



JERSEY WATERWORKS **CONFERENCE** 2025

DECEMBER 11, 2025 | THE COLLEGE OF NEW JERSEY, EWING

OUR COMMITMENT TO FUTURE GENERATIONS

Jersey Water Works Collaborative brings together people with diverse backgrounds, perspectives, and expertise to address the challenges within New Jersey's water sector.

www.jerseywaterworks.org
info@jerseywaterworks.org

Thank you for joining us!

#njwater25

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DECEMBER 11, 2025 | THE COLLEGE OF NEW JERSEY, EWING

Our Commitment to Future Generations



NEW JERSEY
AMERICAN WATER



LISC NEW JERSEY



***BUILDING HOLISTIC PATHWAYS FOR RESILIENT
MUNICIPAL STORMWATER MANAGEMENT***

JERSEY WATERWORKS
CONFERENCE 2025
Our Commitment to Future Generations



**Dana Patterson
Grear**
Princeton Hydro



**Christopher
Huch Jr.**
Black & Veatch Corp.



**Prabha
Kumar**
Black & Veatch Corp



**John
Notte**
New Jersey Infrastructure
Bank (I-Bank)



**John P.
Tully**
Township of Raritan

Thursday, December 11, 2025 | The College of New Jersey

Session Time: 10:00 a.m. to 11:15 a.m.

CREDITS: 1.25 AICP CM Credits & 1.3 PE CPC

THE STATE OF STORMWATER IN NJ

“

The nature of flooding in New Jersey has evolved to include **rapid-onset flash flooding for intense, short duration rainfall** that can swell rivers and streams within minutes; **chronic tidal flooding that inundates streets during high-tides** even on clear days, and prolonged, **heavy rainfall events that exceed the capacity of existing stormwater infrastructure** that were designed for the most common storms of the past.

”

NEW JERSEY STATEWIDE FLOOD RESILIENCE INITIATIVES REPORT
September 2025



THE STATE OF STORMWATER IN NJ

Climate Change is Significantly Worsening Flooding Conditions throughout New Jersey

1,640



affordable units in the state are subject to coastal flooding at least annually, **the highest share of at-risk affordable housing in the country.**

62,000+



residential properties (over \$27 billion in value) are at risk of chronic flooding and/or inundation due to sea-level rise.

45 - 50%



is the projected increase in extreme rainfall events – such as the 100-year, 24-hour storms – that some northern counties will experience by the end of the century.

18



inches is how high sea levels along the New Jersey Coast have risen since the early 1900s, **more than twice the global average.**

Graphic Source: New Jersey Statewide Flood Resilience Initiatives Report, September 2025



AGENDA

- I. BUILDING YOUR PROGRAM**
- II. FUNDING YOUR PROGRAM**
- III. ENGAGING YOUR COMMUNITY**
- IV. Q&A**



I. BUILDING A RESILIENT STORMWATER PROGRAM





BLACK & VEATCH

Integrated Stormwater Planning

- First Pillar of Utility Resilience

Chris Huch Jr.

NJ municipalities have a wide range of mandated plans and opt to develop many additional plans for **community resilience**



Master Plan

Hazard
Mitigation Plan

Watershed
Improvement
Plan

Flood Warning
and Response
Plan

Stormwater
Management
Plan

Floodplain
Management
Plan

Watershed
Management
Plan

Repetitive Loss
Area Analysis

Substantial
Damage
Management
Plan

Post-Disaster
Recovery Plan

Climate
Adaptation Plan

Resilience Plan

Open Space
Plan

Natural
Floodplain
Function Plan

Drivers for Planning Integration

While planning fatigue and full workloads can lead us to silo our stormwater work, it is important to consider the benefits of integration of stormwater planning within other planning efforts.



Mandated integration requirements in some programs



Leverage Diverse Funding Sources



Cohesive and coordinated municipal strategies



Public safety and resilience enhancement



Increased public awareness



Flood insurance reductions through the Community Rating System

New Jersey Stormwater Regulations and Requirements

Introduction to Stormwater Regulations

Clean Water Act of 1972

- Expanded to Non-Point Sources in 1987.

- Established the National Pollutant Discharge Elimination System (NPDES).

- Program delegated to the States.

Municipalities in NJ can have:

- Municipal Separate Storm Sewer System (MS4).

- Combined Sewer (CSO).

MS4 Permit Program is audited by the NJDEP



Watershed Improvement Plan

New planning requirement to improve water quality and reduce stormwater flooding

Three phases over the 5-year permit cycle:

- Mapping – all publicly and privately owned stormwater infrastructure, impervious cover
- Planning – outline water quality improvement projects and estimated cost, and water quality data
- Final Plan and Implementation



Stormwater Planning Integration Opportunities



Local Mitigation Planning Policy Guide

FP 206-21-0002

Released April 19, 2022, Effective April 19, 2023

OMB Collection #1660-0062



Hazard Mitigation Plans

Hazard Mitigation Plans (HMPs) identify, analyze, and develop actions to mitigate natural hazards.

In New Jersey, HMPs always include flooding and often specifically include stormwater and urban flooding.

Identified hazard mitigation strategies commonly include stormwater actions like upsizing stormwater components and drainage improvements.

