. If the water in your faucet has gone unused for more than six hours, flush the tap with cold water for 30 seconds to two minutes before drinking or using it to cook. To conserve water, catch the running water and use it to water your plants.



- 3. Routinely remove and clean all faucet aerators.
- Look for the "Lead Free" label when replacing or installing plumbing fixtures.
- Follow manufacturer's instructions for replacing water filters in household appliances, such as refrigerators and ice makers, as well as home water treatment units and pitchers. Look for NSF 53 certified filters.
- Flush after plumbing changes. Changes to your service line, meter, or interior plumbing may result in sediment, possibly containing lead, in your water supply. Remove the strainers from each faucet and run the water for 3 to 5 minutes.



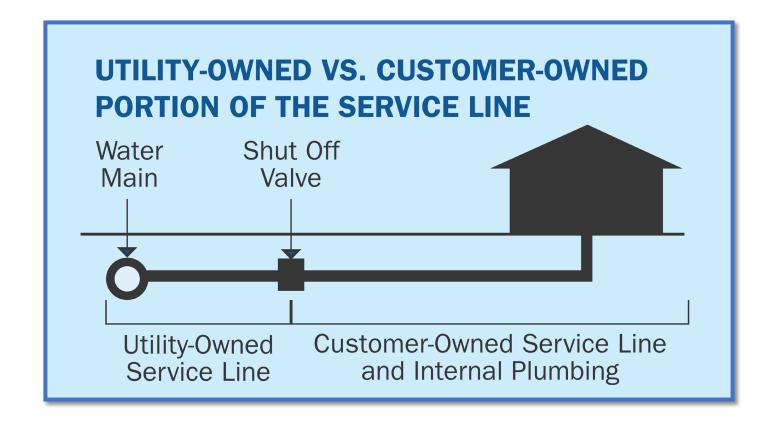
#### **Common Concerns**







#### **Common Concerns**







Kevin Rodier
Engineering Project Manager

kevin.rodier@amwater.com



### Municipalities & Watershed Nonprofits: Important partners in protecting water resources

Kristi MacDonald, PhD
Director of Science & Stewardship
kmacdonald@raritanheadwaters.org

Sustainability Forum June 24, 2022

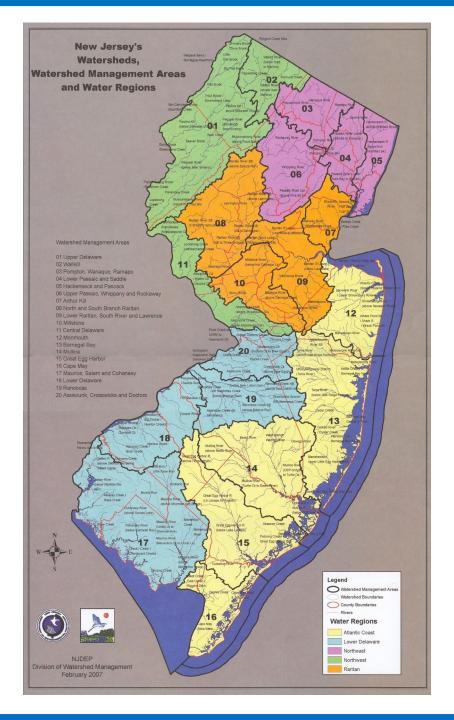




### **Topics**

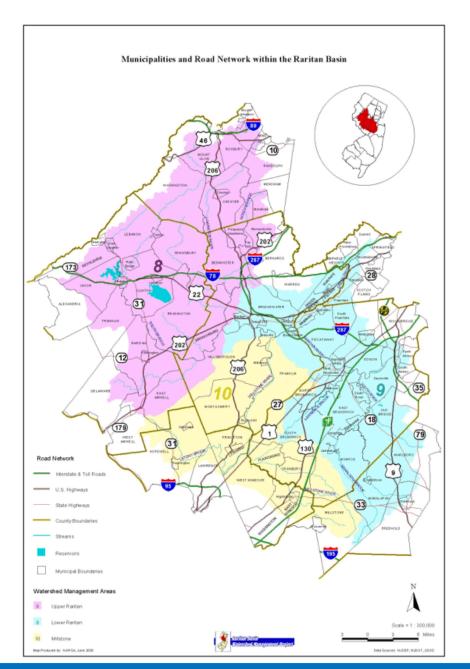
- Local and regional watershed associations and non-Profits, valuable resources for municipalities (and vice versa)
- Raritan Headwaters Association who we are and what we do
- Partnering for Sustainable Jersey Water Gold and other environmental initiatives
  - Data on water quality
  - Projects to protect and restore water resources
  - Outreach & Engagement with various constituents
- Finding your local partners





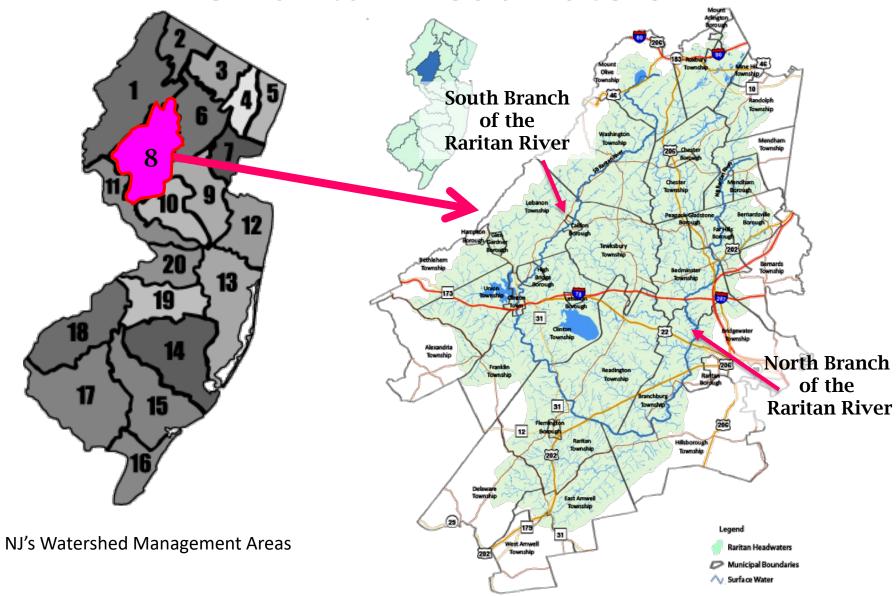


### Raritan River Basin





### The Raritan Headwaters



### Our Mission

Since 1959, securing clean water for present and future generations. We protect land and water in our watershed and beyond through science, stewardship, preservation, education and advocacy.



### Partnering to protect land and water resources (and to achieve Water Gold Certification!)





### Data on Water Quality





### Summary of Data and Water Quality Reports

**RHA Watershed Conservation Plan** 

**RHA Annual Watershed Report Card** 

**RHA Stream Site Data** 

**RHA 2017 Stream Trend Analysis** 

**RHA Bacteria Monitoring Data** 

**RHA Well Test Data** 

**RHA Groundwater Trend Analysis** 

**Private Well Testing Data** 

State of the Raritan Report

NJDEP Integrated Reports (2016 Focus on the Raritan)

Watershed Restoration and Protection Plans

Raritan Basin Watershed Management Plan (other regional WMPs)

**Stormwater Management Plans** 

Readington ICA and RAP, Rutgers Water Resources Program (available for many municipalities in NJ)

2020 Category 1 Upgrades

NJ GeoWeb, STORET or National Water Quality Portal

Conservation BluePrint

North Atlantic Aquatic Connectivity Consortium

NJDEP CHANJ – Connecting Habitat Across New Jersey

**USGS Water Data** 

USGS reports (e.g., arsenic and nitrates in groundwater)

Municipal ERIs (NRIs)

**Highlands ERI** 

Local Water Purveyors CCR (Community Confidence Report)



