



From Vulnerability to Action: Collaborative Strategies for Resilience

Blending Vulnerability Mapping and Community Input Across
11 New Jersey Municipalities

March 9, 2026

Agenda

Welcome and Introductions



Policy Context



Project Overview and Components



Resilient NJ and Conclusion



About Us



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ENV SP



Ian Abrahamsen,
PE

About You

a. What sector do you work in?

1. Public
2. Private for-profit
3. Private non-profit

b. How familiar are you with Burlington County?

1. Very – I live / work there
2. Somewhat – I visit there
3. Not at all

c. How familiar are you with New Jersey's CCRHVA process?

1. Not familiar - what is that?
2. Somewhat familiar – I've seen one
3. Very familiar – I've worked on one



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6204 9685

Policy Context

Municipal Land Use Law

New Jersey's Municipal Land Use Law (MLUL)

New Jersey municipalities are **required** to incorporate a climate change-related hazard vulnerability assessment (CCRHVA) into any Land Use Plan Element update.

40:55D-28 Preparation; contents; modification.

(h) including, for any land use plan element adopted after the effective date of P.L.2021, c.6, a **climate change-related hazard vulnerability assessment [...]**

Climate Change-Related Hazard Vulnerability Assessment Deliverables



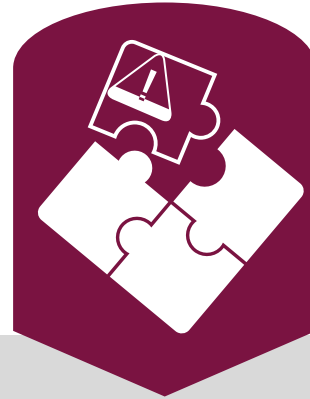
Analyze vulnerabilities associated with climate change