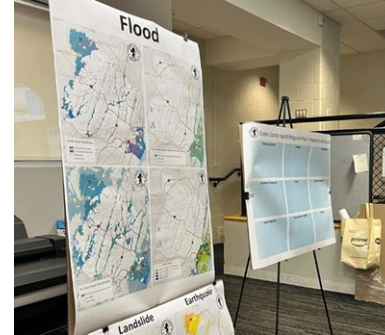
Hazard Mitigation Plan Integration Benefits

Identification and analysis of flood exposure.

Development of stormwater related actions.

Access to Hazard Mitigation Assistance (HMA) grant programs for stormwater projects.

Lead points of contact for HMPs are often emergency managers that are not aware of stormwater requirements, current programs, or future needs. Get involved and provide your expertise!



Community Rating System

FEMA run program that rewards communities that go above and beyond NFIP requirements such as additional planning, stronger codes, more extensive outreach, etc.

Participating communities are given class ratings which correspond to premium discounts for NFIP policyholders.

Involves regular evaluations of communities.



Coordinator's Manual

National Flood Insurance Program

Community Rating System

FIA-15/2025



FEMA

Community Rating System Stormwater Integration

Stormwater management is integrated throughout the CRS program. Contributing to your community's CRS program can earn substantial points, resulting in cuts in flood insurance costs.

300 Series: Public Information

- Outreach and education

400 Series: Mapping & Regulations

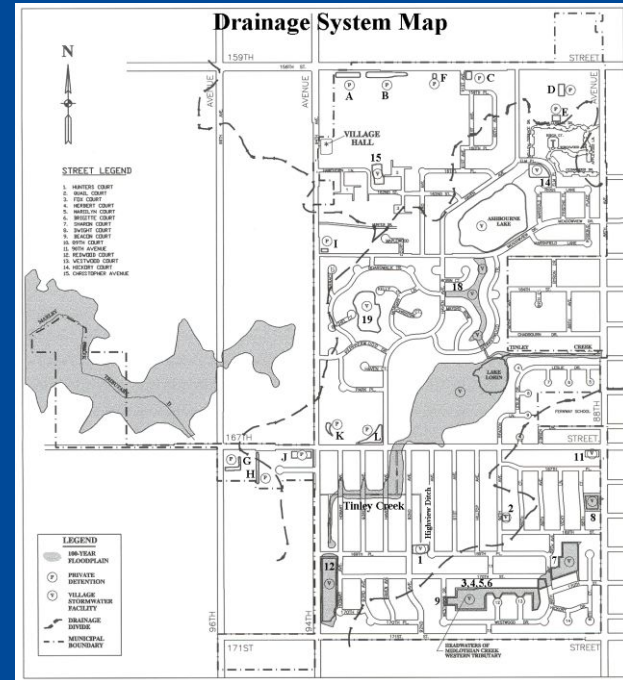
- Mapping of open space, drainage systems
- Stormwater management regulations
- Watershed master plan
- Erosion and sedimentation control regulations
- Water quality regulations

500 Series: Flood Damage Reduction

- Floodplain management planning
- Repetitive loss area analysis
- Substantial damage management planning

600 Series: Warning & Response

- Emergency warning systems



Climate Change Impacts

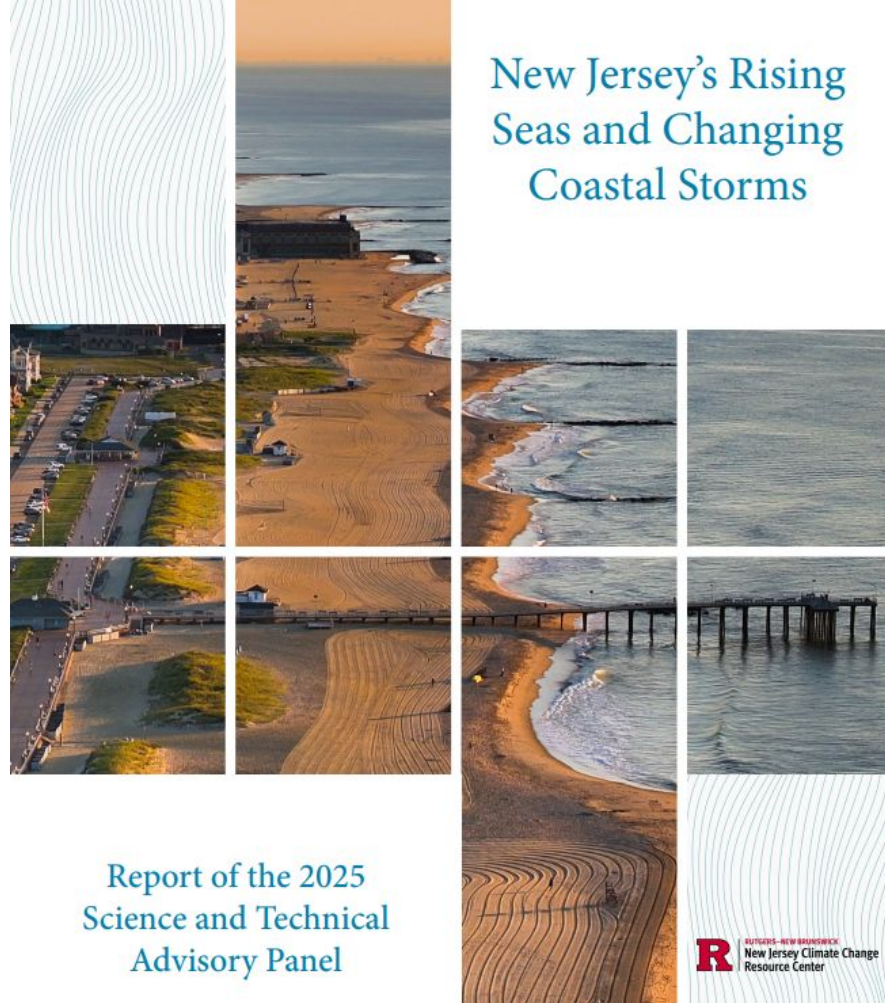
Increased severity and frequency of heavy rainfall events (cloudburst)