## Are aquatic ecosystems in my municipality healthy?



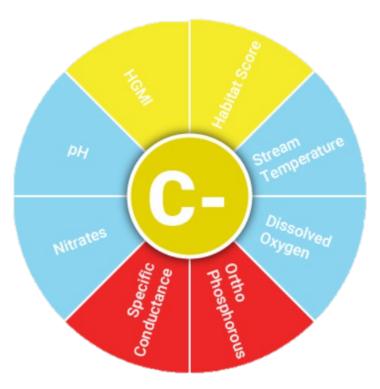


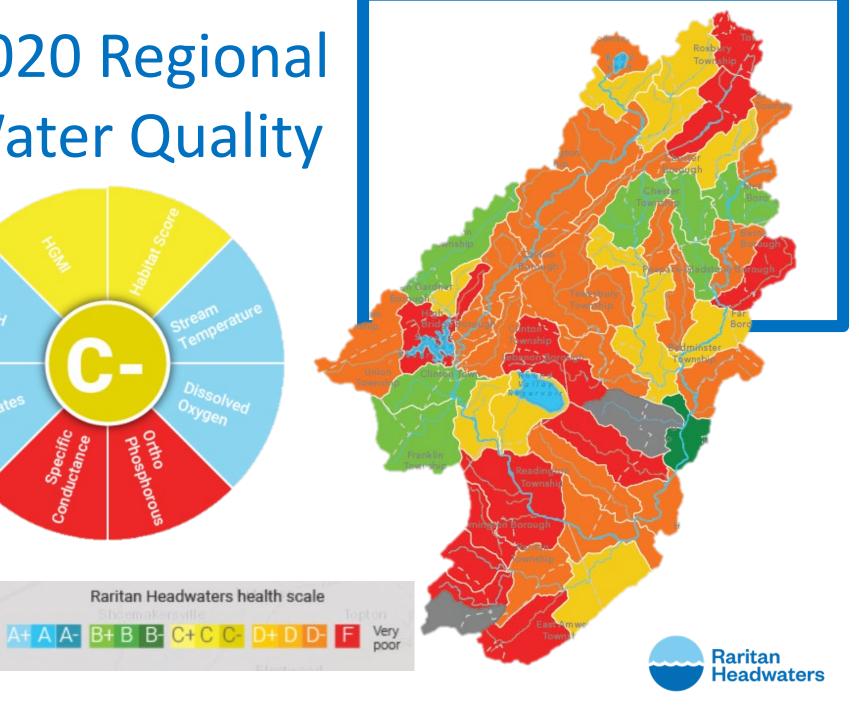
### Volunteer Stream Monitoring Program



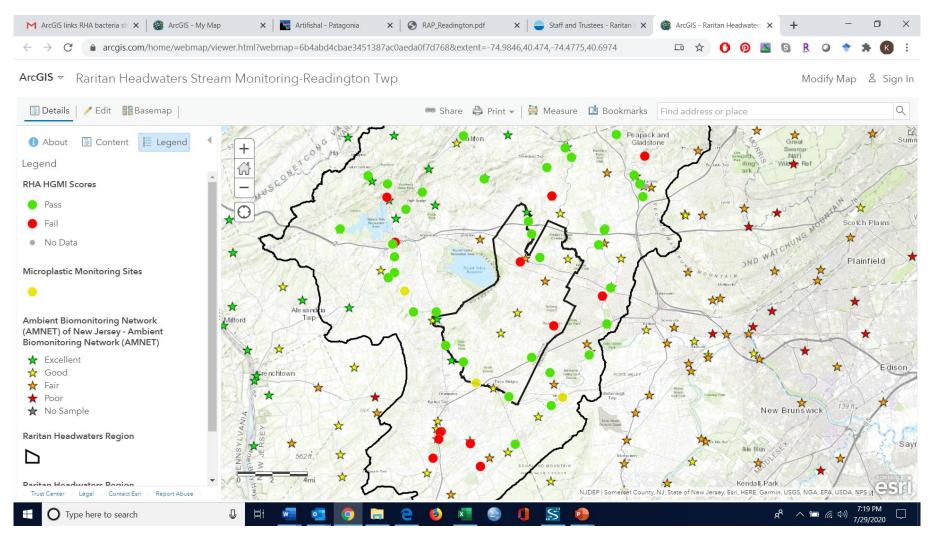


2020 Regional Water Quality





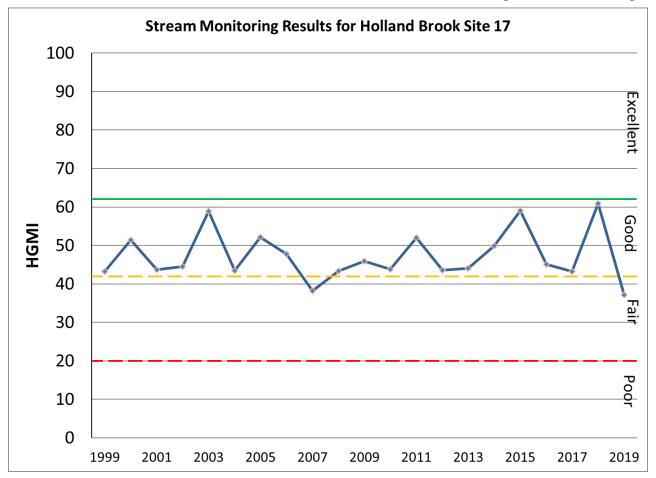
#### RHA and NJDEP Stream Data







### Headwate Holland Brook Site 17 (HB17)



**Habitat Failures 2019:** Bank stability, riparian zone width, velocity depth regime (habitat heterogeneity)

Chemical failures 2019: None

### Is our water safe to drink?







### WELL TESTING PROGRAM

- RHA partners with municipalities throughout the region to offer residents the opportunity to test their well water.
- Testing is done by a state-certified laboratory for analysis.
- Test results come directly to us, and we share the results directly with residents.

partnership \* community service \* convenience \* affordability \* privacy

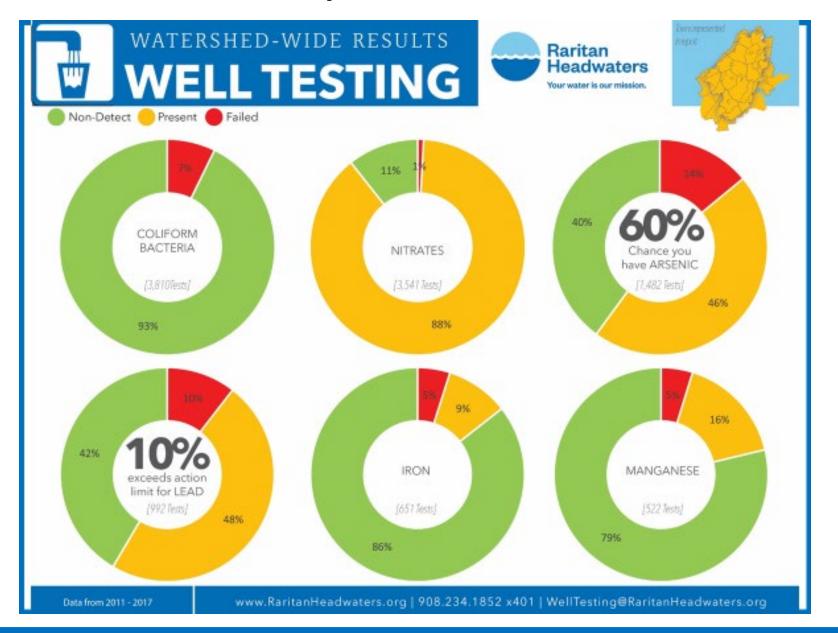


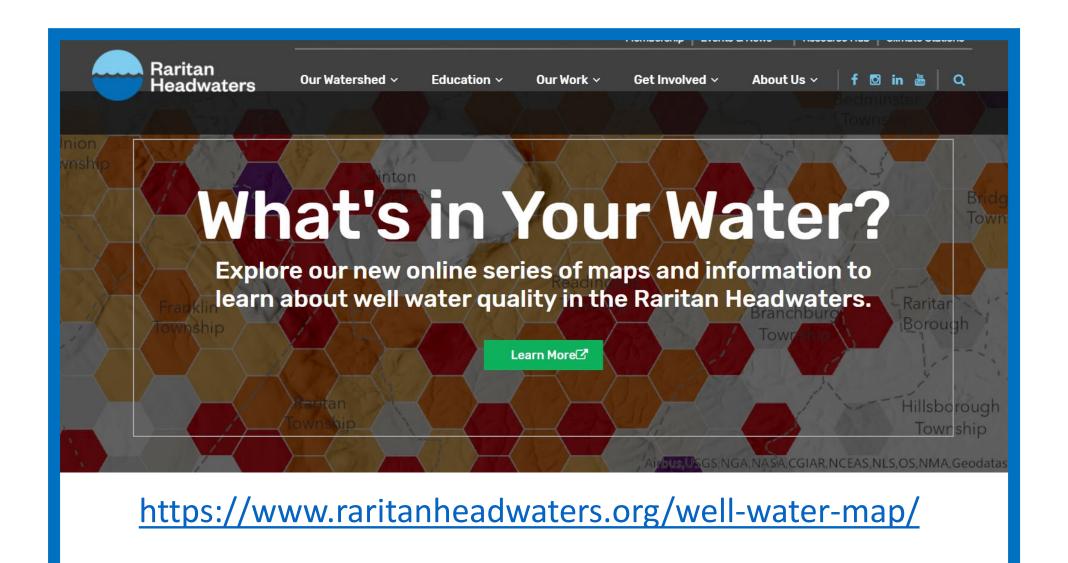
The only way to know your well water is safe is to test it!