Identify assets necessary for operational state during a natural disaster



Include a build-out analysis and assess vulnerabilities



Provide strategies and design standards to reduce vulnerabilities

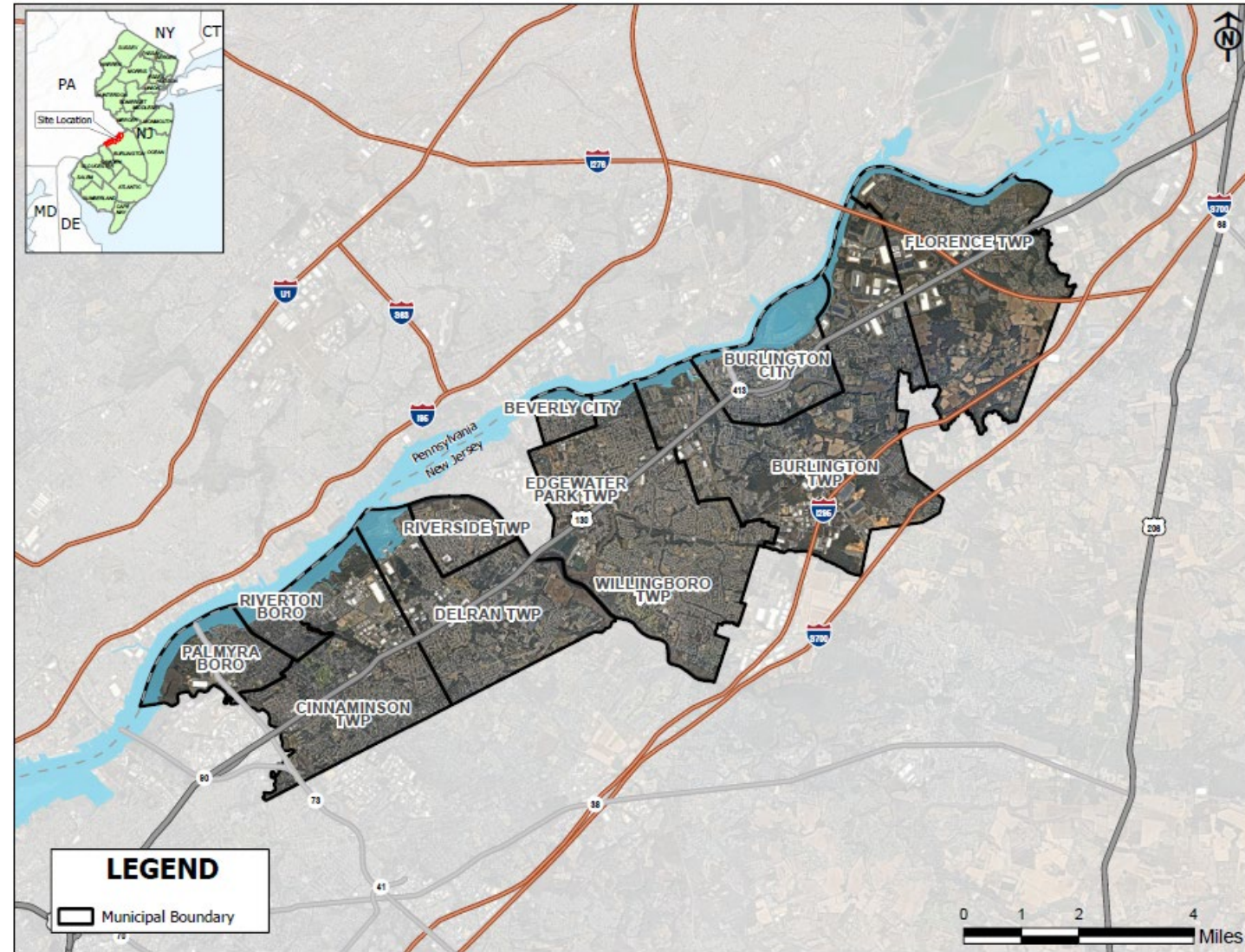


Include policy statement on the consistency of the CCRHVA with existing plans

Project Overview and Components

Where is this work concentrated?

- Beverly City
- Burlington City
- Burlington Township
- Cinnaminson Township
- Delran Township
- Edgewater Park Township
- Florence Township
- Palmyra Borough
- Riverton Borough
- Riverside Township
- Willingboro Township



