

Enhancing Climate Resilience through Municipal Watershed Improvement Plans



The Cost of Climate Change

STATE OF NEW JERSEY 2024 ALL-HAZARD MITIGATION PLAN

NATURE-BASED HAZARD PROFILES AT A GLANCE

FLOOD

18.5%

OF NEW JERSEY'S LAND AREA IS LOCATED IN THE SPECIAL FLOOD HAZARD AREA (SFHA)

597

STATE FACILITIES ARE WITHIN THE SFHA

3,000+

BRIDGES AND TUNNELS

5,000

MILES OF ROADWAY ARE LOCATED WITHIN THE SFHA



WILDFIRE

1,500

WILDFIRES OCCUR ON AVERAGE EVERY YEAR

7,000

TOTAL ACRES BURNED

99%

ARE HUMAN CAUSED



STORM LOSSES

\$2.02 BILLION

ESTIMATED IN DAMAGE FROM HURRICANE IDA

\$873.6 MILLION

APPROVED IN DISASTER RELIEF

45 THOUSAND

HOMES

NFIP STATISTICS

188,781

TOTAL POLICIES

61,013

PROPERTY LOSSES

\$24,279

AVERAGE LOSS VALUE

\$6 BILLION

IN TOTAL PAYMENTS

FEMA HAZUS ESTIMATES

FLOOD



50 THOUSAND

PEOPLE SEEKING SHELTER DUE TO DISPLACEMENT

775 THOUSAND

TONS OF TOTAL DEBRIS ACCUMULATION



WIND



2 THOUSAND

PEOPLE SEEKING SHELTER DUE TO DISPLACEMENT

8.6 BILLION

IN DAMAGES AND ECONOMIC LOSS FOR A 1% EVENT

EARTHQUAKE



5.9 BILLION

IN BUILDING-RELATED ECONOMIC LOSS



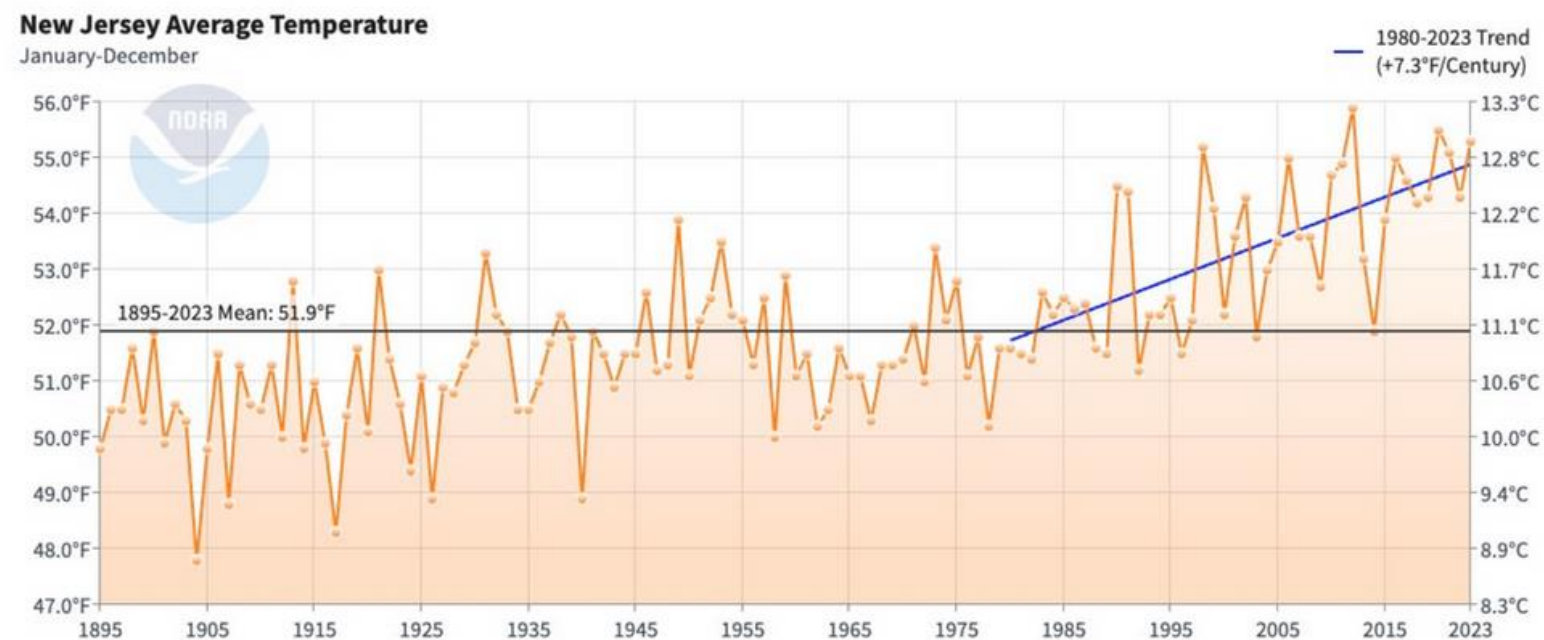
5.13 MILLION

IN UTILITY SYSTEM ECONOMIC LOSSES