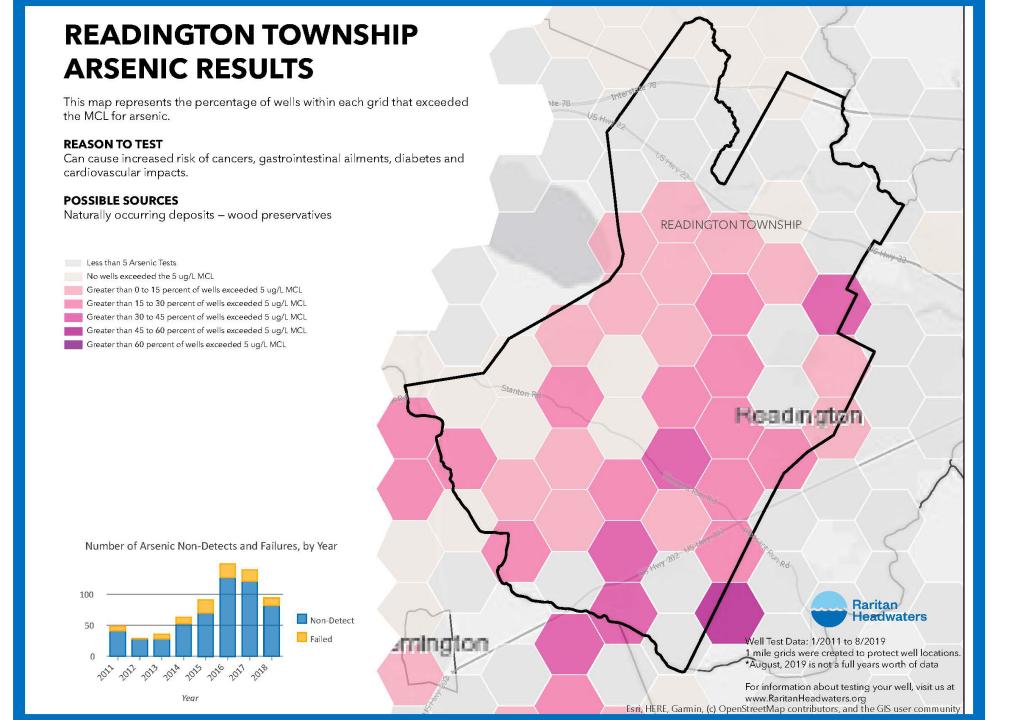


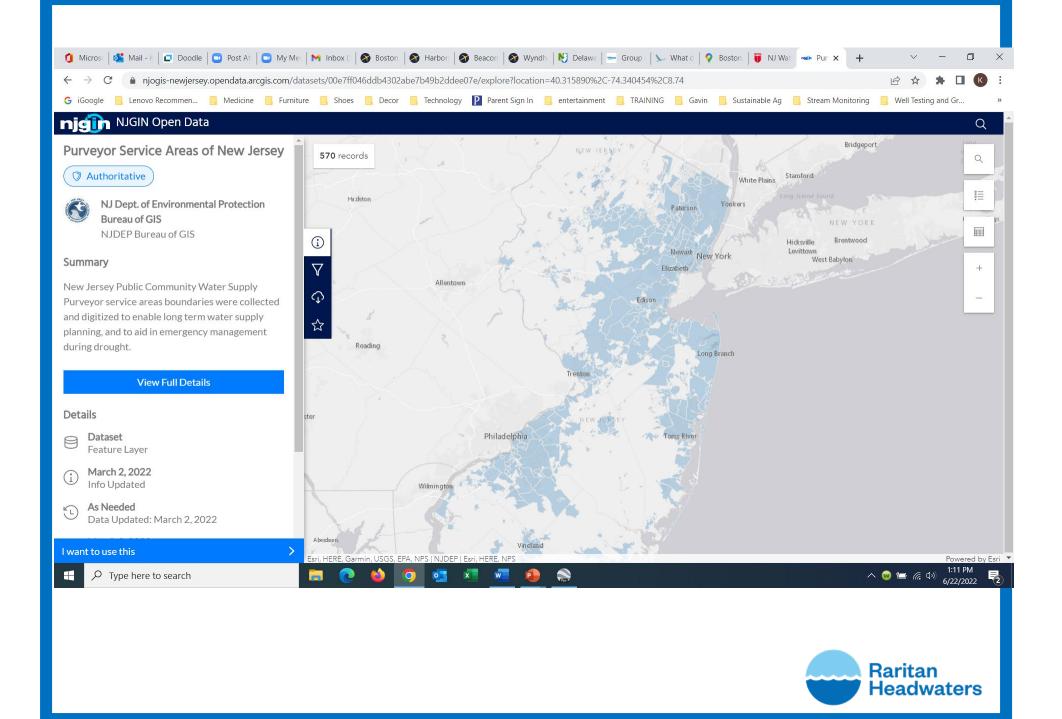


### **Report Cards**







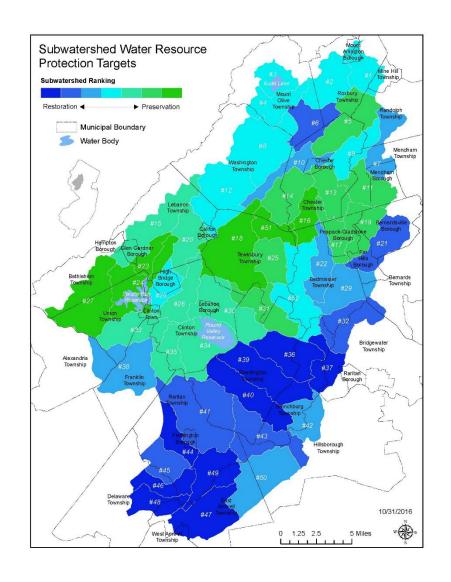


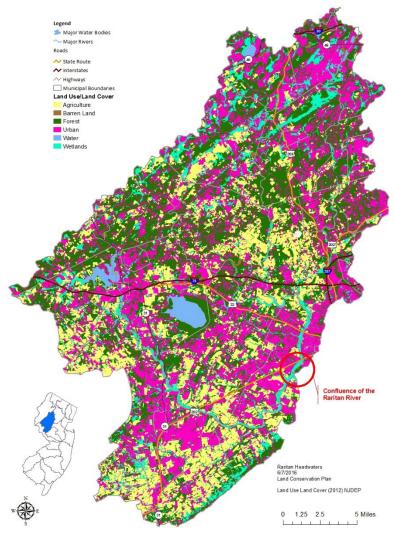
## Working together on projects and outreach





### **Planning**





### Climate Change in NJ

- Warmer temperatures († 3°F over last century)
- Hotter summers, more heat waves
- More precipitation (8% above avg. over past 10 years)
- Increased frequency of extreme weather events storms and droughts
- Spring arriving earlier
- Coastal communities: 16 in. rise in sea level since 1911 and 1 to 4 ft. rise by 2100
- What are the impacts on our streams and aquifers?









## Projects to protect & restore water resources and build climate resiliency

#### Land Preservation

- Acquisition
- Easements
- Regulations
- Land use planning

### Restoration & Stewardship

- In stream restoration
- Dam removal
- Riparian forest buffer and wetland restoration
- Invasive control
- Deer management

### Best Management Practices (BMPs)

- River Friendly practices – non-point source pollution
- Stormwater
   management with
   green infrastructure
- Local ordinances
- Regulations
- Well testing
- Wastewater management

### Learn about the issues

- Our Annual State of Our Watershed Conference
- Invite us to present to your EC, Council, etc.







A Preliminary Analysis of Trends in Contaminants in Private Well Water in the North and South Branch Raritan Watershed (1984-2015)

> Kristi MacDonald, PhD, and Melissa Mitchell Thomas, GIS Specialist Rantan Headwaters June 2016









Stream Buffer Restoration Project: Prevent Flooding and Protect Water Quality in your Community

Dr. Kristi MacDonald and Melissa Mitchell Thomas, RHA

Thursday, March 1

Held from 3:00 - 5:00 pm with a registration fee of \$10

Restoring Balance to our Public Forests: Managing Damage from Deer and Invasives

Dr. Jay Kelly, Raritan Valley Community College and

#### Thursday, March 29

Held from 3:30 - 6:00 nm with no registration fe





What's in Your Water?
Establishing a Drinking Water
Testing Program in Your Community

#### Thursday, April 12

Held from 3:30 - 6:00 pm with no registration fee

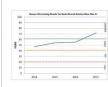
Intro to Environmental Mapping and Data Resources for Municipalities

Dr. Kristi MacDonald and Angela Gorczyca, RHA

#### Thursday, May 17

Held from 3:00 - 6:00 pm with a registration fee of \$10







Seminars held at Fairview Farm Wildlife Preserve, Bedminster, NJ

For more information and to register, please visit www.raritanheadwaters.org/protect/watershedtoolsformunicipalities/ or call 908-234-1852 ext 322

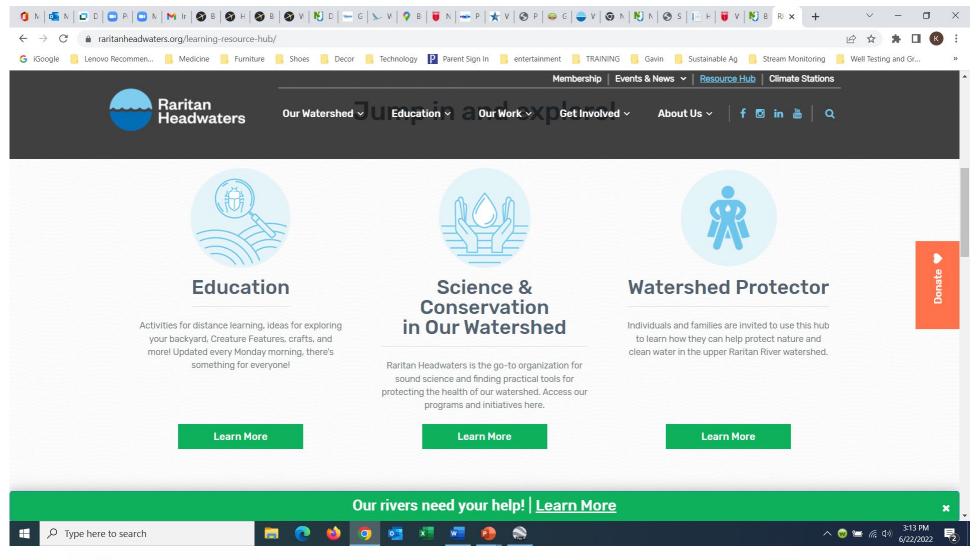
### Watershed Tools Seminar on Impervious Cover Assessments and Reduction Action Plans



Dr. Chris Obropta, Water Resources Program, NJ Agricultural Experiment Station, Rutgers University



### Resource Hubs





## Implement Plans & Projects







## Raise Awareness



### **Well lest**

**Purchase Kits Here** 

Oct 3 - 21 Mon-Thurs 9:00am - 1:00pm & 2:00 - 4:00

> Oct 11 & 18 5:00 - 8:00pm

**Readington Twp Office** 



Raritan

**Headwaters** 





#### **Private Well Outreach and Testing**

10 Points

• THIS ACTION HAS VARIABLE POINTS: 10, 15, 20, 25

#### Removing Lead in Drinking Water

10 Points

• THIS ACTION HAS VARIABLE POINTS: 10, 30, 40

https://www.sustainablejersey.com/actions/#open/action/576



## Engage the community









#### Rockabye Meadow, Gladstone

### **Volunteer Tree Planting**

Join Raritan Headwaters, Peapack-Gladstone
Environmental Commission & DPW, & NJ Water Supply
Authority as we restore the stream corridor along the
Peapack Brook. Trees help keep streambanks from eroding,
control flooding, clean the water and maintain cool
temperatures for trout.

9am - 12pm October 13th & 14th\*

Meet at Rockabye Meadow Church St. parking area, Gladstone

Bring Gloves & a Shovel

\*Rain dates October 20th & 21st

For more info contact Kristi MacDonald at kmacdonald@raritanheadwaters.org .To learn more visit www.raritanheadwaters.org and www.peapackgladstone.org









## River Friendly Programs

- Resident
- School
- Golf Course
- Business
- Farm







njriverfriendly.org



# Children's Education Programs



- RiverFest
- WaterWays (school programs)
- Nature Camps
- River Friendly Schools
- Monthly Community Programs