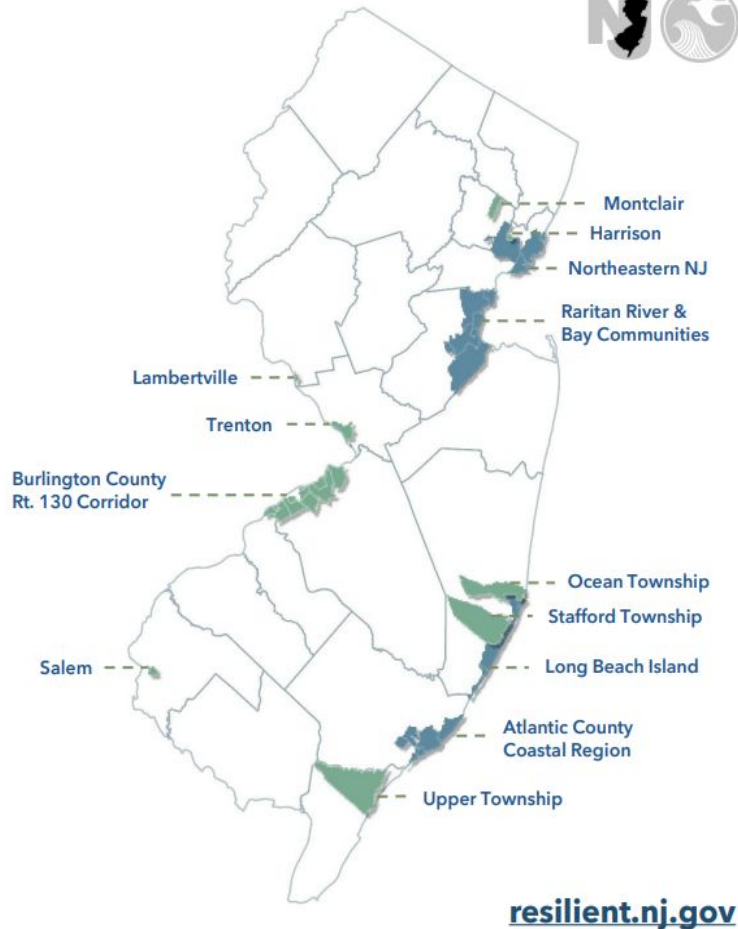
- Communities are likely to require greater stormwater capacity, upsize existing components, plan for greater need for detention/retention

Sea level rise will continue in coastal areas

- Backflow at high tides, storm surge events.
- Lower effectiveness of gravity drainage systems where outflows are underwater

New Jersey's Rising Seas and Changing Coastal Storms





Benefits of Stormwater Integration with Climate Resiliency Planning

Analyzing climate risks helps identify the impact of future conditions on our current stormwater systems.

Allows for development of cohesive strategies to prepare for future needs and properly design stormwater components for long useful life.

NJ DEP's Resilient NJ program has funding available for planning and implementation.

Additional Integration Opportunities

Data Integration: Stormwater and flood related data and information should be integrated from / into other planning efforts.

Project Planning: Make sure plans consistently reflect your stormwater needs and include upcoming stormwater projects.

Holistic Planning: Earlier plans are resources, parallel plans are teammates, and future plans are beneficiaries from your stormwater planning efforts.



Stormwater Integration Tips

- ✓ **Overlapping Plans:** Identify overlapping plans and the benefits of integrated solution to address them.
- ✓ **Community Priorities:** Make sure the planner understands your community's stormwater priorities.
- ✓ **Concurrent Efforts:** Discuss concurrent stormwater planning efforts that can be used to complement or leverage the planning process.
- ✓ **Collaborative Projects:** Collaborate on defining stormwater projects and initiatives that can offer multi-benefit outcomes.
- ✓ **Communication:** Keep your administration and staff informed and up to date on progress.



Thank You

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Hazard Mitigation Planning Specialist

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II. FUNDING YOUR STORWMATER PROGRAM





BLACK & VEATCH

Building Funding Capacity - Second Pillar of Utility Resilience

Prabha Kumar

Overview of this Segment

- *PART 1 – Prabha Kumar*
- *PART 2 – John Notte*

PART 1 – FUNDING SOURCES & STORMWATER UTILITY

- Stormwater Funding Landscape
- Funding Alternatives
- Example: Rate Structure for Resilience
- Benefits of a Stormwater Utility

PART 2 – NJ Water Bank Funding Opportunities

Stormwater Funding – What is the Current Landscape?

