



Photo: Ausable Freshwater Center

PAYING FOR RESILIENCE IN NEW YORK STATE

**REBUILD
BY
DESIGN**



TODAY'S SPEAKERS

- **Amy Chester**, Director, Rebuild by Design
- **Ríobart (Rob) Breen**, Director, Institute for Transformational and Ecosystem-Based Climate Adaptation (ITECA) at the University at Albany
- **Neeyati Johnson**, Network Manager, New York State Adaptation Practitioners Network
- **Blair Horner**, Senior Policy Advisor, New York Public Interest Research Group

**REBUILD
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INSTITUTE FOR
TRANSFORMATIONAL
AND ECOSYSTEM-BASED
CLIMATE ADAPTATION
UNIVERSITY AT ALBANY
STATE UNIVERSITY OF NEW YORK

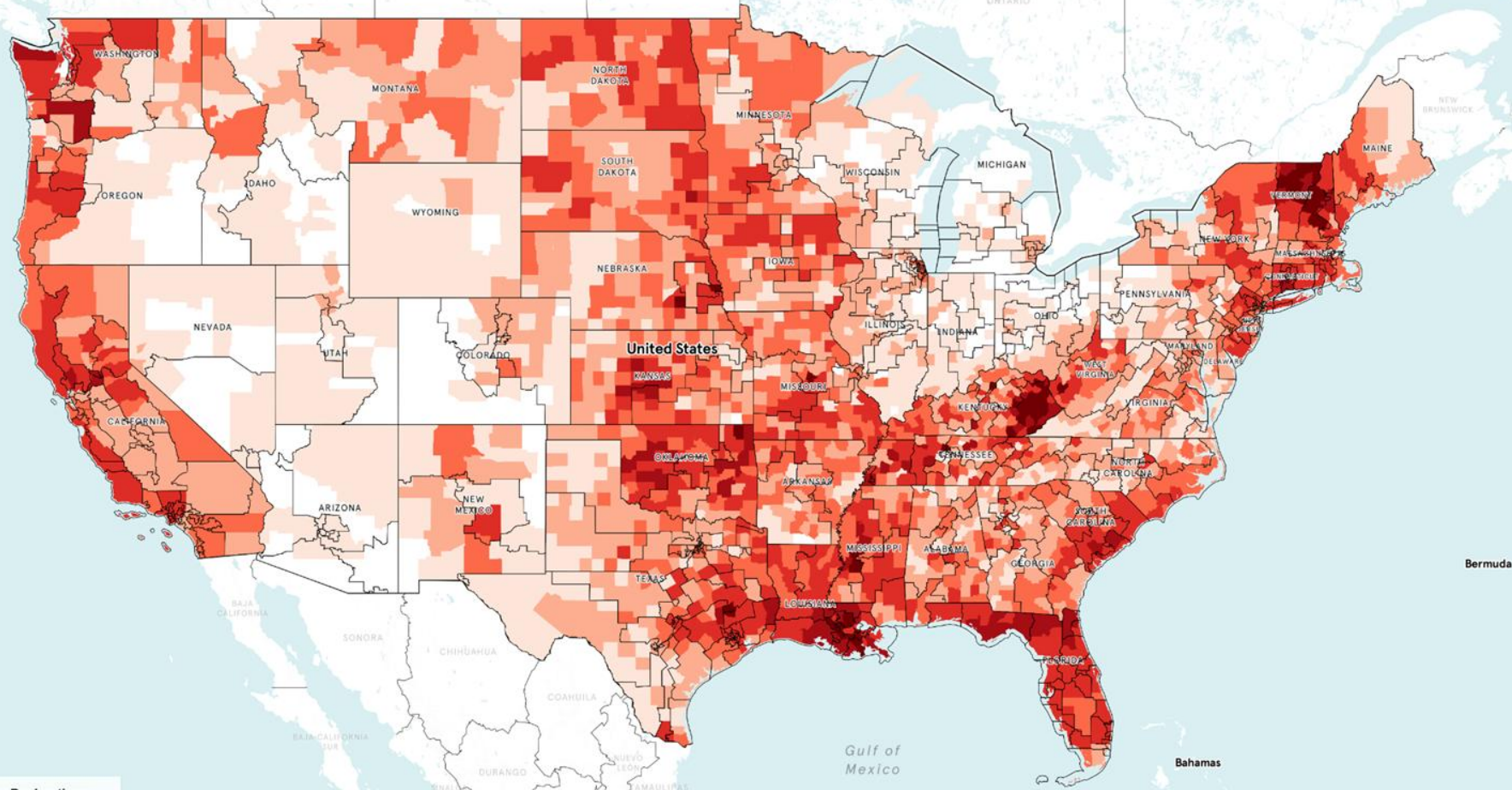




ATLAS OF ACCOUNTABILITY

COUNTY-LEVEL DISASTER DECLARATIONS AND CONGRESSIONAL DISTRICTS (2011-2024)

Search Address Here



ATLAS OF ACCOUNTABILITY

COUNTY-LEVEL DISASTER DECLARATIONS AND CONGRESSIONAL DISTRICTS (2011-2024)

Search Address Here



**99.5% CONGRESSIONAL DISTRICTS
HAVE FACED AT LEAST ONE FEDERALLY
DECLARED WEATHER DISASTER
SINCE 2011.**

ONLY TWO DISTRICTS (OH-09 AND OH-13) HAVE NOT.



Rotterdam



Binghamton