IT'S GETTING HOTTER

Observations

New Jersey annual temperature: 1895-2023



data source: National Centers for Environmental Information

1895-2023 upward trend
of 2.9° F per 100 years

1980-2023 trend is
7.3° /100 years

15 of the 20 warmest
years have occurred
since 2001; 19 of 20 since
1990

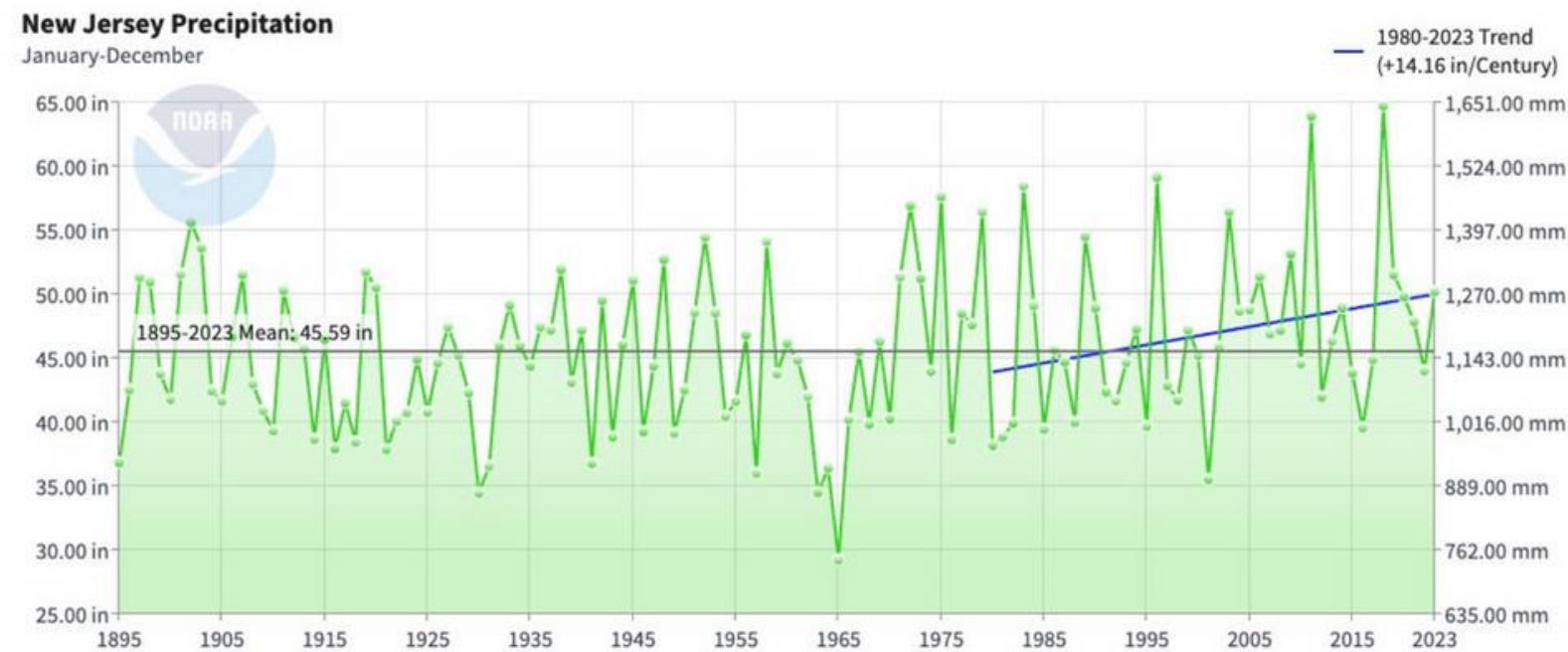
2012 was the warmest
year on record, 2020 2nd
warmest, 2023 3rd warmest

Warming in all seasons

Source: NJ State Climatologist David Robinson “New Jersey’s Changing Climate”
presentation to
ANJEC Environmental Congress, 9/27/24

AND IT'S GETTING WETTER

New Jersey annual precipitation: 1895-2023



data source: National Centers for Environmental Information

1895-2023 upward trend
of 3.00" per 100 years

1980-2023 trend of 14.16"
per 100 years

2018 & 2012 the two
wettest years

Large decadal variability
(early 1960s drought, wet
1970s, quite variable in
the past decade)

Most of the upward trend
comes from changes in
spring and fall



Source: NJ State Climatologist David Robinson "New Jersey's Changing Climate"
presentation to
ANJEC Environmental Congress, 9/27/24

Climate Change

Summing up:

New Jersey has a wide variety of weather and climate conditions.