No Dedicated Funding



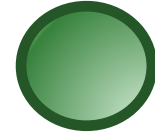
- Most municipalities

Tax-Based Partial Funding



- Infrastructure Sales Tax
- Hospitality Tax
- Gasoline Tax

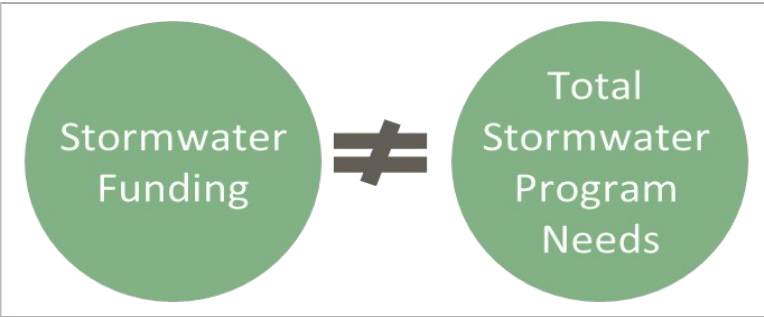
Dedicated Full User Fee Funding



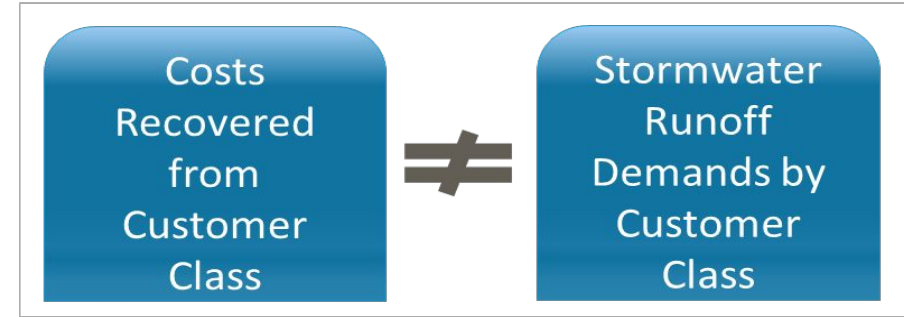
- Stormwater User Fee
- Dedicated Funding
- Permanent Source

What are the key stormwater funding challenges?