CLIMATE CHANGE IN NEW YORK STATE



Schoharie



Broome County

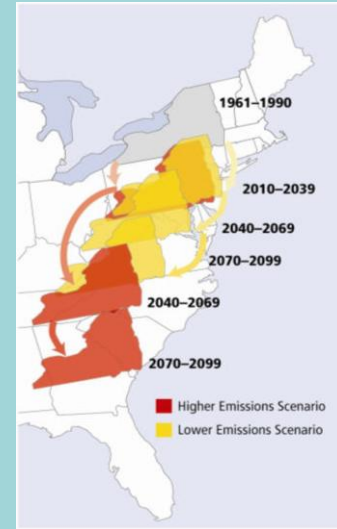


Pratsville

CLIMATE CHANGE IN NEW YORK

With current climate conditions of only 1.29°C (2.32°F) global increase:

- Increased precipitation
- More frequent drought
- Sea-level rise
- More extreme events:
 - Floods
 - Extreme heat waves
 - Ice/snow
 - Coastal storms & winds
- Wildfires and smoke
- Stressed and failing infrastructure
- Loss of food crops and livestock
- Migration of fish, wildlife and insect species
- Human climate migration



Source: NYS ClimAid 2014

CLIMATE CHANGE IN NEW YORK

- With 2,625 miles of shoreline, New York State's coastline sea level has risen almost 1 foot in the past century
 - Projected increase of another 1 to 2 feet by midcentury ([NYS Climate Impacts Assessment](#), [NOAA Office for Coastal Management](#)).
- NYS does not yet have a statewide map that anticipates future inland and coastal flooding.
- There is currently no statewide climate adaptation or resilience plan and adaptation efforts remain fragmented.
- Many NYS local governments have not yet developed a climate adaptation and resilience plan