Climate continues changing in New Jersey, much like elsewhere. This includes changes in extremes.

Change will continue and likely accelerate in the foreseeable future. Expect more extremes.

Impacts will expand, becoming increasingly noteworthy.

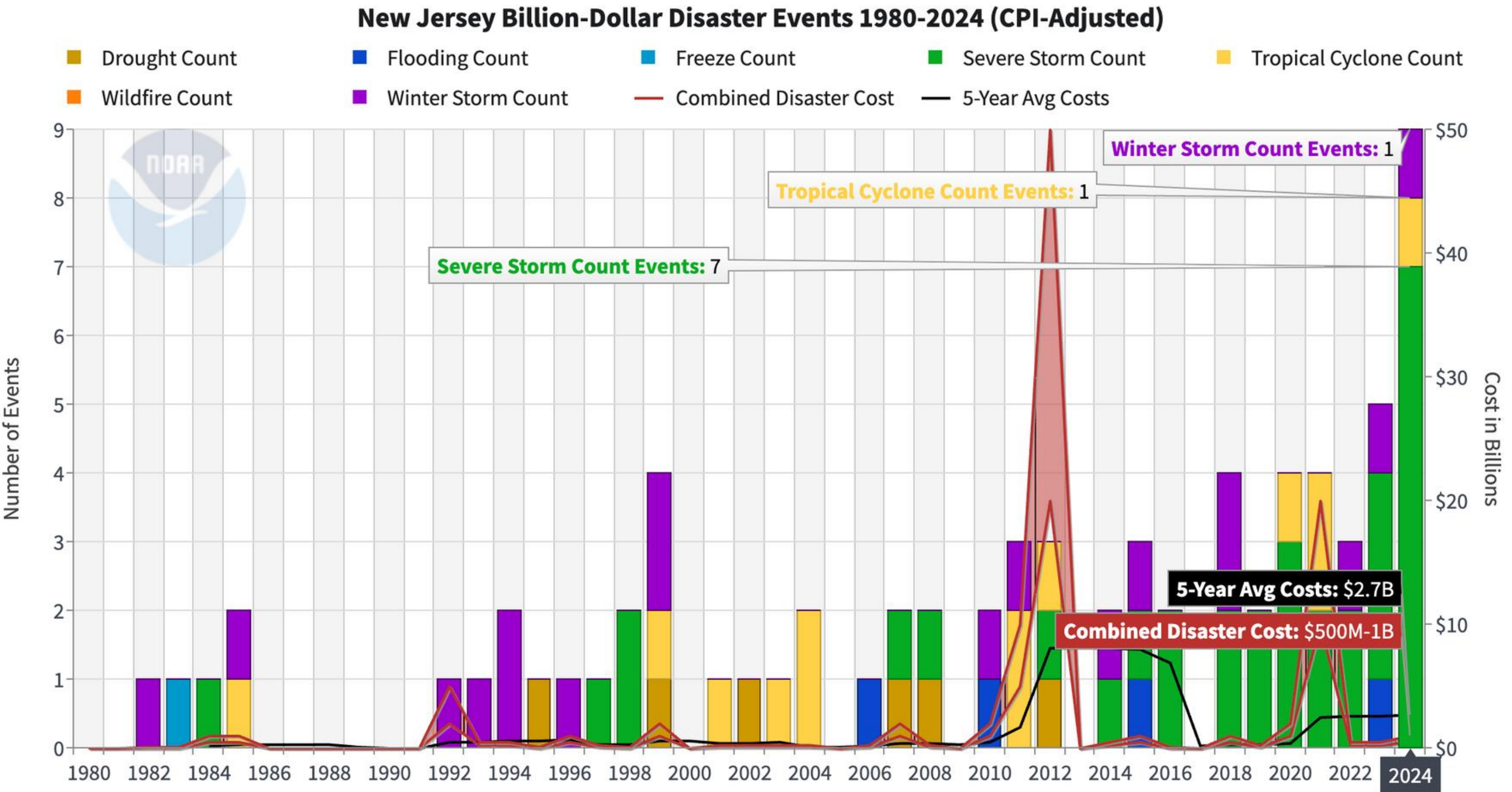
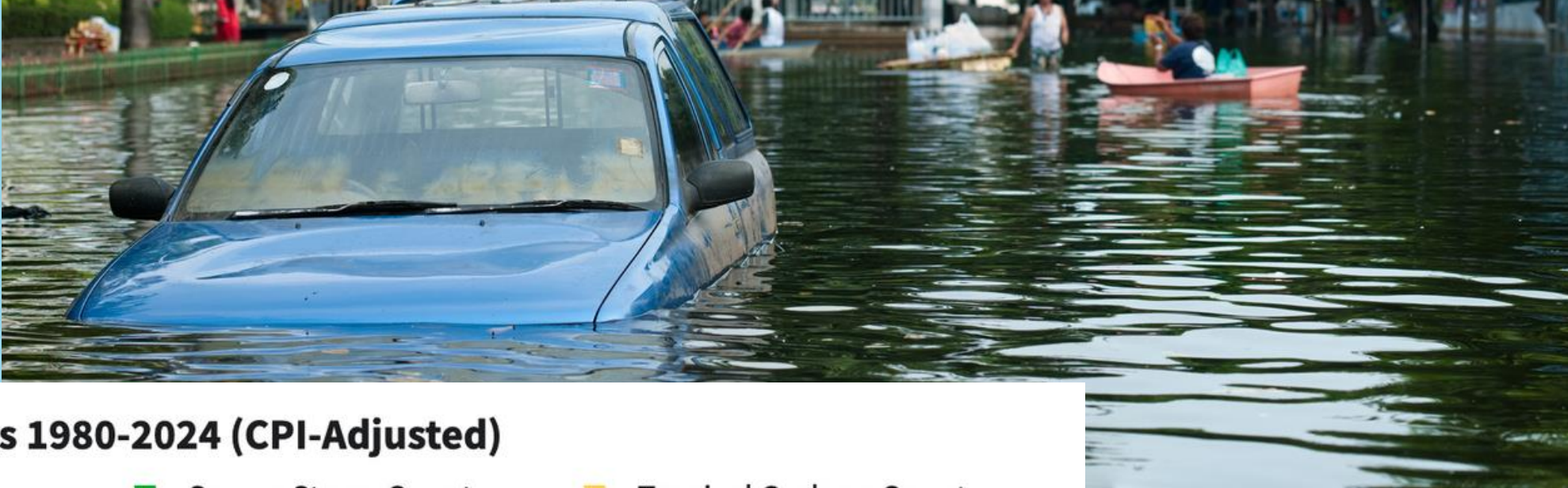
We must keep a watchful eye of NJ's weather and climate