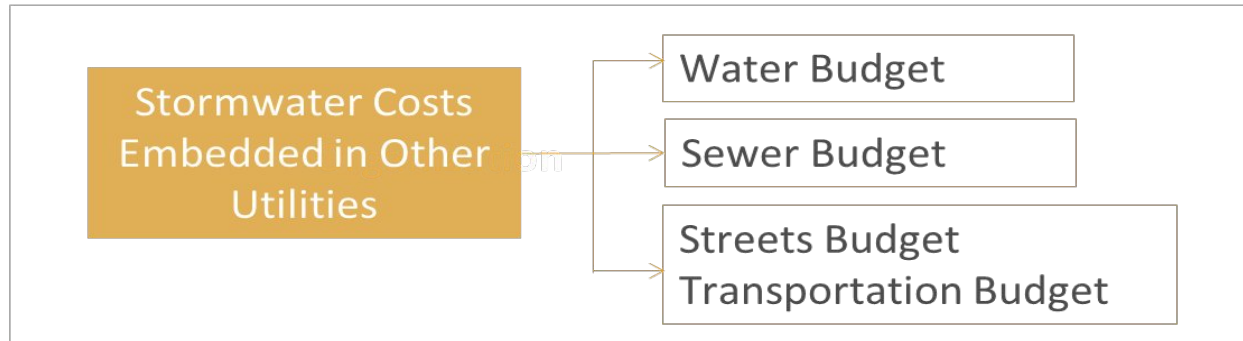
Adequacy Gap



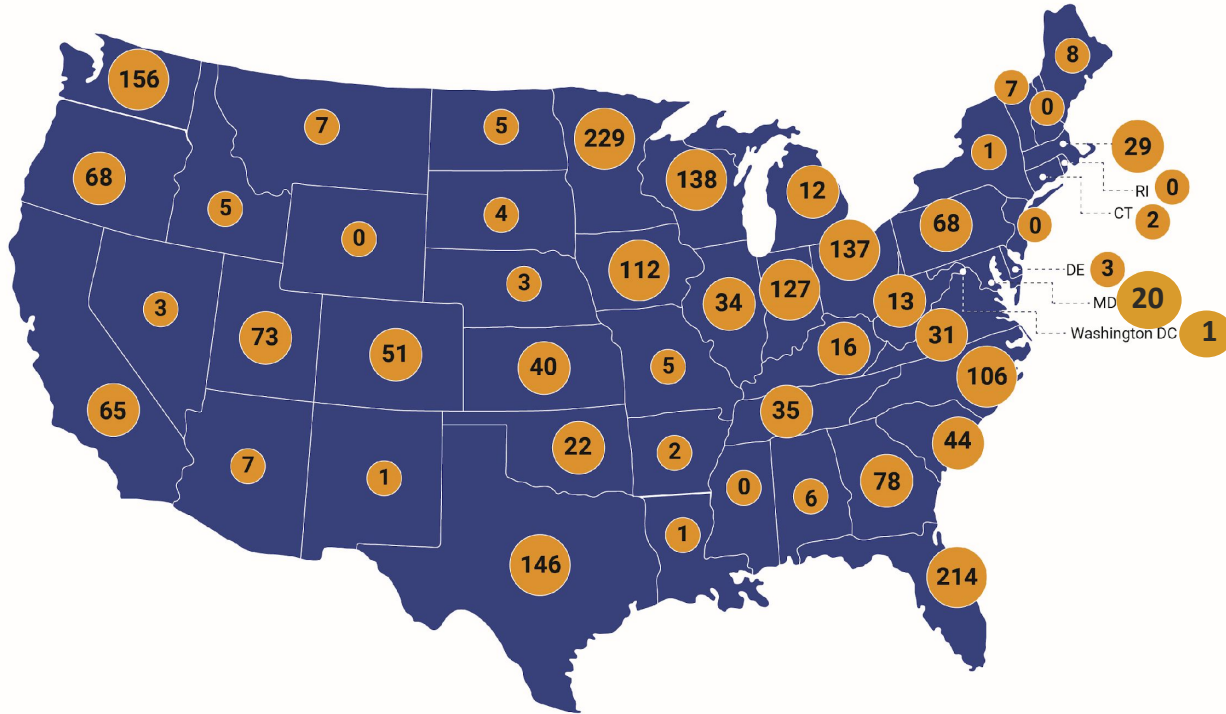
Equity Gap



Transparency Gap



Stormwater Utilities – A National Perspective



- First Stormwater Utility Established 4 Decades Ago
- Currently over 2,135 Stormwater Utilities Nationwide in 42 States
- And today....4 in New Jersey

Source: Western Kentucky University Stormwater Utility Survey - 2024

Stormwater User Fee is NOT a Tax!

Services Provided



Annual Costs
Incurred



Costs Recovered
through User Fees

Services Received



NEW JERSEY'S ENABLING LEGISLATION

The Clean Stormwater and Flood Reduction Act (P.L.2019, c. 42 (C.40A:26B-1 et al.))

Key Features of the NJ Act

- Enacted in 2018 by the State Legislature
- Authorizes the establishment of stormwater programs, assessment of stormwater user fees and charges to recover stormwater management costs
- Provides guidelines on accounting, charge responsibility, enforcement, credits, & admin procedures
- Assures a reasonable level of defensibility to establishing user fees and charges

NEW JERSEY

Other Potential Funding and Financing Sources

Keep in Mind:

- Grants & Loan Funding are largely for Capital Infrastructure
- Limited funding support

STATE OPTIONS:

- NJDEP GRANT & LOAN PROGRAMS
- NEW JERSEY I-BANK
- ENVIRONMENTAL INFRASTRUCTURE FINANCING PROGRAM
- SEWAGE INFRASTRUCTURE IMPROVEMENT ACT GRANTS
- 319 FUNDING (Water Quality Projects) - ???

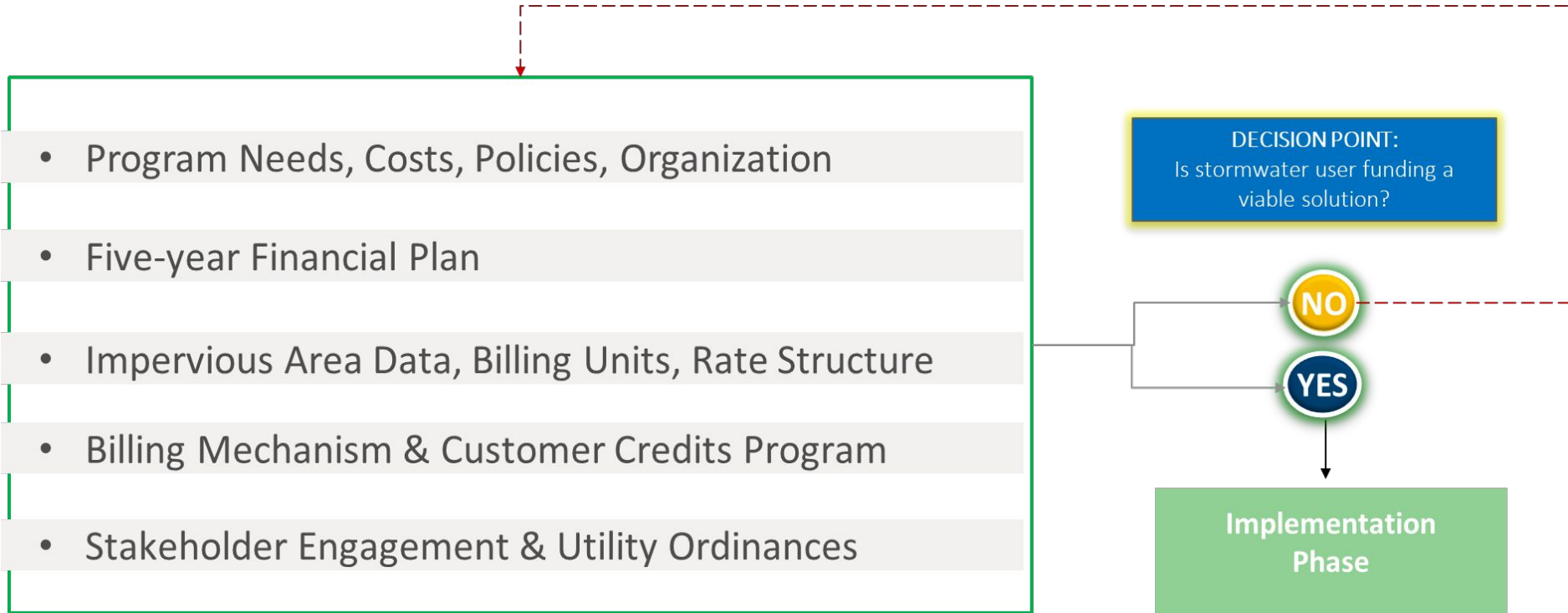
FEDERAL OPTIONS:

- WATER INFRASTRUCTURE FINANCE & INNOVATION ACT (WIFIA)
- FEMA HAZARD MITIGATION ASSISTANCE (HMA) PROGRAM
- US HUD COMMUNITY DEVELOPMENT BLOCK GRANTS (CDBG)
- BRIC - ???