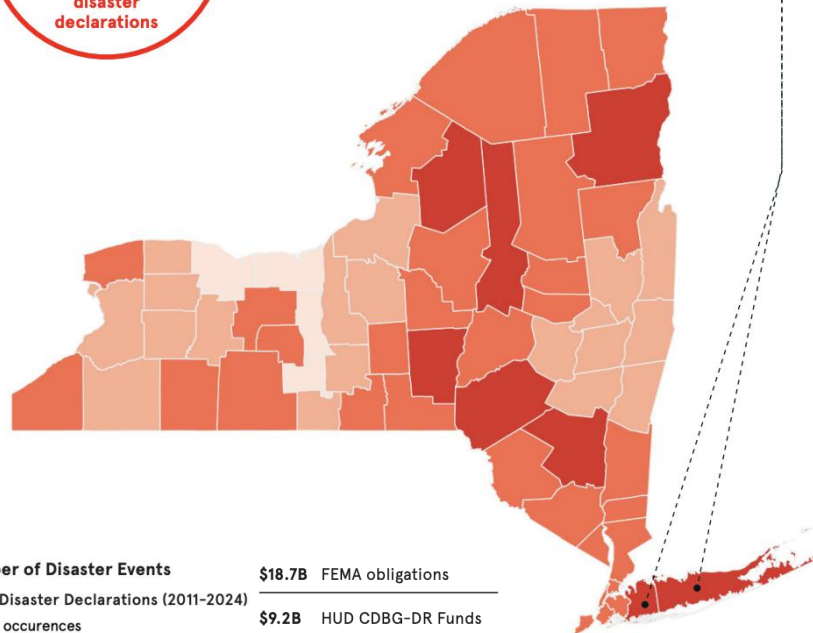
NYS CLIMATE IMPACT COSTS 2011-2024

- 23 Federal Disaster Declarations
- Every county has been affected
- More than \$27 billion in federal support (FEMA + HUD)
- Climate disasters have cost the state more than \$35.8 billion in damages since 2000

23
disaster
declarations

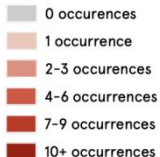
48% of counties in New York have had 5 or more recent disasters.

Nassau and Suffolk counties have each had 9 recent disasters.



Number of Disaster Events

Major Disaster Declarations (2011-2024)



\$18.7B FEMA obligations

\$9.2B HUD CDBG-DR Funds

\$27.8B FEMA + HUD assistance

\$1,385 per capita cost

MAP MADE BY REBUILD BY DESIGN
FEMA DATA COURTESY OF IPARAMETRICS

NEW YORKERS ARE ALREADY PAYING

- The average New York homeowner is paying \$1,000 more per year for home insurance since Hurricane Ida in 2021 (Center for Climate Integrity, 2026)
 - Premiums have risen 19% since 2018 (City & State, 2024)
- From 2019-2023, food prices rose by 25% in NYS, and are expected to continue to rise related to severe weather and climate change impacts (NYC Mayor's Office, 2025)
- Risky real estate as the market-rate value of New York City properties in the floodplain has already risen 44% since Superstorm Sandy to \$176 billion (City & State, 2024)
- Reduced wages and productivity as 63% of the statewide total labor force resides in counties exposed to extreme heat in 2023 (NYS Dept of Labor, 2025)

An aerial photograph of a modern waterfront park. In the foreground, there's a curved concrete promenade with green grass and young trees. To the left, a road with cars and a pedestrian bridge is visible. In the background, a large suspension bridge spans a body of water, with a city skyline and tall apartment buildings on the left. The sky is blue with some clouds.

RESEARCH: PAYING FOR RESILIENCE IN NEW YORK STATE

PAYING FOR RESILIENCE IN NYS: THE REPORT

- The goal of the research to quantify the amount of money New York State will need to spend on climate adaptation
- Through public sources and submissions from New York State Adaptation Practitioners Network the research team developed an inventory of in-progress, recently completed, and scoped adaptation projects in New York State
- The research identified approximately 700 projects that are funded or need to be funded.
- Data sources include federal, state, and local plans and projects
- Only includes public sector initiatives and doesn't include costs to individuals, business, private sector

RESEARCH FINDINGS

- The research demonstrates the cumulative need for adaptation spending on public sector projects in New York State between Hurricane Sandy and 2050 will exceed \$519 billion
- Per capita cost of statewide adaptation needs is approximately \$26,000
- Per capita cost of adaptation in NYC is approximately \$50,000
- Most of New York State municipalities have not yet had capacity and funding to do climate vulnerability assessments or adaptation plans, much of those cost remains unknown
- To have a full understanding of needs, many communities need technical assistance