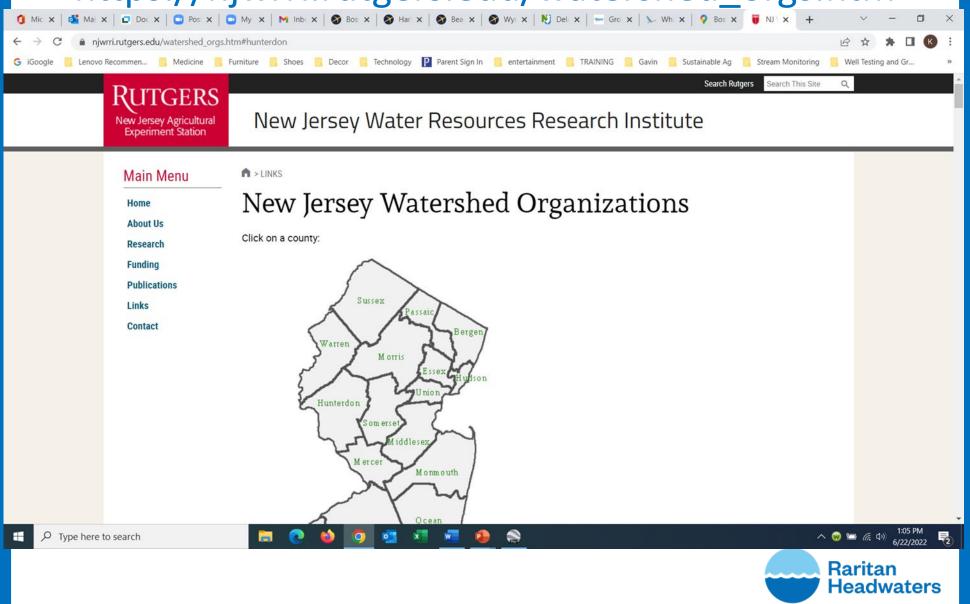




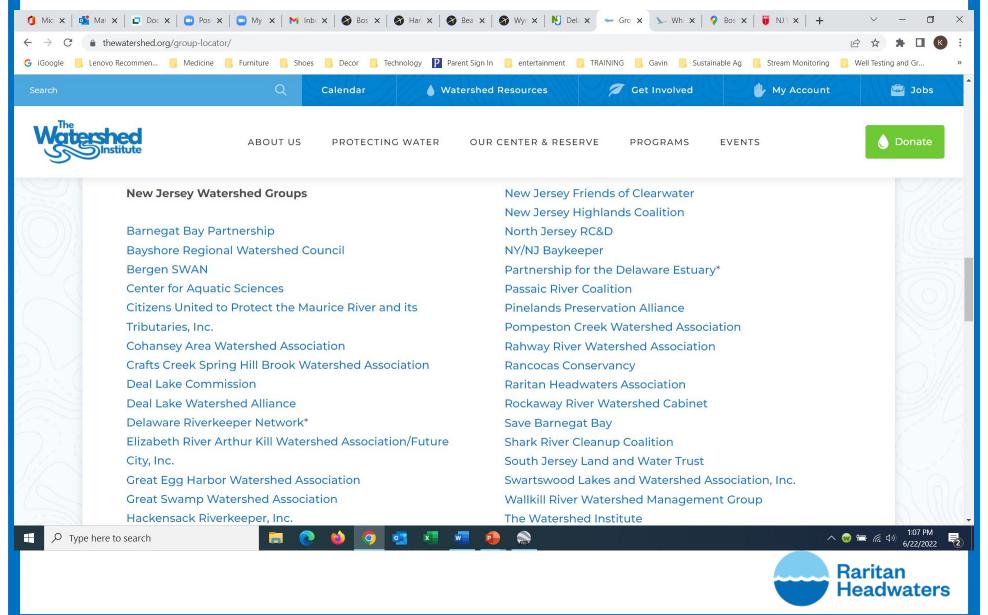
## Find your partners



### https://njwrri.rutgers.edu/watershed\_orgs.htm



### https://thewatershed.org/group-locator/



# Thank you!

Kristi MacDonald, PhD
Director of Science & Stewardship

kmacdonald@raritanheadwaters.org

(908)234-1852 x322

www.raritanheadwaters.org



## Telling Your Municipal Water Story: Pulling It All Together - A Volunteer's Perspective



Kathleen Mumma Asbury Park Green Team Volunteer June 24, 2022

## About Me

- Resident of Asbury Park
- Volunteer member of Asbury Park's Green Team
- I've worked at an asset management firm since 2008; also teach yoga/movement
- Environmental and social justice advocate/ally
- I care about:
  - Land conservation
  - Expanding diversity/inclusion in my industry and my community
  - Public access to land/waterways
  - Reducing litter and plastic pollution
- kathleenmumma@gmail.com

# Asbury Park's Water Story – Why Tell It?

- To share and advance Asbury Park's knowledge of our local water system
- Residents will offer input and enhance the story with information from their water experiences with water to provide a full picture of our natural resource
- The Water Story is a catalyst for a wider discussion in the community to formulate an overall water strategy
- Asbury Park's water story tells the whole story of the city
  - Water "touches" every resident, so it is a great medium for maximum inclusion and diversity

# Asbury Park's Water Story – The Process of Pulling it all Together

### **BIG THANKS to Sustainable Jersey & NJ American Water**

- Asbury Park Green Team applied for SJ's Technical Assistance Grant (funded by NJ American Water)
- Anne Heasly of SJ facilitated our learning sessions, compiled notes into a draft

### **Learning sessions/interactive discussions**

- Monthly Zoom meetings w/Green Team volunteers, City staff, and subject matter experts
  - Water Resources in your Community
  - Public Access to Water Resources
  - Drinking Water Supply & Quality (NJ American Water)
  - Wastewater
  - Stormwater and Flooding

# Asbury Park's Water Story – The Process of Pulling it all Together

### **Step 1: Written Report (in process)**

- Green Team volunteers are transforming the rough draft into a final written report
  - Divided up sections to edit by expertise/interest
  - Our City's Sustainability Director is coordinating assembly and formatting
- What's in the report?
  - Information for the "layperson"
  - Images
  - Action steps
  - Clickable links to resources
- Present + Share: present at City Council meeting; share on City's website, emails, social media etc.

# Asbury Park's Water Story – Pulling it all Together – What's next

### **Step 2: Public Engagement**

- Host charrette-style meeting
- Station for each topic with information, takeaways, giveaways
- Opportunities for public feedback
  - Suggestions on post-it notes
  - Hyper-localized reporting about flooding, litter issues, etc.
  - Polls What problems do you see in your immediate neighborhood with water?
  - Public feedback collection beyond the meeting website link; work w/Council
- Update the written report to include public feedback

### **Step 3: Video Report**

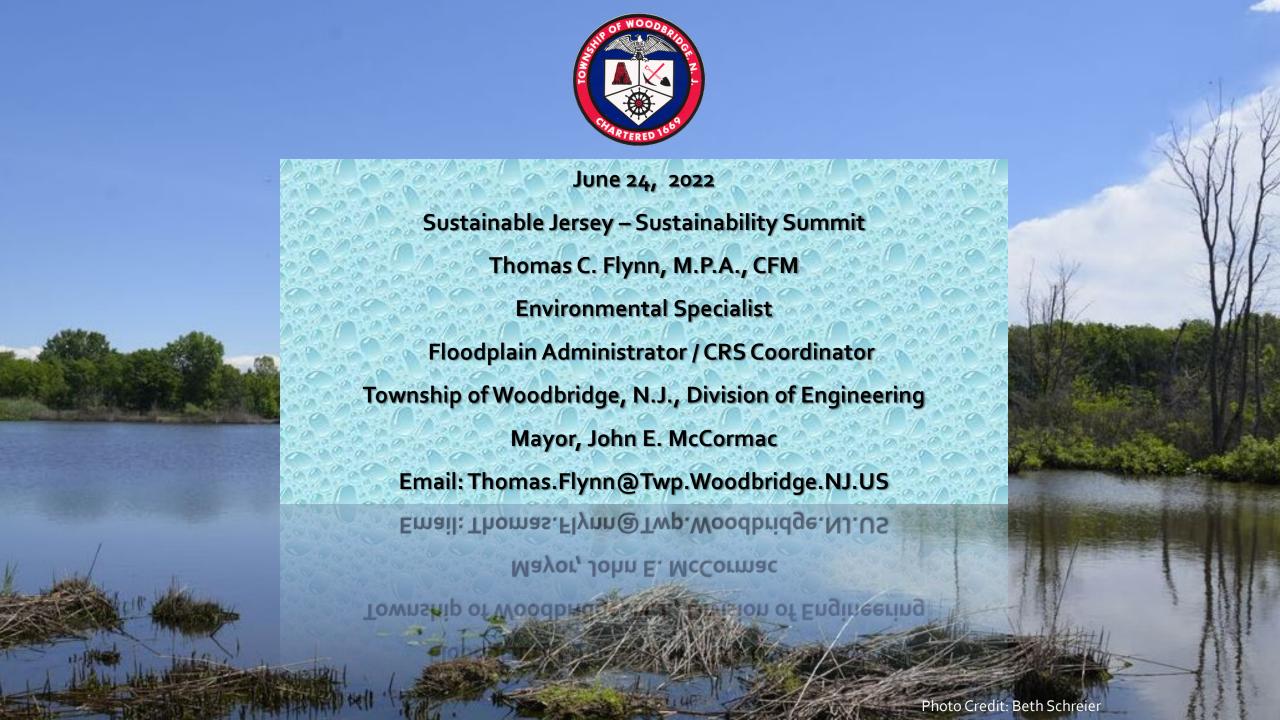
Coordinate with APTV to produce a brief video version of the Water Story

# Asbury Park's Water Story – Helpful Tips & Tools for Volunteers

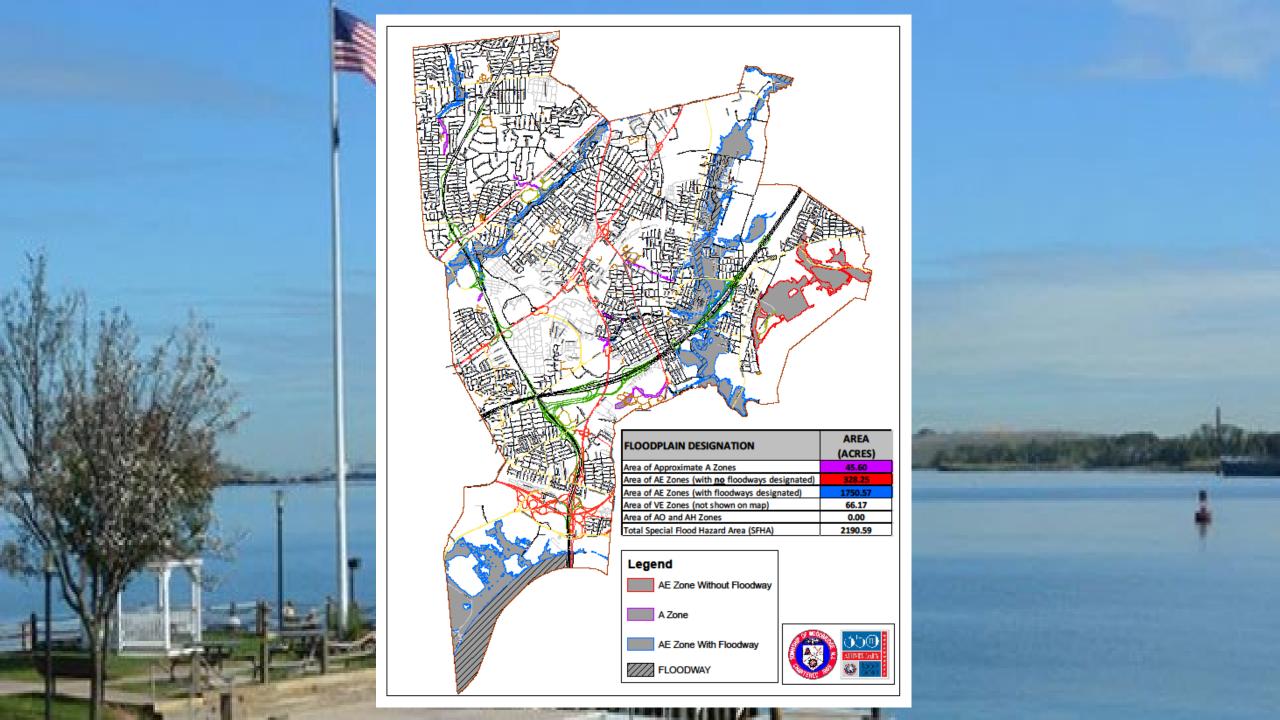
- Engage with your City's Staff & Resources they are here to help!
- Google Drive for collaborating, sharing media
- \*\*\*Learn and utilize mapping tools\*\*\*
  - Rowan University's NJ Map Project <a href="https://www.njmap2.com">https://www.njmap2.com</a>
  - NJDCA's NJ Community Asset Map <a href="https://njdca.maps.arcgis.com/">https://njdca.maps.arcgis.com/</a>
- Formatting software Word/Google Docs is fine; Canva could help