Municipalities Still Need Funding Capacity To:

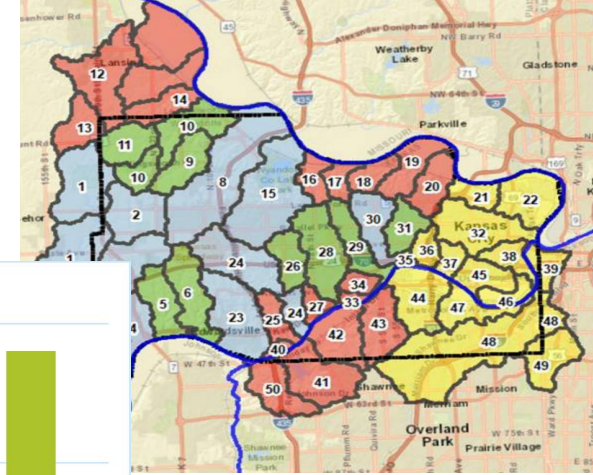
- *Provide required matching funds*
- *Repay the annual debt service associated with loans*

Key Components in Developing a Stormwater User Fee

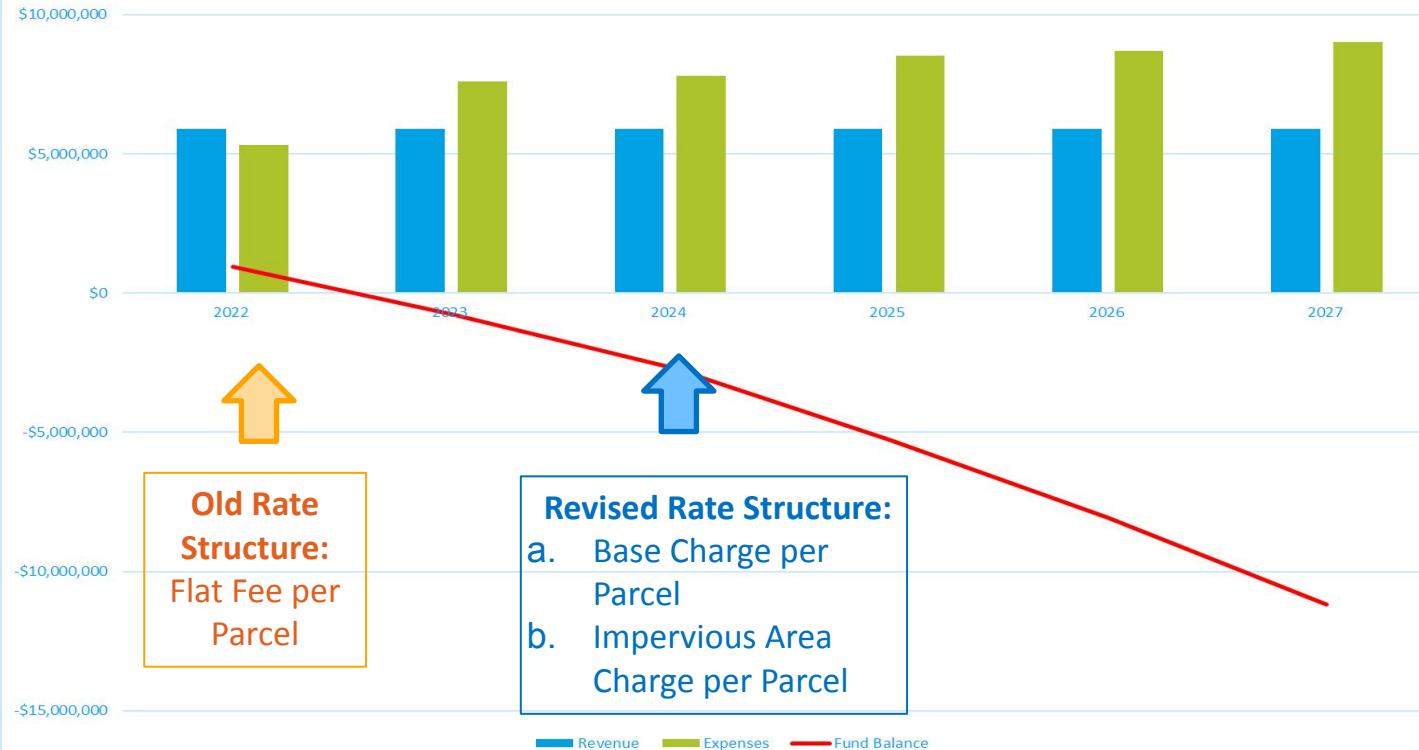


Unified Govt of Wyandotte County, KS

MS4 Permit Covers 50+ Watersheds



Stormwater Fund Financial Outlook



Cost Increases:

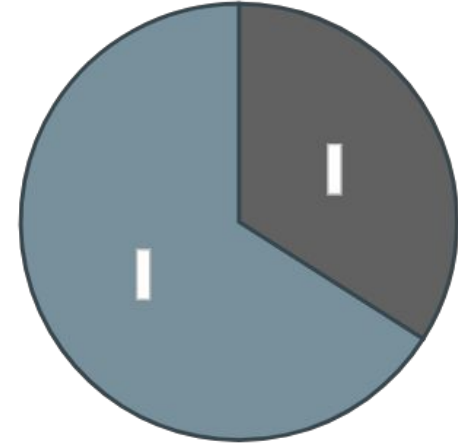
- Increase O&M Levels
- MS4 Regulatory Compliance
- CSO Compliance
- Critical Projects In Priority Watersheds
- Drainage Maintenance Rehab
- Localized Flood Mitigation

Importance of Rate Structure In Affordability & Equity

Actual Revenues Generated



Actual Impervious Area Distribution



Successful Stormwater Resilience Path



More Impervious Area (IA) = More Stormwater Runoff

- Charge based on Property's Impervious Area (IA)
- Recognize the demand a property places on the System



Technical Diligence, Stakeholder Engagement, Leadership Commitment
Sustainable Path Set with a 9 to 1 Approval on November 3, 2022

Benefits of a Stormwater User Fee Funded Utility

- Dedicated funding to address stormwater program needs
- Sustainable Fee and Not a Tax
- Enables equitable cost recovery
 - Reasonable nexus between fees and service demands
- Incentives onsite stormwater management
- Helps enhance capital funding by leveraging loans & grants
- Secures long-term resilience of the community



Scalable Funding Approach To Balance Affordability and Evolving Program Needs

Thank You

Prabha Kumar

Stormwater Utility Services Practice Lead

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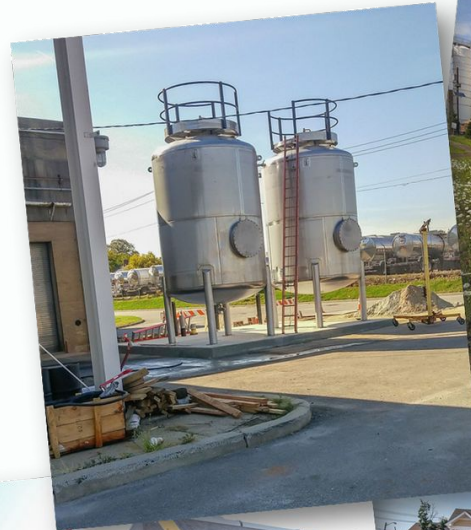
NEW JERSEY WATER BANK

**"Helping to Improve NJ's Infrastructure,
One Project at a Time"**



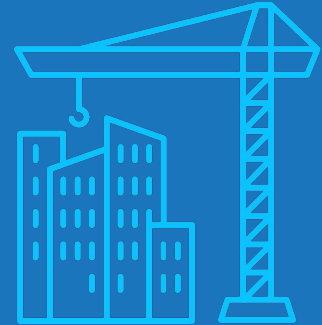
INTRODUCTION

The NJ Infrastructure Bank (I-Bank), in partnership with the NJ Department of Environmental Protection (NJDEP), offers low-cost financing through the NJ Water Bank to modernize and strengthen New Jersey's water infrastructure, that enhances ground and surface water resources, ensures the safety of drinking water supplies, and protects public health



SHORT-TERM CONSTRUCTION LOAN PROGRAM (CLP)

- Close Short-term Loan for entire project cost Upon DEP Contract Cert.
- 5 full Fiscal Years for P&D and Construction
- Generous Cost Allowance (Engineering, Environmental, Legal, etc.)
- No out-of-pocket payments
- Interest charged only on Requisition Draws
- Credit Approval w/ LFB – managed by I-Bank on behalf of Borrower
- Requires Investment Grade rated “Note” guarantee (limited exceptions)



LONG-TERM LOAN

- Long-Term Loans converted upon construction completion
- Financing Terms dictated by program year at time of each DEP construction contract certification
- Base Rate Loans = 50% Blended Rate (50% I-Bank / 50% DEP no interest)
- Maximum Maturity = Lesser of “Useful life” or 30 (45) years
- Credit Worthiness requirements:
 - Must have Investment grade rating
 - Maintain Investment grade rating for term of loan

PROGRAM SAVINGS SFY26

Principal Forgiveness

est. \$260 million (Large portion targeted to DACs)

Loans

Base Program: 50% funding (DEP) 0% interest; 50% AAA interest

Advantageous: 75% funding (DEP) 0% interest; 25% AAA interest

Savings – Average A rated community w/ 30-year financing:

- Base Program (50/50) ~ 35% v. Independent bonding

ELIGIBLE STORMWATER PROJECTS

Eligible projects include construction, expansion, or replacement of stormwater management systems, including the following:

- Non-point Source Pollution/Stormwater management
- Construction of regional basins
- Major stormwater system rehabilitation
- Replacement of existing storm drains
- Rehabilitation of tide gates
- Extension of outfall points
- Runoff control (stream bank stabilization/ restoration)
- Stream/lake embankment restoration



SAVINGS FOR STORMWATER

CSO Abatement - Green/grey infrastructure

50% Principal Forgiveness on first \$10M (\$5M cap) | Blended 25% rate |

CSO Abatement Affordability

AC1 - 100% Principal Forgiveness on first \$8M | Blended 25% rate |

AC2 - 100% Principal Forgiveness on first \$7M | Blended 25% rate |

Stormwater Resilience (Green Infrastructure)

50% Principal Forgiveness on first \$4M | Blended 25% rate |

Sewer Overflow and Stormwater Reuse Grants (OSG) Program

\$2M in Principal Forgiveness for remaining 20% of share of OSG funding



Hoboken City

Southwest Resiliency Park

Implementing Green Infrastructure

Rain Gardens,
Bioswales,
Tree Pits,
Porous Pavers, &
Subsurface Chambers

Over \$9M in Principal Forgiveness

Savings!