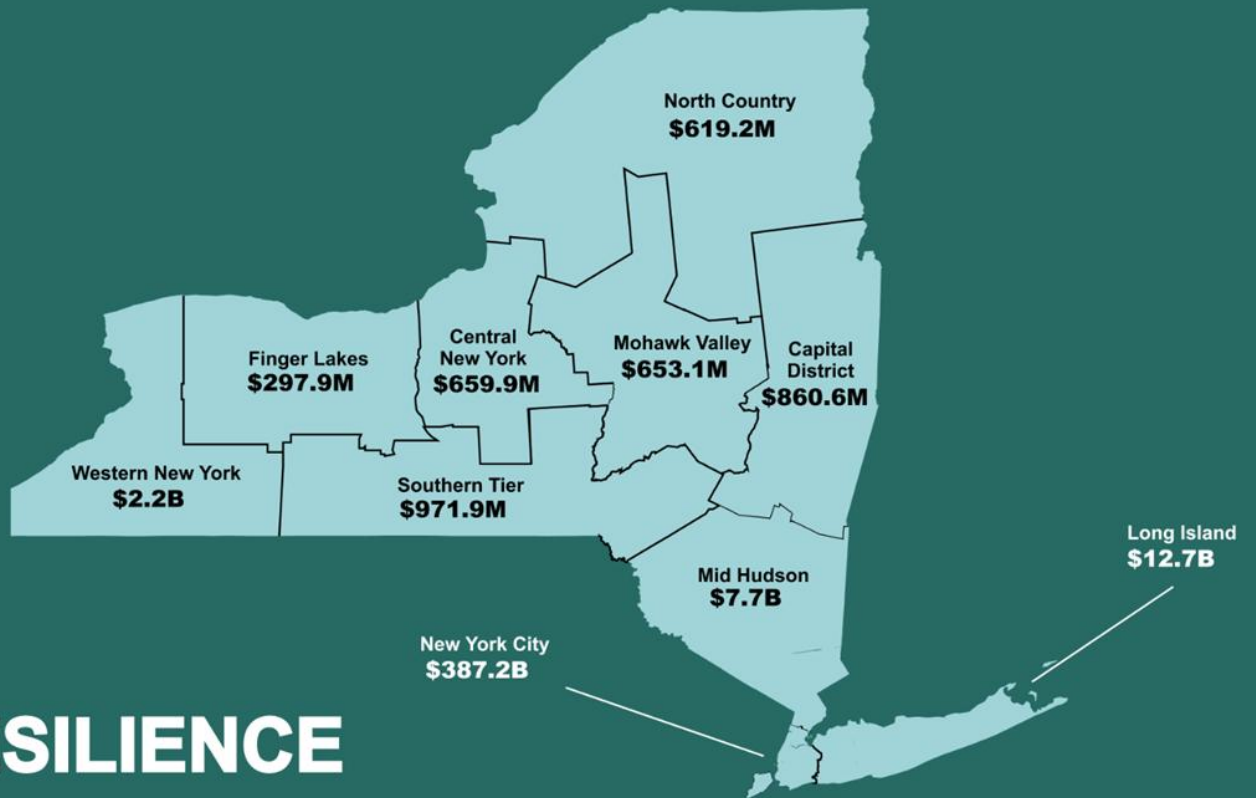
CLIMATE ADAPTATION PROJECTS ARE DEFINED AS

Projects or plans pertaining to the following:

- Storm surge/ sea level rise
- Erosion
- Grid resilience
- Stormwater + green infrastructure
- Shoreline + habitat restoration
- Disaster preparedness/ resilience hubs
- Heat mitigation
- Wind/storm damage protection
- Flood risk reduction
- Sewer upgrades
- Other weather-related hazard mitigation



REGIONAL TOTALS



PAYING FOR RESILIENCE IN NEW YORK STATE

*Other Statewide Projects
\$105.2B

EXAMPLE PROJECTS

- Long Island: Fire Island to Montauk Point Coastal Storm Risk Management Project
Cost: \$1,726,600,000
 - Reduce risks associated with coastal storms, reestablish and enhance the natural coastal processes that replenish beaches, and enhance ecological resilience
- Mohawk Valley: Utica Urban Forest Revitalization
Cost: \$2,000,000
 - Restore urban tree canopy by planting trees in parks, green spaces, and city streets and caring for existing streets
- North Country: MacDonough Park Flood Resiliency
Cost: \$1,181,812
 - Replace deteriorating portions of Saranac River retaining wall and implement flood reduction measures to protect historical structures and enhance the waterfront park