While ongoing change is certain, time remains for mitigative and adaptive actions to address and attenuate threatening conditions.

Source: NJ State Climatologist David Robinson
"New Jersey's Changing Climate" presentation to
ANJEC Environmental Congress, 9/27/24

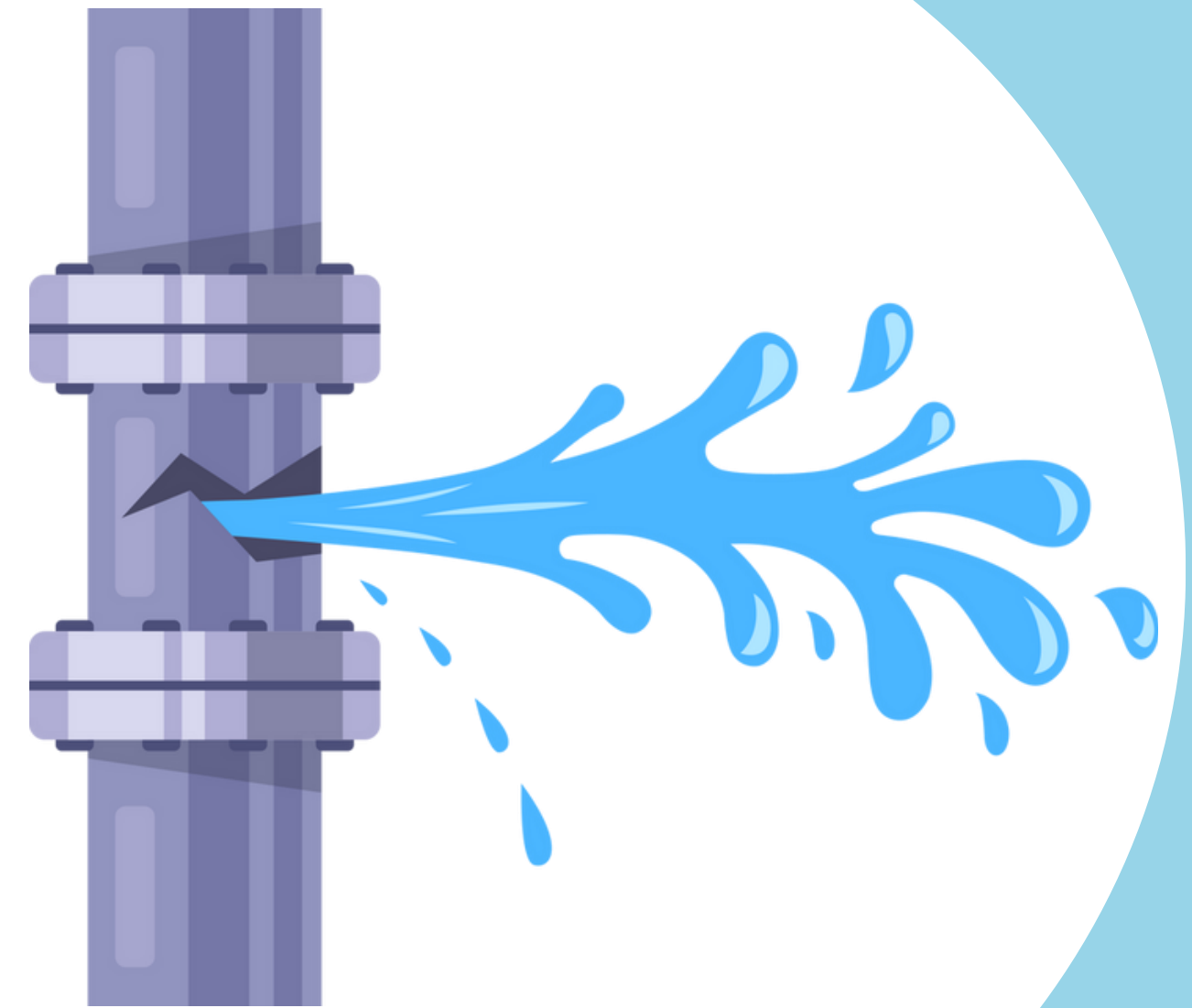


Increased flooding



Bigger storms

Failing infrastructure



Did you know?

- New Jersey has a \$16 billion stormwater infrastructure problem, and right now there is no dedicated funding source to address this massive need.

How to pay for it?