# Asbury Park's Water Story – Thank You to our Collaborators!

- Sustainable Jersey Anne Heasly
- New Jersey American Water Kevin Rodier & Chelsea Kulp
- The City of Asbury Park:
  - Department of Public Works Robert Bianchini and Greg Toro
  - Sustainability Officer Irina Gasparyan
  - Office of Planning and Redevelopment Michele Alonso
  - Volunteer Committees and Commissions
    - Asbury Park Green Team
    - Deal Lake Commission
    - Sunset Lake Commission
    - Wesley Lake Commission
    - Asbury Park Planning Board
    - APTV
- Monmouth University Coastal Lakes Observing Network Jason Adolf



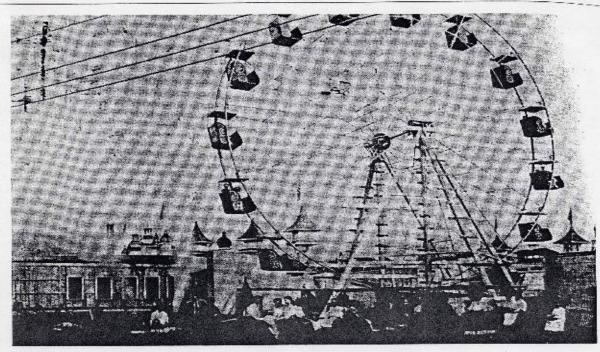




# Path to Gold Star Standard in Water Community Visioning May 2021







Ferris Wheel, Boynton Beach.

### BOYNTON BEACH

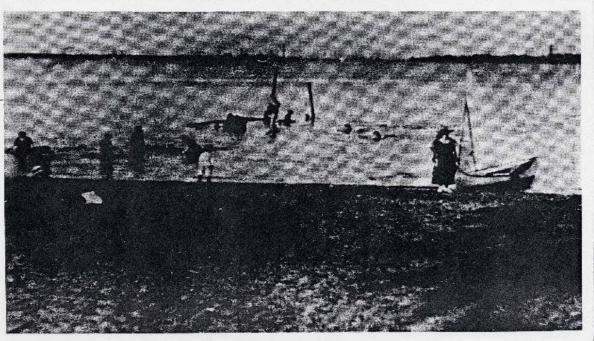
the turn-of-the-century, Boynton Beach was one of the most popular resorts along the Middlesex County coast. An issue of the Central Monthly, (c.1900), a promotional publication of the Jersey Central Railroad, was titled "Boynton Beach, N.J., An Ideal Day Summer Resort," and depicts vacationers arriving by train, trolley, bicycle and ferry. According to the author, "The Jersey Central Railroad accommodated excursion parties from New York City, and before the time of the railroad, large ferryboats docked at the landing unloading crowds of folks who had come to spend the day bathing, fishing or just relaxing under the trees on an all-day's picnic spree." Picnic groves, bath houses, a jetty, dance pavilion, a gently sloping beach and more than 100 rowhouts for hire made Rounton Reach



Hopefully, the story that follows will give plausibility to the expression, "The Good Old Days," as it referred to life at the turn of this century. At that time, the township of Woodbridge, in Middlesex County, had extensive deposits of rich clay. A C. W. Boynton, an entrepreneur from Maine, built a brick and tile manufactguring plant in the Sewaren section of Woodbridge, near the mouth of Woodbridge Creek on the Staten Island Sound (Arthur Kill). The land extended north toward Smith Creek and included the beach front.

Boynton erected bath houses on the beach and developed the adjoining land into groves. Good transportation and a perfect setting made prosperity inevitable.

Left over from earlier days was a dock at the foot of Ferry Street. A



Boymon Beach.

## The Good Ol' Days

after 1844 and there was scheduled service to Boynton Beach from Perth Amboy, Elizabeth and New York.

There was also trolley service from Elizabeth. Service from Westfield to Perth Amboy also had a stop at Sewaren. A coach line that connected with major inland coach lines also served the beach in its earlier days. Of course, parking was also provided for the more affluent, who arrived at the beach in their buggies. The Central Railroad extended their line from Elizabeth to Sewaren.

During its heyday, the beach provided the best and safest swimming on the Kill, at both high and low water, and fishing, clamming and oystering were ideal.

An annual event carried down from the days of the Indians was "Salt Water Day." Originally, it was just a day set aside for swimming and eating oysters, but by the 1900s, it had involving all the facilities.

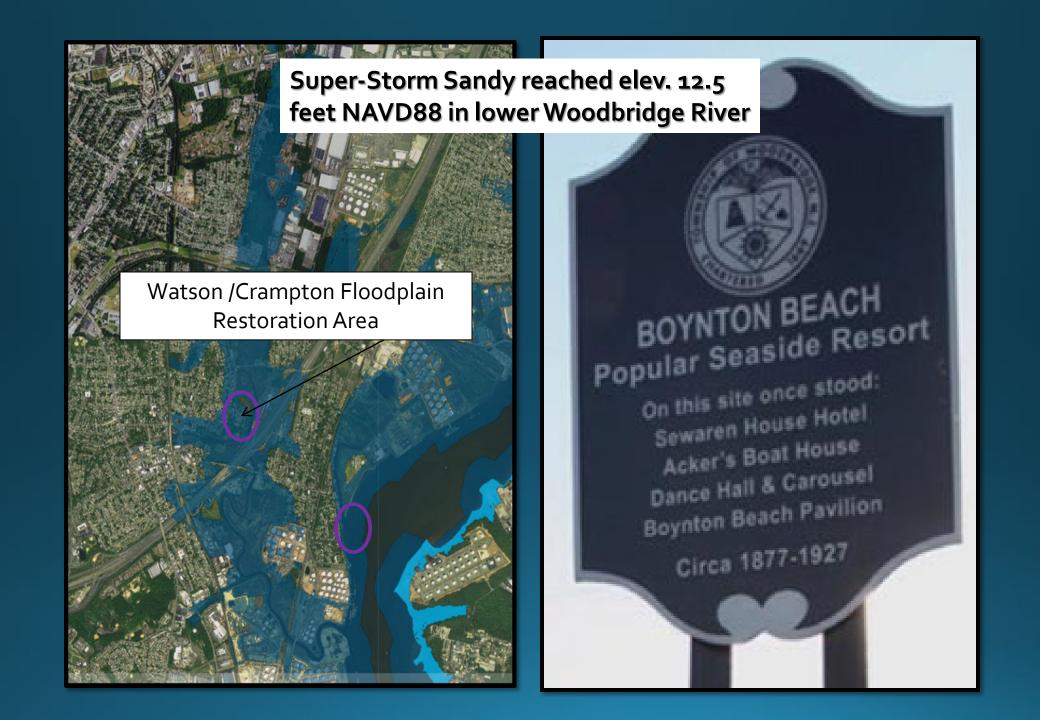
Steamboat service faded out early in the century, primarily because of the terrible safety record. Boats, often facing heavy winds and currents, overloaded their woodburning heaters, which caused numerous boiler explosions. Land transportation, especially speedy, safe and frequent rail service, also improved.

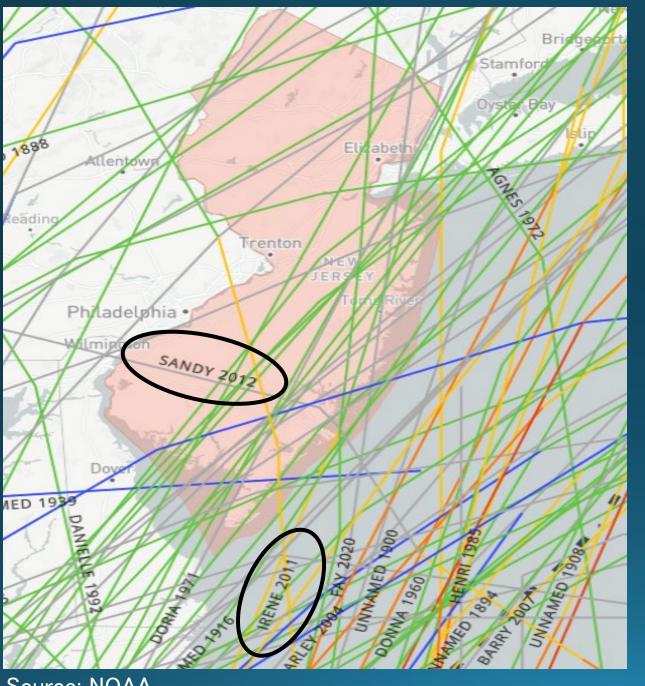
The area continued to prosper until just prior to World War I. In 1917. The Dance Pavilion burned, along with most of the other buildings. The Sewaren Hotel had burned to the ground a few years carlier. About the same time came the first hints of water pollution in the area as well as development of better shore areas.

Photographs from the collection of the Woodbridge Township Public Library and Albert Housman, courtesy of the The houses along Cliff Road occupied the most fashionable location, and most were built in some variation or modification of the Shingle Style, with eclectic Queen Anne and Colonial Revival elements evident as well. The houses at the northern end of West Avenue were similar but less grandiose, while the houses at the opposite end of that streete were modest, working-class dwellings with few high style features.