** Project examples by region are available on request

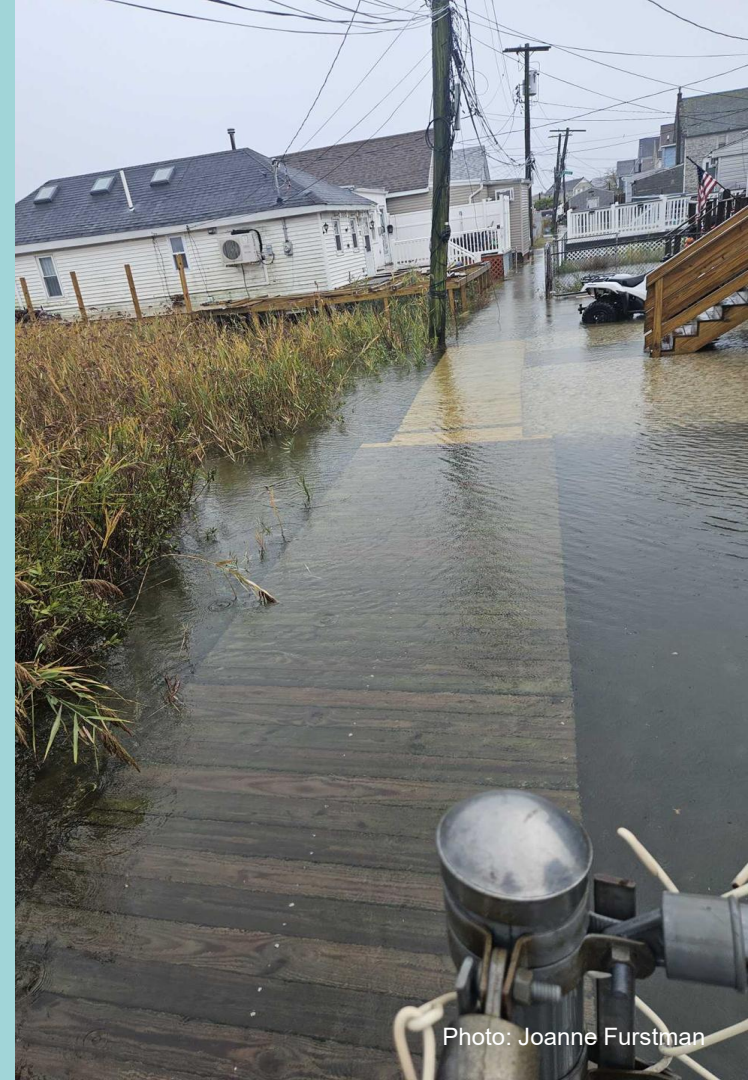


Photo: Joanne Furstman

THIS ESTIMATE IS CONSERVATIVE:

- **Not included: current or future inflation, ongoing maintenance costs necessary to keep climate infrastructure functioning effectively**
- **Emphasizes projects > \$1M, leaving many smaller cost uncounted**
- **Only includes projects that have cost estimates, many who have vulnerability assessments do not have costs**
- **The research does not quantify the long-term costs to governments of delaying resilient infrastructure upgrades and adaptation measures.**
- **Every \$1 not invested in disaster resilience today can cost communities up to \$33 in lost future economic activity, according to the U.S. Chamber of Commerce**

PAYING FOR RESILIENCE RECOMMENDATIONS:

1. Establish long term funding streams for climate adaptation
2. Expand technical assistance programs
3. Complete the Statewide Adaptation & Resilience Plan
4. Develop accessible statewide coastal, riverine, and stormwater flood data tools
5. Expand Resilient New York Streams statewide
6. Strengthen the Community Risk and Resiliency Act
7. Integrate mitigation into adaptation
8. Support research and innovation on strategies for cooling in congregate settings



CLIMATE CHANGE SUPERFUND ACT

CLIMATE CHANGE SUPERFUND ACT (2024)

- Requires large fossil fuel companies that are responsible for large amounts of greenhouse gas emissions to pay into a Climate Change Adaptation Cost Recovery Program. The Act requires responsible companies to pay \$3 billion (aggregate) annually for 25 years.
- The program ensures polluters contribute to the funding of critical infrastructure investments, such as coastal protection and flood mitigation systems, to enhance the climate resilience of communities across the state.
- The law has faced legal challenges from multiple lawsuits, an Executive Order, and proposed congressional legislation.
- Without climate superfund New York State and taxpayers will bear the brunt of these costs.