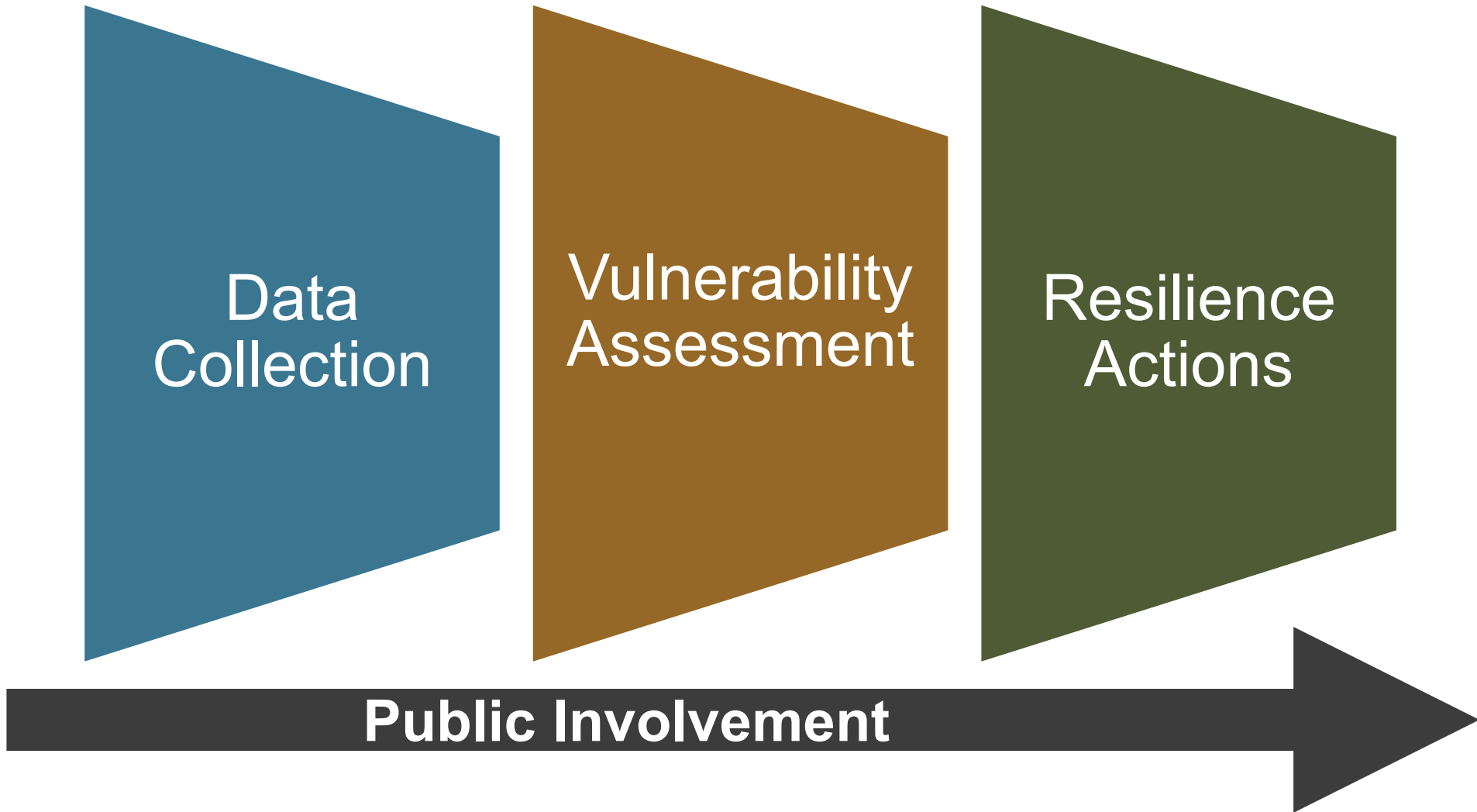
About the Route 130 Corridor

- Includes historic downtowns, suburbs, and rural areas
- Many communities are along the Delaware River
- The area has experienced increased temperatures, severe storms, extreme weather, and flooding



Burlington City downtown, image from Wikipedia. The Delaware River, image from Burlington County. Burlington County trails, image from Burlington County.

Key Project Components



Public Involvement

Public Involvement

SEPTEMBER 2023 TO JUNE 2025



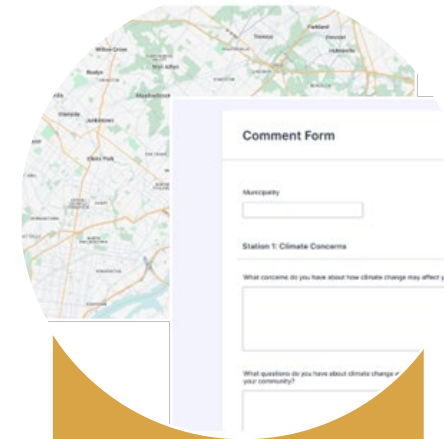
Project
Launch
09/22/2023



Elected
Official Virtual
Briefing
02/19/2025



In-person
community
meetings
04/10/2025
04/22/2025
04/24/2025



Online Map &
Comment
Form
05/22/2025 –
06/30/2025



Edgewater
Park's
Heritage Day
06/14/2025

Public Involvement

JUNE 2025 TO OCTOBER 2025



June Municipal
Officials Meetings
06/17/2025
06/18/2025
06/19/2025



July Municipal
Officials Meetings
07/16/2025
07/17/2025
07/21/2025



July Public
Meeting
07/30/2025



October Municipal
Officials Meetings
10/27/2025 –
10/31/2025

Public Involvement Results

- 86 people attended the in-person and virtual stakeholder meetings
- 123 additional online inputs from the online map and online comment form

What does resilience mean to you?

Building, creating, and updating infrastructure to support future climate hazards.

It means having the ability to continue to operate as intended during and after a severe natural or man-made event, which results in the loss of life and/or property.

Flooding and sea level rise threatening critical infrastructure are most important to me.

I'm surprised that drought wasn't rated as a higher threat.

[Landslide] was surprising in Burlington. Flooding and sea level rise was always the elephant in the room.