Although actual intrusions are few, the resort feeling of Boynton Beach has been destroyed by industrialization and pollution. Many of the houses along Cliff Road are poorly maintained and some have lost architectural integrity, largely because of superficial changes. Nevertheless, the district is the only remaining evidence of the once-thriving resort industry along the Middlesex coast, and has the largest collection of Shingle







**Historical Hurricanes** (1856 - 2020)

**Stop Calling It A** Wake Up Call

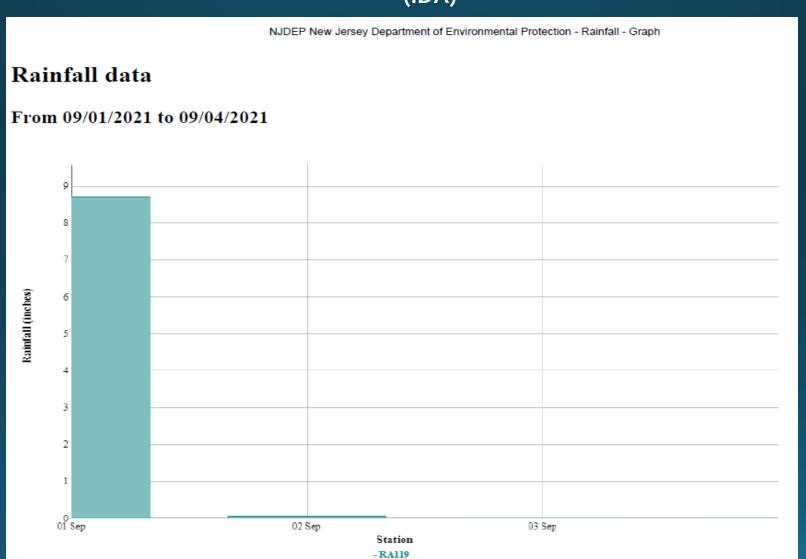
**Stop Calling It A** Warning

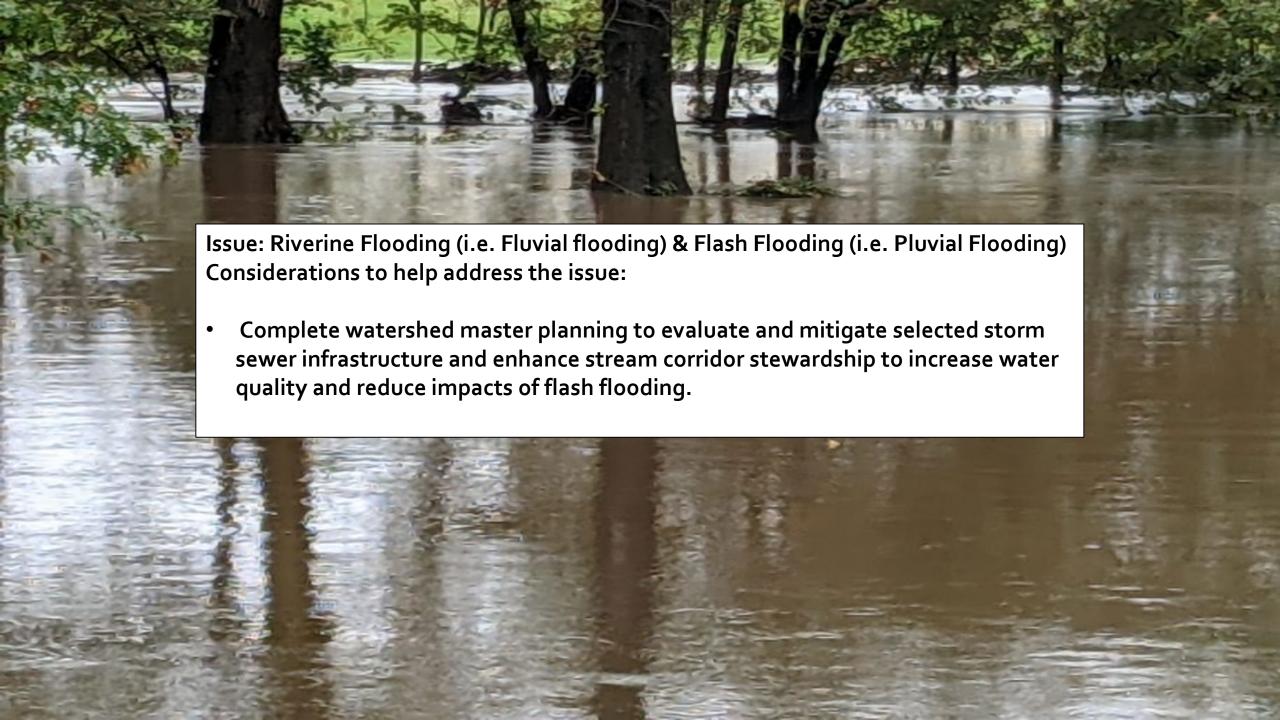
**Stop Calling It** A Once In a Lifetime Event

Source: NOAA



Problem Site Maintenance (PSM)
Post Storm Event Assessments
(IDA)













#### RETAINING WALL

Steep dropoff from land to water

> - Erosion can occur behind the bulkhead

Almost no wildlife along water's edge

'Hard' infrastructure like retaining walls abruptly severs the ecological connection between the coast and water.

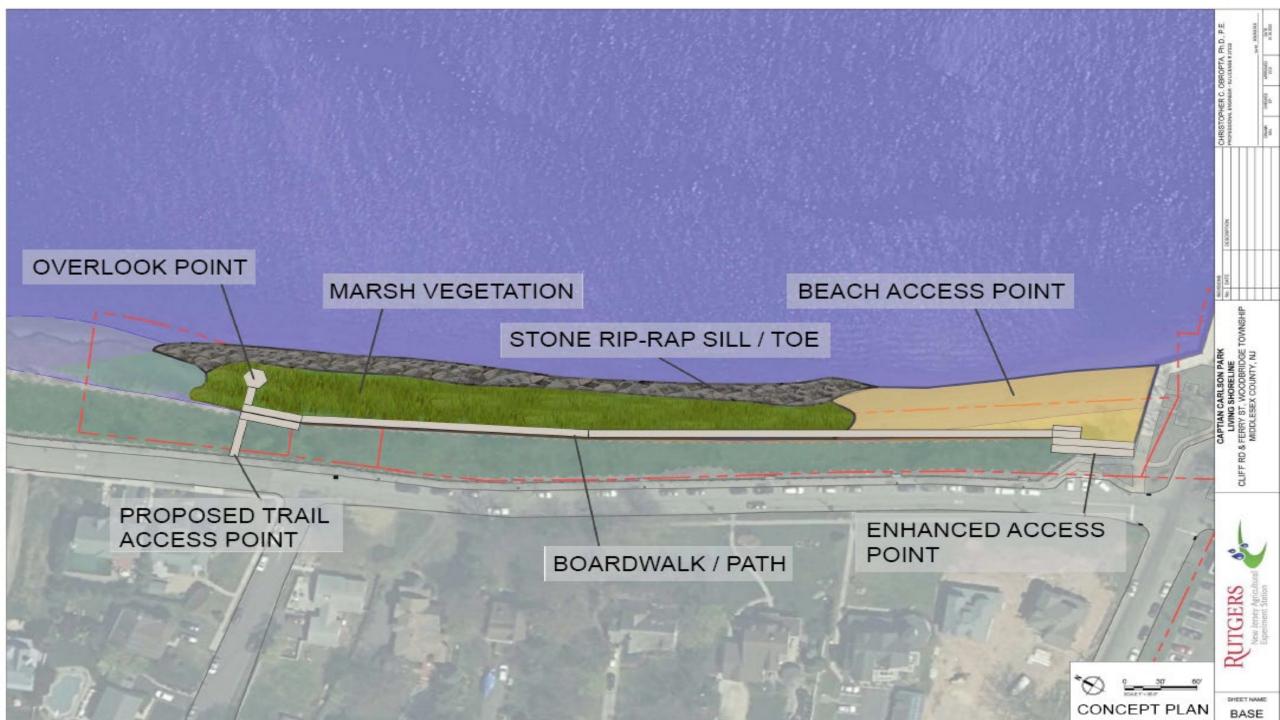
#### LIVING SHORELINE

Gentle slope from land to water

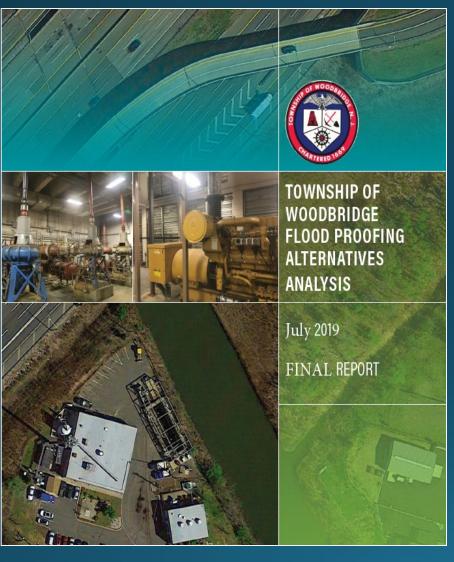
Wildlife has easy access to water from land

Much more wildlife along water's edge

Not only do Living Shorelines defend land against destructive waves, but they also provide crucial habitat for fish and wildlife.







- Township owned and operated sanitary pump station located on Woodbridge Avenue is bounded east by the Woodbridge River and vulnerable to flooding events.
- Evaluating site level flood protection alternatives that will protect the buildings and equipment located on the pumping station site from the impacts of intense precipitation events and storm surge from the Woodbridge River are of utmost priority.
- The Township is actively pursuing a grant application to the Federal Emergency Management Agency (FEMA) in order to seek funding to complete mitigation actions which include active and passive mitigation efforts, as well as incorporating the use of techniques that are naturebased and reduce impacts from waves caused by coastal storms.





## Remembering Super-Storm Sandy

## Reshaping Resilience

- The misleading 100-year storm
- ABFE's & PFIRM's
- Restoring the Shore

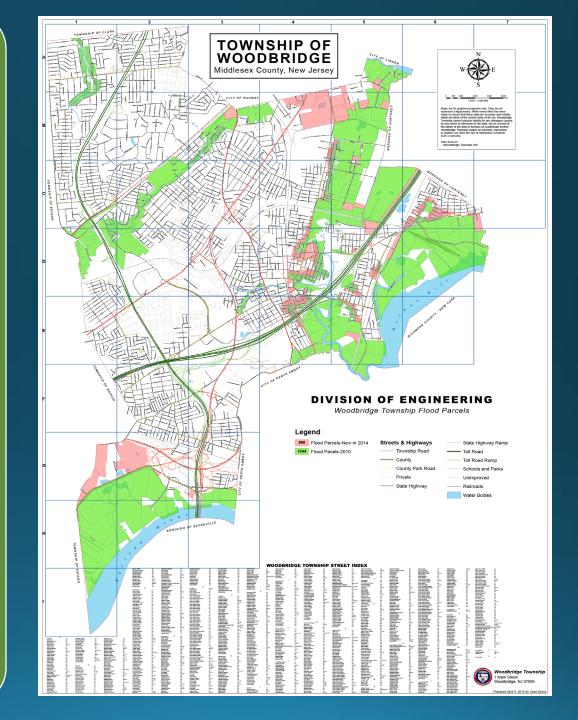


Issue: Riverine Flooding (i.e. Fluvial flooding) & Flash Flooding (i.e. Pluvial Flooding) Considerations to help address the issue:

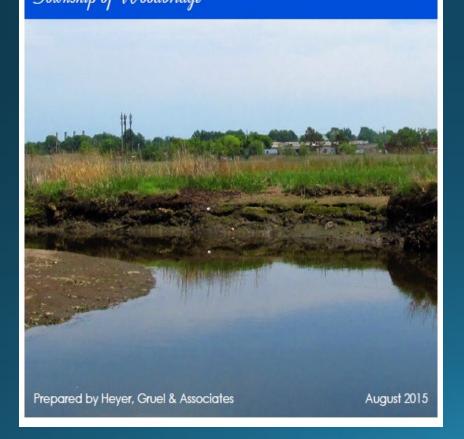
 Potentially expand / re-imagine the definition of the Open Space Conservation/Resiliency Zoning in relation to sea level rise projections and intensified precipitation patterns in order to enhance flood storage capacity