QUESTIONS?
media@rebuildbydesign.org

REGION FEATURES



LONG ISLAND

- **Fire Island to Montauk Point Coastal Storm Risk Management Project**

Nassau County

- **Reduce risks associated with coastal storms, reestablish and enhance the natural coastal processes that replenish beaches, and enhance ecological resilience**

- **Oakdale Sewer Expansion Project**

Oakdale

- **Address nitrogen pollution, improve surface and groundwater quality and support local fish, wildlife, and wetlands by reducing harmful environmental impacts of current waste collection infrastructure**

- **Saltmarsh Restoration at Sheepen Peninsula**

Brookhaven

- **Restore the saltmarsh habitat on the Sheepen Peninsula, a low-lying area increasingly vulnerable to coastal flooding and sea level rise, remove invasive species, plant native vegetation**

NEW YORK CITY

- **Big Rock Wetland Restoration Project**

Queens County

- **Regrade and stabilize to create a living shoreline to protect the coast and mitigate flooding in the local neighborhood in anticipation of sea level rise**

- **El Puente Community Change (EPCC)**

Kings County

- **Bring underrepresented residents into environmental and planning decisions through increased hiring, engagement, and integration with the new Environmental Advisory Boards**

- **FiDi-Seaport Climate Resilience Project**

Lower Manhattan

- **Protect Lower Manhattan from daily tidal flooding and coastal storms, integrate climate resilience infrastructure into the city by building new resilient maritime facilities, and enhance the public waterfront experience by creating new public open spaces and community-serving uses**

MID-HUDSON

- **Edith G. Read Wildlife Sanctuary Living Shoreline**

Rye

- **Restore the shoreline to reduce erosion and support aquatic life in Long Island Sound after erosion from Hurricane Sandy and subsequent storms**

- **Protecting Infrastructure and Restoring Fish Habitat in the Hudson River Estuary**

Ulster & Orange County

- **Remove Holden Dam on Quassaick Creek to protect infrastructure and restore two miles of critical freshwater habitat for Hudson River migratory species**

- **Combined Sewer Overflow Long-Term Control Plan: North Interceptor Sewer and High-Rate Disinfection Upgrades**

Newburgh

- **Improvements to the combined sewer overflow system to address the untreated sewage discharged into the Hudson every time it rains**

MOHAWK VALLEY

- **Utica Urban Forest Revitalization**

- Utica*

- **Restore urban tree canopy by planting trees in parks, green spaces, and city streets and caring for existing streets**

- **West Canada Creek Home Acquisitions to Support Department of State Floodplain Restoration**

- Herkimer*

- **Acquire and demolish homes in a floodplain, permanently stabilize and restore the area into a naturalized space, and protect or relocate critical utilities and infrastructure**

- **FEMA Funding to New York State for disaster relief**

- Mohawk*

- **FEMA grant administered to fund emergency electric power as a result of severe Storms and flooding**

CENTRAL NEW YORK

- **Skaneateles Lake Harmful Algal Blooms**

Syracuse

- **Clean algae blooms to remove toxins from drinking water and improve public health**

- **Construct District Geoexchange Well Field System for Geothermal Network at SUNY Oswego**

Oswego

- **Geothermal exchange system supports reduced energy consumption and operating costs for HVAC while minimizing environmental impact**

- **The Coastal Lakeshore Economy and Resiliency (CLEAR) Initiative**

Town of Sandy Creek, Town of Richland, Town of Mexico, Town of New Haven, City of Oswego, Town of Oswego, Town of Scriba, Town of Sterling, Village of Fair Haven

- **Build adaptation capacity to extreme water level variability along Lake Ontario, the lower Niagara River and the St. Lawrence River to address community vulnerability and exposure to changes in lake levels**

SOUTHERN TIER

- **Building Resilient Watersheds: Grazing, Flood Mitigation and Water Quality in Tioga County**

Tioga

- Construct stormwater retention basins to mitigate flood impacts, reduce peak stream flows, and prevent erosion, establish a forest buffer along streams and wetland area, and implement rotational grazing system

- **Vestal Water Supply Well 1-1 Superfund Site Remediation**

Vestal

- Long-term cleanup of a hazardous waste at a Superfund Site (Vestal Water Supply Well 1-1) to protect the public health

- **Using nature-based solutions to improve passage for aquatic organisms in the Upper Delaware River watershed**