**A new economic study finds every \$ spent
on climate resilience and preparedness
saves communities \$13 in damages,
cleanup costs, and economic impact..***

*Source: US Chamber of Commerce

“Being Prepared for the Next Disaster Pays Off, New Study Shows”

<https://www.uschamber.com/security/being-prepared-for-the-next-disaster-pays-off-new-study-shows>

Current method of funding stormwater management



PROPERTY TAXES



SEWER FEES

Maintaining and updating infrastructure



What are my options?

Do nothing.

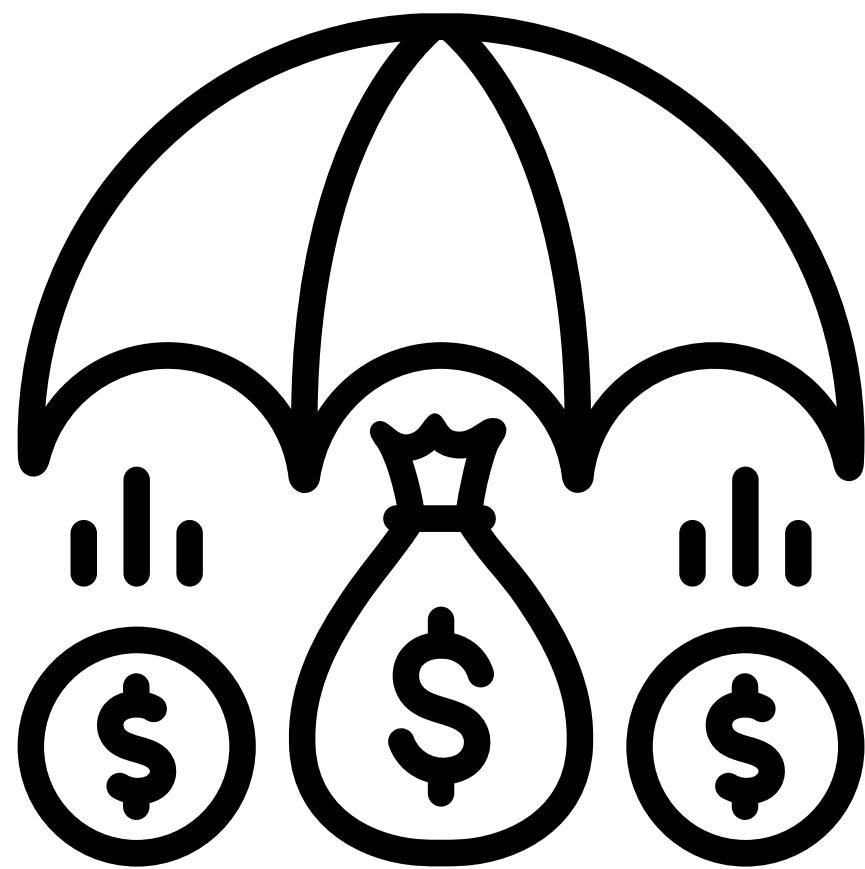
Increase property taxes.