# Potential impacts associated with floodplain development

- Alters the dynamics of flooding
- Building and infrastructure damage
- Could compromise sensitive natural areas







## Development of Codes, Ordinance, Regulations, and Design Standards

8

#### Permit and Application Process Quality Improvements

For the Township of Woodbridge

Middlesex County

New Jersey

#### POST SANDY PLANNING ASSISTANCE PROGRAM

New Jersey Department of Community Affairs

Office of Local Planning Services

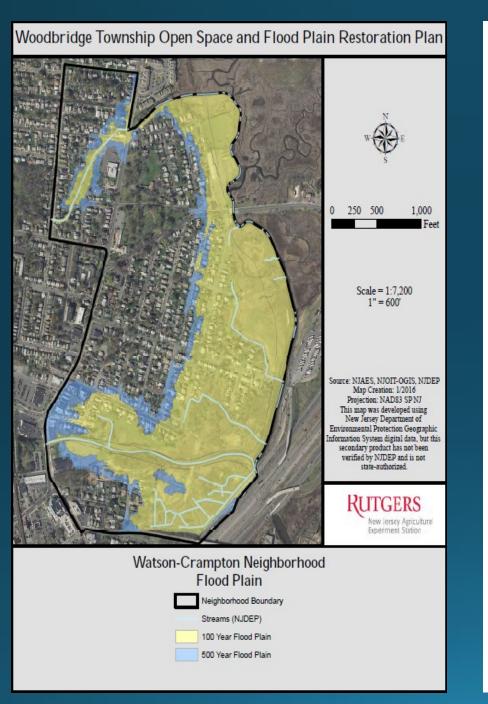
August 12, 2016

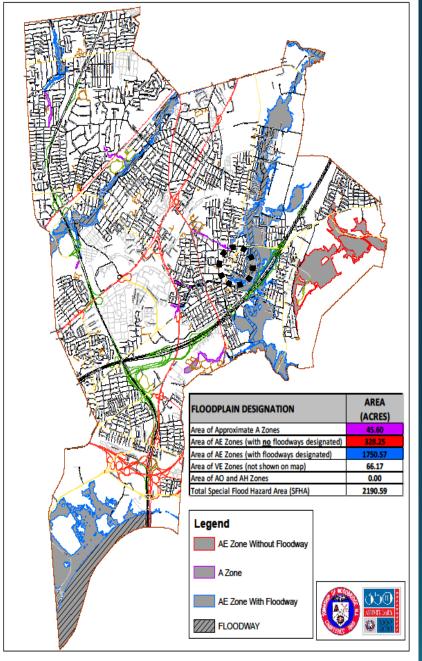
Prepared by:

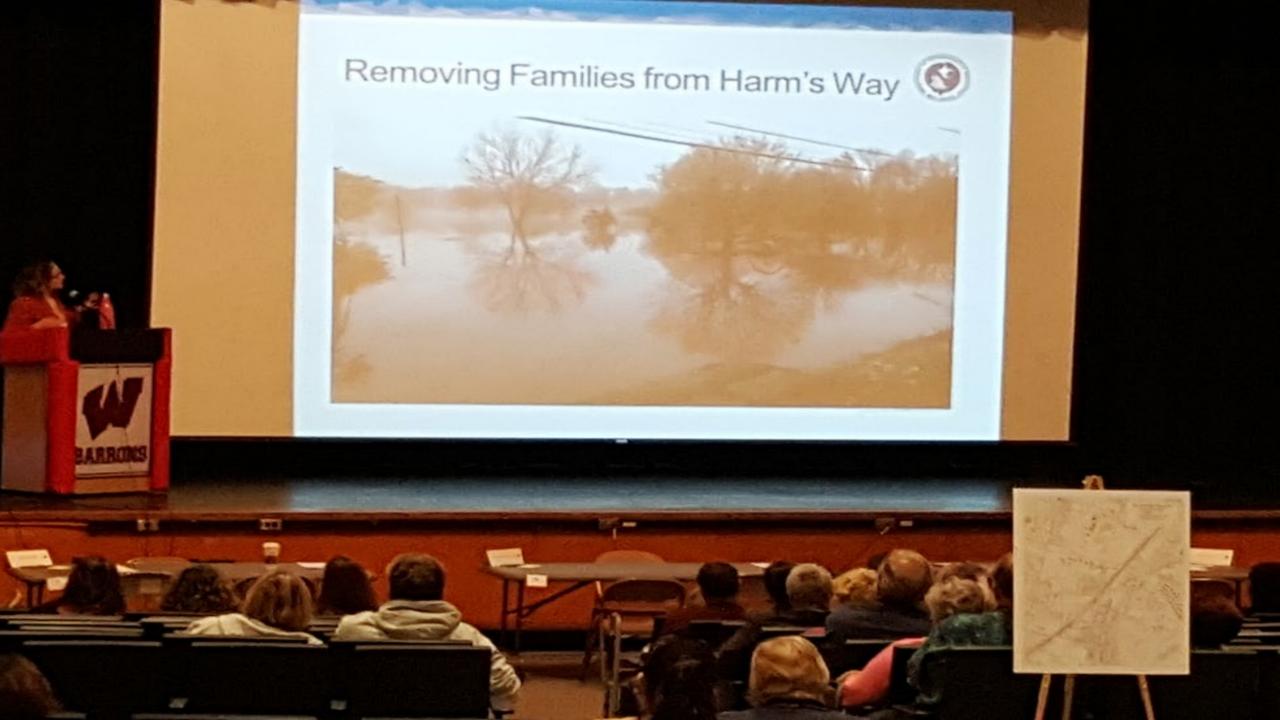


Heyer, Gruel & Associates

Community Planning Consultants
236 Broad Street, Red Bank, NJ 07701
(732) 741-2900



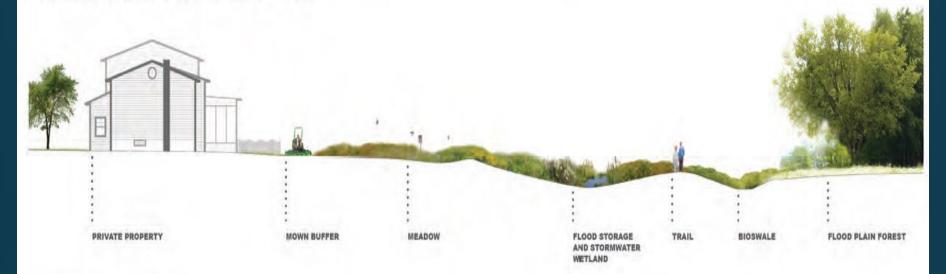








#### LOW-MAINTENANCE MANAGEMENT ZONE:



#### **RESTORATION ZONE:**





## Local Level Floodplain Management

## **Four Main Strategies**

- 1. Modify human susceptibility to flood damage
- 2. Modify the impact of flooding
- 3. Modify flooding itself
- 4. Preserve and restore natural functions of floodplains





## The Unified National Program for Floodplain Management

- Regulations in high hazard areas
- Building codes / flood resistant design
- Acquisition and relocation
- Modifying / retro-fitting
- Controlling storm water run-off
- Providing self-help to property owners





Only Rain Goes Down the Storm Drain Campaign
In streams suspended solids can reduce visibility and absorb light, which can increase stream temperatures and reduce photosynthesis.

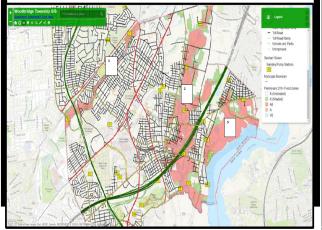


## Woodbridge Township Celebrating our Sesquarcentennial The Bost Down Stround

## Six Ways for Township Property Owners to Become More Flood Resilient







#### 1. KNOW YOUR FLOOD HAZARD

Woodbridge Township has areas of special flood hazards located in the AE, A, Coastal A, and VE zones. You can locate Special Flood Hazard Areas in your neighborhood by looking at the Flood Insurance Maps online at FEMA's Map Service Center. Or for detailed FEMA Flood Insurance Rate Map (FIRM) determinations based on a street address contact the Woodbridge Township Division of Engineering for personal assistance: 732.602.6057.

#### 2. INSURE YOUR FLOOD-PRONE PROPERTY

Most homeowner's policies do not cover costly flood damages, so flood insurance is recommended, even in areas that do not normally flood.

#### 3. PROTECT PEOPLE FROM FLOODING HAZARDS

Always heed official flood warnings, and never walk or drive through flooded areas - especially running water.

#### 4. PROTECT YOUR PROPERTY

Install flood vents in your foundation walls to protect them from storm damage and lower your flood insurance premiums.

#### 5. BUILD RESPONSIBLY

When you build on or repair a property within or near flood hazard areas, you must comply with the NJDEP Flood Hazard Area Control Act Rules and the Township's Floodplain Management ordinances. Be sure to obtain all necessary permits before construction. Contact the Division of Engineering (732-602-6057) for questions regarding designing and permitting projects in Special Flood Hazard Areas.

#### 6. PROTECT NATURAL FLOODPLAIN FUNCTIONS

Help your Township preserve its natural floodplains and wetland buffers to reduce flooding impacts and improve water quality.