Hancock, Deposit, Roxbury, & Colchester

- Nature-based solutions to restore fish and wildlife habitat and support community vitality in the watershed

WESTERN NEW YORK

- **Residential Property Flood Mitigation**

Cattaraugus County

- **Conduct outreach to flood-prone property owners, provide information regarding mitigation alternatives, develop FEMA grant application to obtain funding to implement acquisition/ purchase/ moving/ elevating residential homes in the flood prone areas**

- **Community-Driven Restoration Priorities and Meaningful Engagement in Scajaquada Creek**

Buffalo

- **Restore habitat in the highly impaired Scajaquada Creek watershed, build a coalition to engage community members, conduct stakeholder outreach to inform the creation of a restoration and resilience plan, and advance efforts to restore habitat along the creek**

- **Flood Warning System**

Gowanda Village

- **Evaluate areas that need a flood warning system constructed and construct the system where necessary**

FINGER LAKES

- **Bridge NY Funding to Rehabilitate and Replace Local Bridges and Culverts**

Genesee County

- **Rehabilitate and replace bridges and culverts to reduce flood risk, improve the resiliency of structures, facilitate regional economic competitiveness, and prioritize projects that benefit environmental justice communities**

- **Tonawanda WMA and Iroquois NWR Wetland Restoration**

Genesee County

- **Wetland restoration to improve habitat quality for waterfowl, mitigate flood impacts, and protect water quality**

- **Mitigation of vulnerable structures**

Livingston County

- **Support the mitigation of vulnerable structures via retrofit or acquisition/relocation to protect from future damage; repetitive loss and severe repetitive loss properties prioritized**

CAPITAL DISTRICT

- **Working the Plan: Implementing Block Pruning to Maintain and Preserve Albany's Street Trees**

Albany

- **City-wide tree pruning - Maintain street trees that provide essential benefits (lowering temperatures, reducing air pollution and intercepting particulate matter, intercepting rain, absorbing stormwater, and reducing noise and light pollution)**

- **ALL(bany) Together – Climate and Health Resilience Equity Project**

Albany - Trinity Alliance of the Capital Region & Partners

- **Resilience hubs and tree planting for emergency preparedness, community engagement, collaborative governance, green infrastructure**

- **Albany County Climate Resiliency Plan**

Albany County Executive's Office

- **Climate adaptation and resilience plan for hardening infrastructure, measures for addressing extreme heat and flooding, and increasing green infrastructure**

NORTH COUNTRY

- **MacDonough Park Flood Resiliency**

Plattsburgh

- **Replace deteriorating portions of the Saranac River retaining wall, implement flood reduction measures to increase resiliency, protect historical structures, and enhance enjoyment of the waterfront park**

- **Stormwater Detention and Green Infrastructure Improvements**

Potsdam

- **Construct wet extended detention ponds to reduce flooding within the Village and improve the water quality of the Raquette River**

- **Disaster Relief Center**

Gouverneur

- **Construct a new disaster relief center facility attached to the community center to provide emergency shelter for residents**

An aerial photograph of a waterfront park in New York City. In the foreground, there's a modern park with green grass, winding paths, and a curved concrete structure. To the left, a multi-lane road with cars and a yellow taxi is visible. In the background, a large suspension bridge (the Manhattan Bridge) spans the water, with the city skyline visible in the distance. A semi-transparent teal box with white text is centered over the image.

PAYING FOR RESILIENCE IN NYS: METHODS

METHODS

Cost estimation methods

- When cost estimates were listed as a range, we used the high end of range
 - This is given inflation, rising constructions costs, and volatile global trade conditions
 - ex) 4,000,00 - 10,000, 000  \$10,000,000
 - When estimate was listed as greater or less than x, we used base number of x.
 - ex) $x > 5$ million  \$ 5 million
- We collected both funded and unfunded projects because they capture spending needed on climate adaptation
- We analyzed over 700 plans including hazard mitigation plans, resilience plans, flood mitigation plans

METHODS CONTINUED

- The list includes projects funded and scoped for federal, state, and local sources
- The total captured cost is for the public sector and doesn't include costs to individuals, business, private sector
- Mitigation projects were captured when it overlaps with adaptation
Example: Weatherization of energy infrastructure