Increase sewer rates.

Create a stormwater utility.



What is a stormwater utility?



Similar to a water or sewer utility, a stormwater utility is a dedicated funding mechanism to pay for a community's stormwater management program.

Equitable -- All those who contribute to the problem will help pay for the solutions.*

Dedicated - Funds raised can only be used for stormwater management.

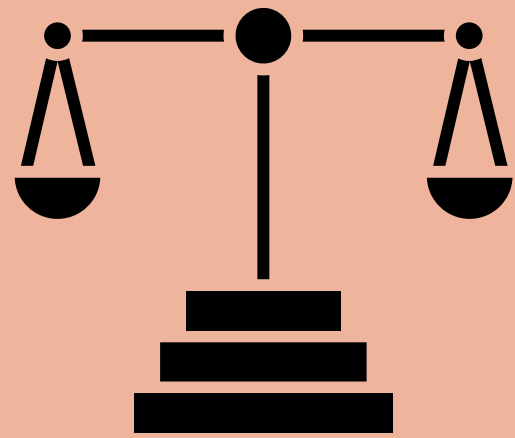
Fees calculated based on impervious surfaces.

Credits usually available to reduce your fee.

*The sole exemption is for agriculture/horticulture

Equitable

Example -- New Brunswick



Before:* 51% of landowners in New Brunswick were exempt from paying for stormwater management before the stormwater utility was enacted.

***After:* Rutgers University, a major source of impervious surfaces and stormwater runoff in New Brunswick, now has an annual stormwater fee of \$250,000.**

That is the equivalent of 3,246 households' share of the stormwater cost.

*Source: "New Brunswick is NJ's first town to set up a stormwater utility"

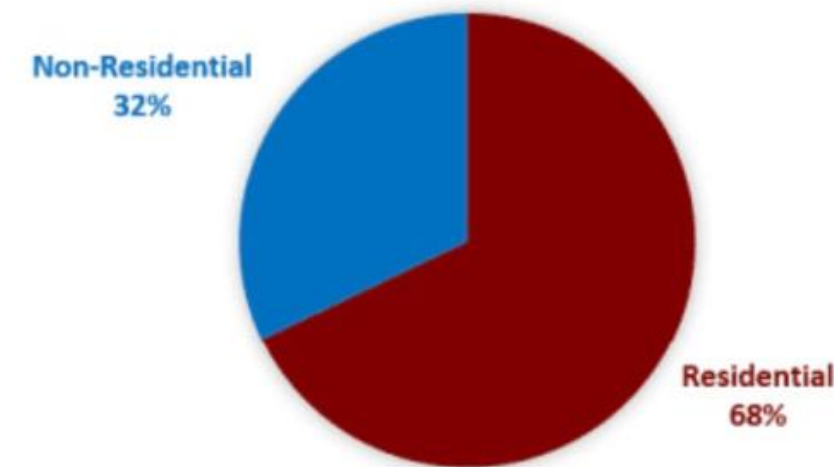
<https://www.njspotlightnews.org/2024/06/stormwater-utility-new-brunswick-first-town-in-nj-rainwater-runoff-fee-property-owners/>