CONTACT INFORMATION



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III. ENGAGING YOUR COMMUNITY





Public Notification

VS.



Public Outreach

VS.



Stakeholder Engagement

ENGAGEMENT STRATEGIES

- **LISTEN, LISTEN, LISTEN.**
- **Keep everyone informed** throughout.
- **Go to the people** directly.
- **Go to where they gather** (HOA meetings, Churches, civic groups).
- Based on the message and the target audience to reach, **identify the “voices”** to be heard and where/how those individuals gather information.
- **Attend organizational meetings**, providing information and asking for engagement - pose questions and respond immediately.
- Utilize **trained facilitators**.
- Leverage **relationships with reporters** to gain media coverage.



Raritan Township Stormwater Utility

JOHN P. TULLY

**Supervisor of Engineering & IT & Supervisor of Stormwater Utility
Township of Raritan**



**What was the driving
force behind choosing to
form a stormwater
utility?**

Raritan Township 5-Year Stormwater Budget



				Year 1	Year 2	Year 3	Year 4	Year 5
Raritan Twp Stormwater Program Budget - Feasibility Phase								
Budget Category			CATEGORY	2026	2027	2028	2029	2030
LABOR	Admin	Labor - Admin	A	\$ 145,891	\$ 150,268	\$ 154,776	\$ 159,419	\$ 164,202
	O&M	Labor - O&M	OM	\$ 301,877	\$ 310,933	\$ 320,261	\$ 329,869	\$ 339,765
	Labor Subtotal			\$447,768	\$461,201	\$475,037	\$489,288	\$503,967
O&M/CIP	St Sweep	Street Sweeping	SS	\$ 144,943	\$ 147,791	\$ 150,725	\$ 153,747	\$ 156,859
	Leaf Coll	Leaf Collection	LC	\$ 318,767	\$ 327,835	\$ 337,176	\$ 346,796	\$ 356,705
	MS4 System	Inlet Inspections & Cleaning	OM	\$ 57,005	\$ 58,715	\$ 60,476	\$ 62,290	\$ 64,159
		Inlet Repairs	OM	\$ 333,675	\$ 343,686	\$ 353,996	\$ 364,616	\$ 375,555
		Retention Basin Deferred Maintenance	OM	\$ -	\$ 269,447	\$ 269,447	\$ 269,447	\$ 269,447
		Retention Basin Annual Maintenance	OM	\$ 176,361	\$ 181,652	\$ 187,101	\$ 192,714	\$ 198,496
		Pipe Inspections	OM	\$ 44,051	\$ 45,373	\$ 46,734	\$ 48,136	\$ 49,580
		Pipe Repairs	OM	\$ -	\$ -	\$ 140,201	\$ 144,407	\$ 148,740
		Outfall Inspections	OM	\$ -	\$ -	\$ -	\$ -	\$ -
		MS4 Permit Admin	OM	\$ -	\$ -	\$ -	\$ -	\$ -
	Flood Mitigation	Studies/Design	FM					
		Projects	FM					
	Other	Other SW Operating Costs	OM	\$ 298,300	\$ 116,699	\$ 120,200	\$ 123,806	\$ 127,520
	O&M/CIP Subtotal			\$1,373,102	\$1,491,197	\$1,666,056	\$1,705,959	\$1,747,059
Total Expenses				\$ 1,820,870	\$ 1,952,398	\$ 2,141,093	\$ 2,195,247	\$ 2,251,026



Who were some of the stakeholders you engaged with during the process of forming a stormwater utility?

Why did you choose them?



How did you conduct public outreach to inform the residents of your municipality about the stormwater utility?



Did you receive any initial pushback when it was decided that the municipality was going to form a stormwater utility and who did it come from?



What has been the biggest benefit of forming a stormwater utility so far or what do you project to be the biggest benefit in the future?

For more information



**Scan the QR Code below to visit the
Raritan Township Stormwater Utility resource
page!**



THANK YOU!
QUESTIONS?

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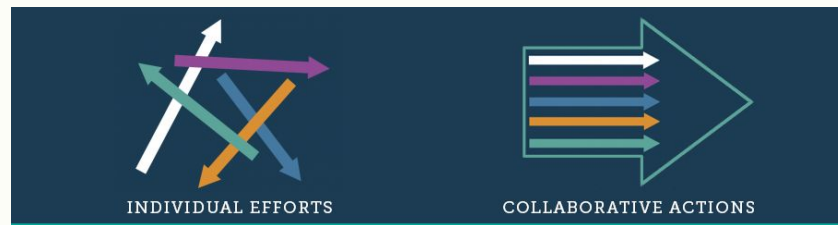
john.tully@raritantwpnj.gov



JERSEY WATER WORKS

Smart infrastructure. Strong communities.

THANK YOU! STAY INVOLVED!



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