John E. McCormac Mayor

To Learn More About Flood Protection and Community Rating System... Visit: http://ww.twp.woodbridge.nj.us/635/Floodplain -Management

1 Main Street

Woodbridge NJ 07095 Phone: 732-634-4500

E-mail: thomas.flynn@twp.woodbridge.nj.us

FLOODING SOURCE		PLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE 1	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
South Branch								
Rahway River	*		ч					
(continued)	1 1							
M	2.563	230	1,080	2.5	25.1	25.1	25.3	0.2
N	2.657	200	1,060	1.9	25.8	25.8	26.0	0.2
0	2.771	193	1,202	1.6	26.2	26.2	26.4	0.2
P	2.864	303	1,339	1.5	26.5	26.5	26.7	0.2
. Q	2.934	155	700	2.8	26.8	26.8	27.0	0.2
R	3.028	170	698	2.8	27.6	27.6	27.8	0.2
s	3.123	146	798	2.5	28.5	28.5	28.7	0.2
<b>T</b>	3.163	300	1,561	1.3	28.9	28.9	29.1	0.2
U	3.280	240	1,064	1.9	29.3	29.3	29.4	0.1
v	3.324	225	1,043	1.9	29.8	29.8	29.9	0.1
w	3.400	232	1,192	1.7	30.3	30.3	30.4	0.1
×	3.494	220	769	2.6	30.7	30.7	30.8	0.1
¥	3.589	440	1,839	1.1	31.4	31.4	31.5	0.1
Z	3.684	425	1,564	1.3	31.7	31.7	31.9	0.2
AA	3.797	450	1,395	1.4	32.3	32+3	32.5	0.2
AB	3.847	425	1,471	1.3	32.6	32.6	32.8	0.2
AC	3.956	219	723	2.7	34.3	34.3	34.4	0.1
			-					
				1		÷.		
	L, I	l.	I	1	1	l		

Inclas above confluence with Rahway River

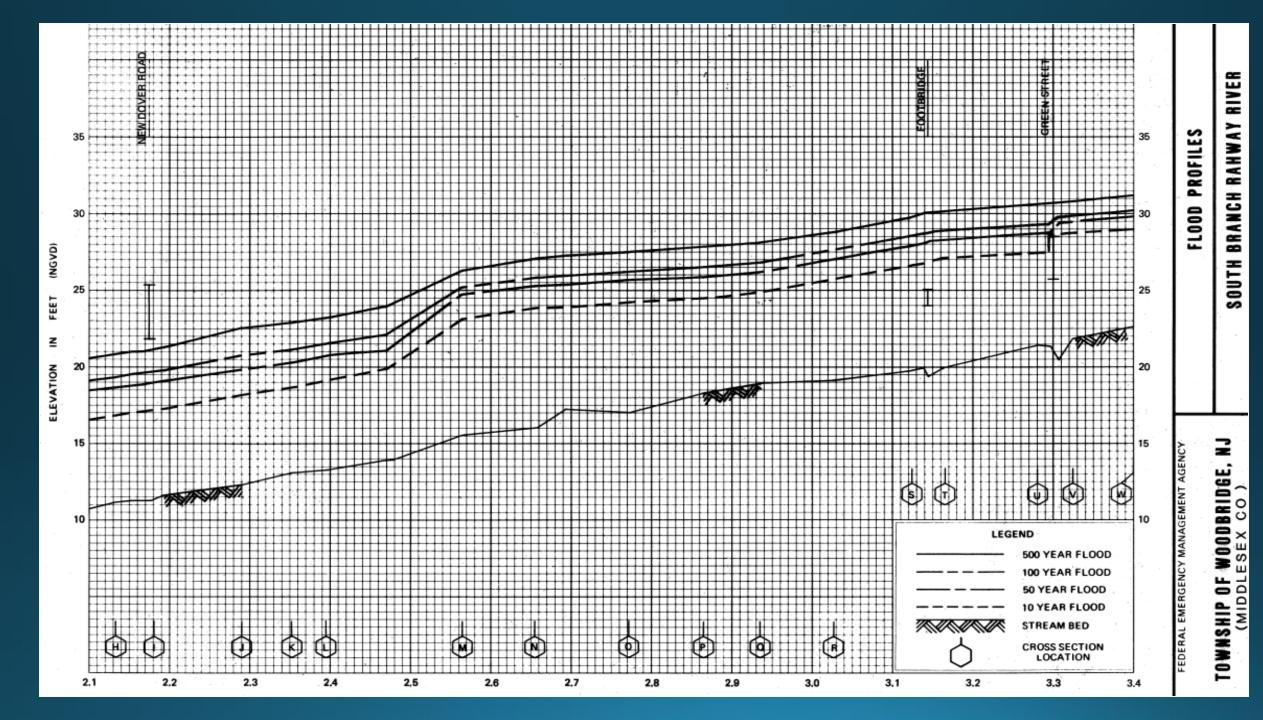
SEDERAL EMERGENLY MANAGEMENT AGENCY

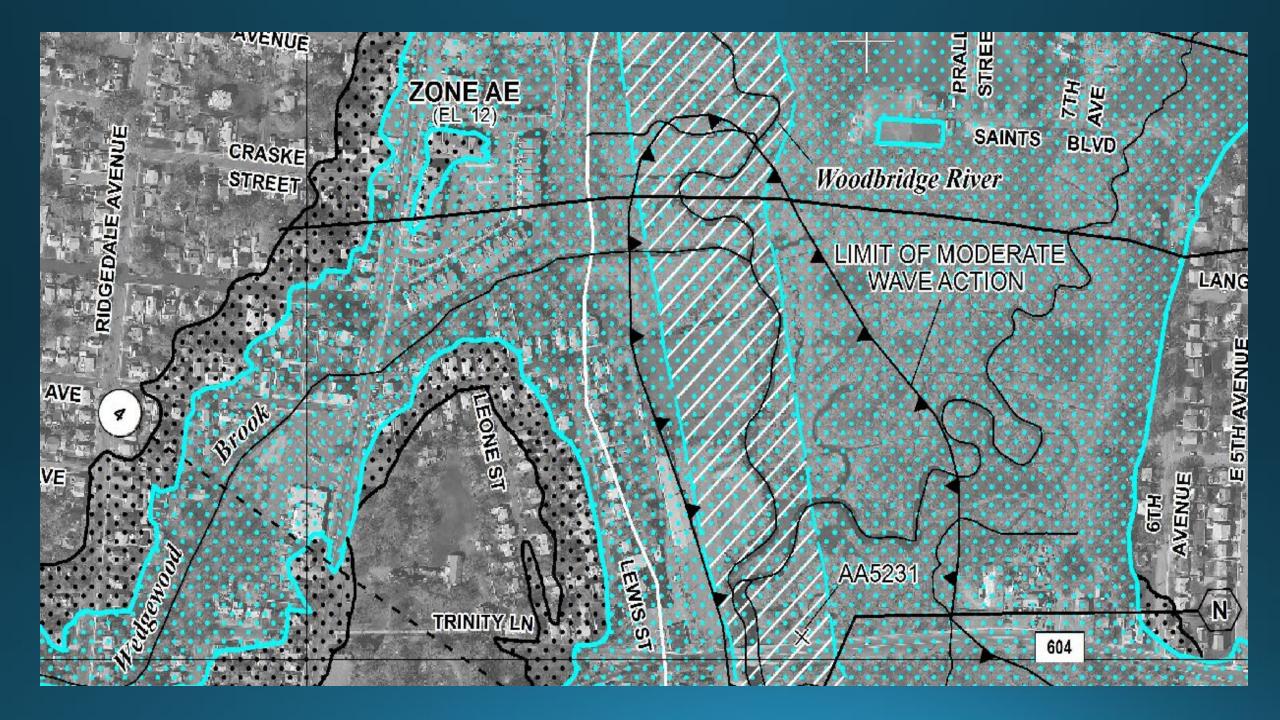
TOWNSHIP OF WOODBRIDGE, NJ

(MIDDLESEX GO.)

FLOODWAY DATA

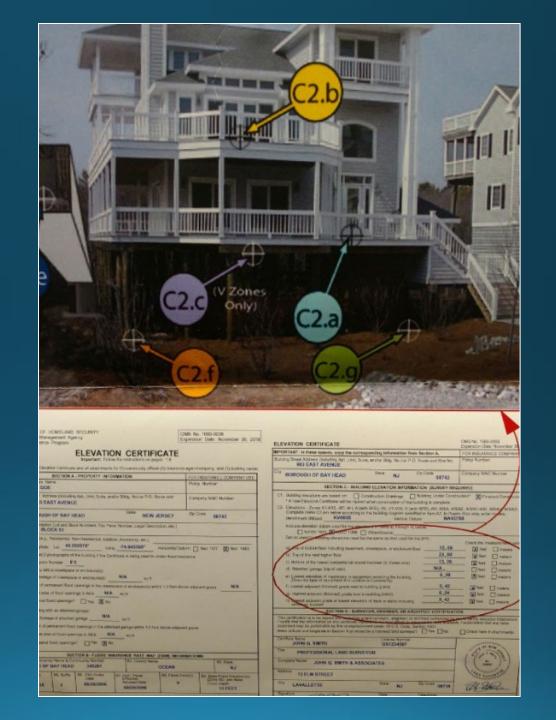
SOUTH BRANCH RAHWAY RIVER



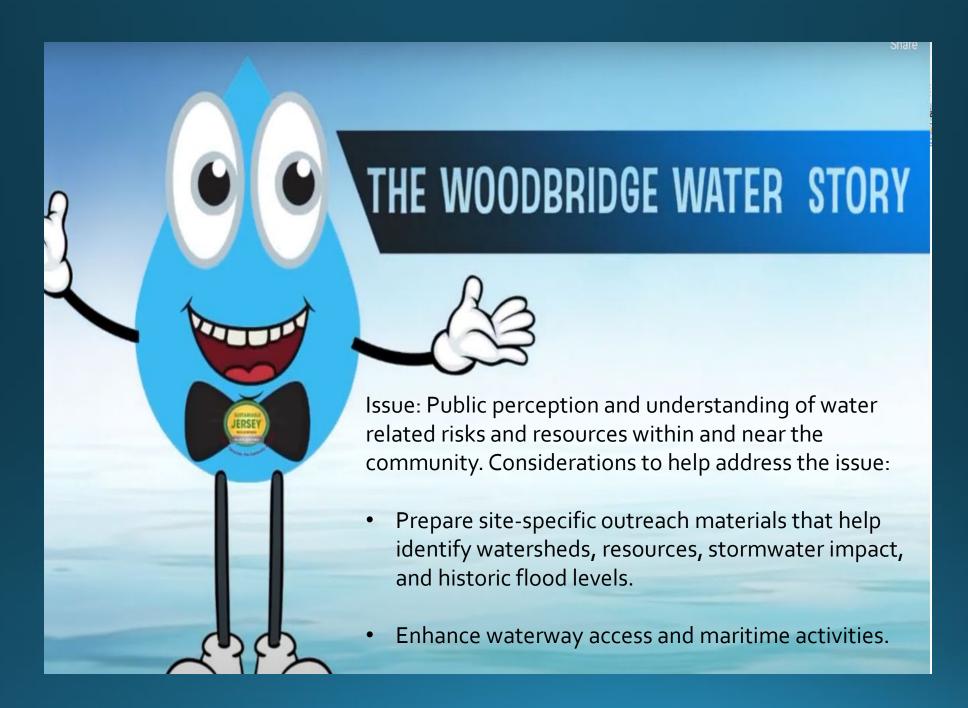


Community
Outreach and
Property
Protection
Assistance
Meetings

- EC Review
- Retrofitting
- Natural Functions of Floodplains
- Etc.







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#### **Silver**











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## Thank You



## SUSTAINABILITY SUSTAINABILITY SUSTAINABILITY