Equitable

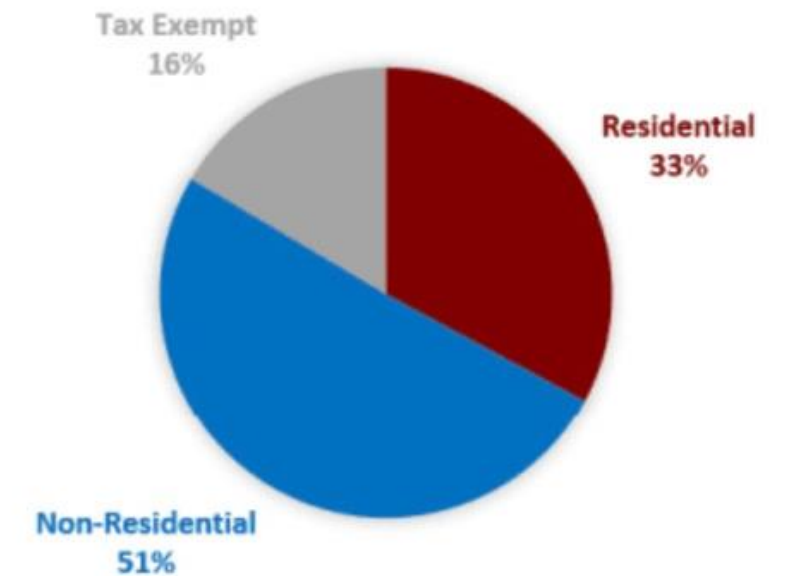
Paying a fair share

BREAKDOWN OF REVENUES COLLECTED VIA:

PROPERTY TAX COLLECTED BY PROPERTY VALUE



STORM WATER FEES COLLECTED BY IMPERVIOUS AREA



Fee Distribution

Source: City of Columbus, WI
<https://www.cityofcolumbuswi.com/2445/Additional-Information>

Dedicated

To protect against legal challenges and to address concerns over the potential diversion of funds to other pressing budget needs, the *enabling statute requires that all fee revenue be dedicated **solely** to stormwater-related expenses.*



Your name _____	0123
_____	Date _____ 20 ____
Pay to the order of _____	\$ _____
_____ dollars	Security features included details on back
Memo _____	
<i>For stormwater management purposes only</i>	012345678 : 0123 : 01234

Dedicated

Stormwater Utilities provide dedicated funding for:

- Establishment of stormwater utility
- Capital expenditures
- Operations and maintenance
- Asset Management
- Stormwater management plan and stormwater control ordinances
- New Jersey Pollutant Discharge Elimination System (NJPDDES)
- Combined sewer overflow (CSO)
- Monitoring, inspection, and enforcement
- Public outreach and education
- Administrative costs



*Also, any additional stormwater activities as authorized by the NJDEP, the Division of Local Government Services in the department of Community Affairs, or the Local Finance Board

Source: NJ Future Stormwater Utility Resource Center, <https://stormwaterutilities.njfuture.org/>

Fees

Fees are based on impervious surface or hard surfaces on a property.

“The cost of an ERU is \$77 a year, each parcel in the City is subject to the minimum fee of one ERU.

With each parcel subject to a minimum fee, most homes in New Brunswick would incur a quarterly charge of \$19.25.”

(\$6.42 a month)

**Source: “New Brunswick Creates Stormwater Utility to Deter Flooding,”
CityofNewBrunswick.org**

ERU=Equivalent Residential Unit

Credits

Credits are typically offered for on-site stormwater management practices that manage peak rate, run-off volume and/or water quality. They may be extended to other activities such as maintenance of public facilities on private property, public education support, and other specific green initiatives.



**Impervious area
reduction**



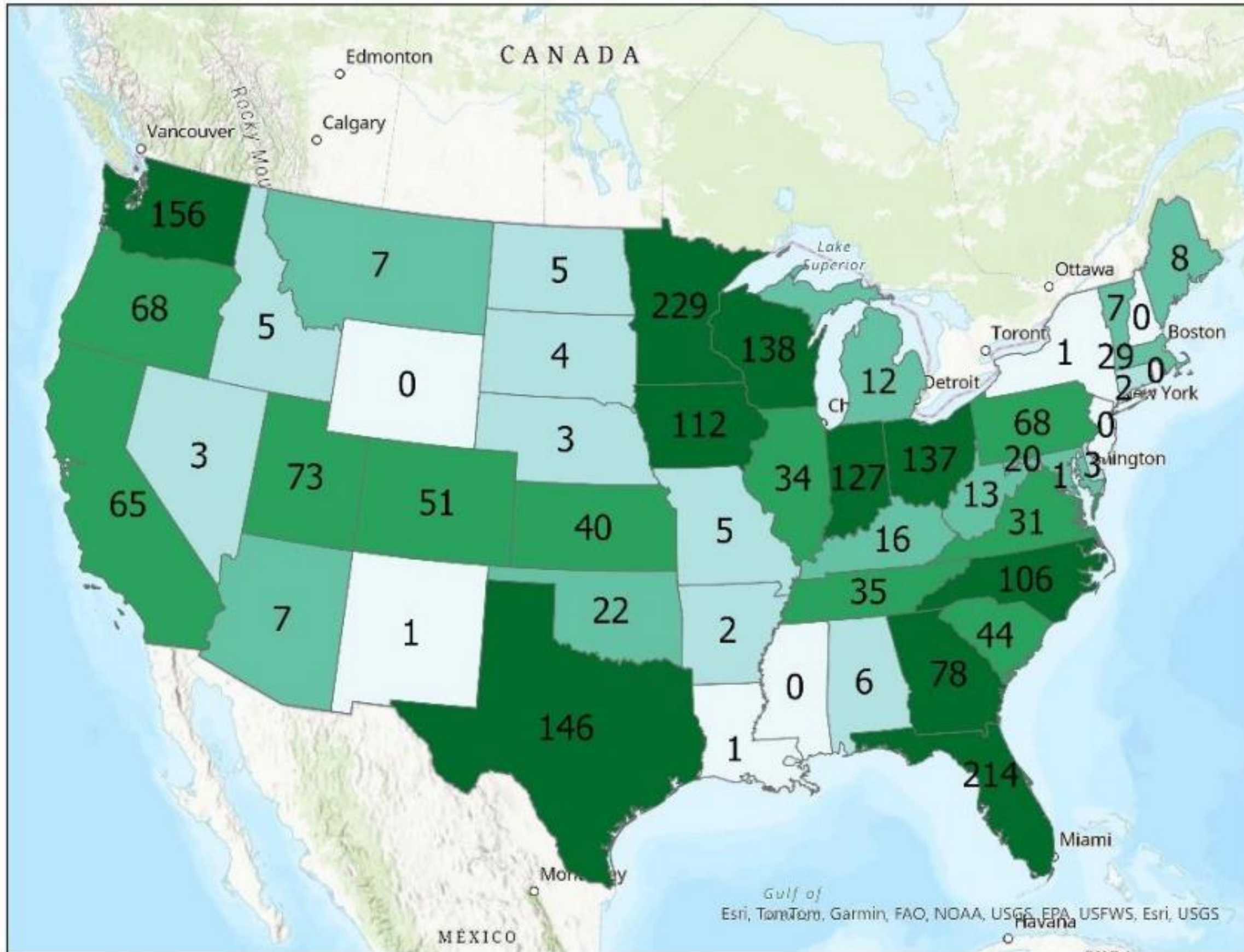
Rain Garden



Rain barrel

Solutions

U.S. SWU Fees 2024



2135 stormwater utilities
in 42 states

Nationwide, the average
monthly single-family
residential fee was \$6.19.

The most widely used method
of funding is the ERU system
comprising about half of all
SWUs. An Equivalent Residential
Unit is usually the average or
median impervious area on a
single-family residential parcel.

Source: Western Kentucky University
Stormwater Utility Survey 2024

Action Items



Identify those in your community who have been impacted by flooding and/or water quality issues.

Educate and work with business leaders who could benefit from reduction of flooding.

Speak at your city council meeting about flooding and/or water quality problems in your community.

Contact your elected officials and email them your comments. (Contact info will be on their website.)

Write and publish op-eds or letters to the editor.

Put in a rain barrel or a rain garden on your property.

Get on NJDEP's mailing lists and make comments when the option arises.

Resources

Stormwater Utilities Resource Center

<https://stormwaterutilities.njfuture.org/>



NJDEP Stormwater Utilities Guidance

https://dep.nj.gov/njpd-es-stormwater/swu_stormwaterutility/

***Hot off the presses --“Stormwater Utilities
Can Facilitate Green Infrastructure***

**[https://www.jerseywaterworks.org/resource
s/stormwater-utilities-can-facilitate-green-
infrastructure-updated-october-2024/](https://www.jerseywaterworks.org/resource/s/stormwater-utilities-can-facilitate-green-infrastructure-updated-october-2024/)**

Stormwater Utilities
Can Facilitate
Green Infrastructure

Issued by the Jersey Water Works Stormwater Utility
Subcommittee and Green Infrastructure Committee
Updated October 2024

New JWW Stormwater Utilities Subcommittee Resource!

Stormwater Utilities Can Facilitate Green Infrastructure

(Updated October 2024)

The Stormwater Utilities Subcommittee updated this memo to help towns understand the ways in which stormwater utilities can help them build green infrastructure. Take a look at the resources in this document, consider a stormwater utility, and help your community make a healthier New Jersey a reality!



Scan me!



Questions?

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