Public Involvement Key Takeaways

- Grouping municipalities together in elected official meetings helped **bring forward common challenges** and **share paths to address these issues.**
- Having a **range of ways** for the public to be involved facilitated and increased involvement.

Public Meeting Flyer translated into Spanish.



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Evaluación de la Vulnerabilidad a los Riesgos Relacionados con el Cambio Climático

TALLER PÚBLICO



**10 de abril de 2025
5:15 – 6:45 PM**

Edificio municipal de Burlington Township
Sala comunitaria, planta baja
851 Old York Road
Burlington Township, NJ 08016

Damos la bienvenida a los residentes de la **ciudad de Burlington, Burlington Township, y Florence**



<https://bit.ly/ccrhva3>

**22 de abril de 2025
6:00 – 7:30 PM**

Centro Kennedy Salón para eventos
429 John F. Kennedy Way
Willingboro, NJ 08046

Damos la bienvenida a los residentes de **Beverly, Edgewater Park, Willingboro**



<https://bit.ly/ccrhva2>

**24 de abril de 2025
6:30 – 8:00 PM**

Edificio Municipal del Municipio de Delran Sala Comunitaria
900 Chester Avenue
Delran, NJ 08075

Damos la bienvenida a los residentes de **Palmyra, Riverton, Cinnaminson, Delran, Riverside**



<https://bit.ly/ccrhva1>

Si tiene preguntas, envíe un correo electrónico a SMargolis@Dewberry.com

Vulnerability Assessment

Vulnerability Assessment

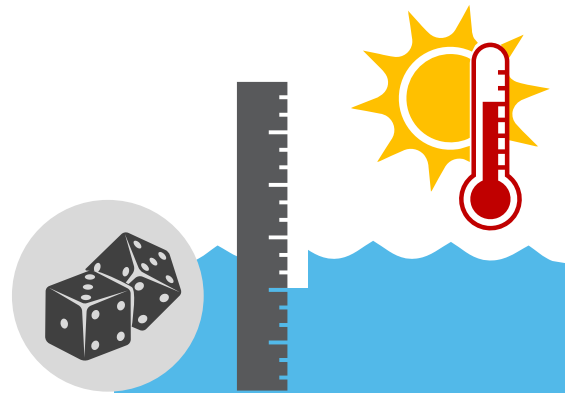
Vulnerability

The extent to which assets are prone to or adversely affected by hazards. Components include exposure, sensitivity, and adaptive capacity.

For each hazard, the **vulnerability assessment** considered:



Where and what kind of **assets** are present



The likelihood or severity of the **hazard**



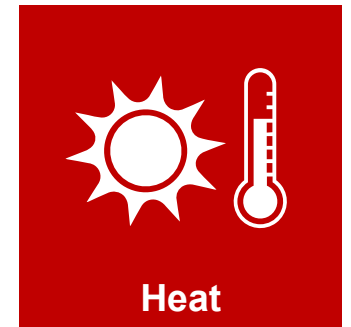
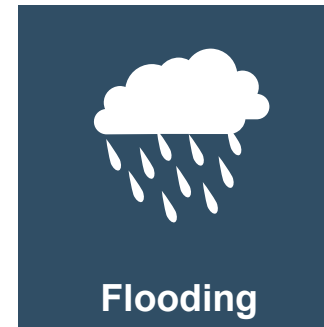
The **sensitivity** of an asset to the hazard

Vulnerability Assessment Process



1 Identify Current and Future Hazards

- Hazards analyzed based on available mapped data
 - Future projections where available
 - Other hazards analyzed qualitatively
- Mapped to show **exposure**
 - Translated into score values



2 Asset Types and Themes

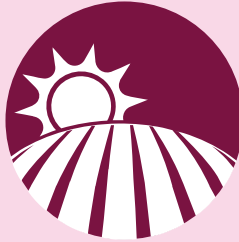
Community Resources



Residential Buildings



Public and Commercial Buildings



Agricultural Lands

Natural Infrastructure



Wetlands



Forests and Shrubland



Wildlife Habitat Areas

Critical Infrastructure



Transportation Routes



Utility Infrastructure



Health and Emergency Services



Hazardous Material Sites

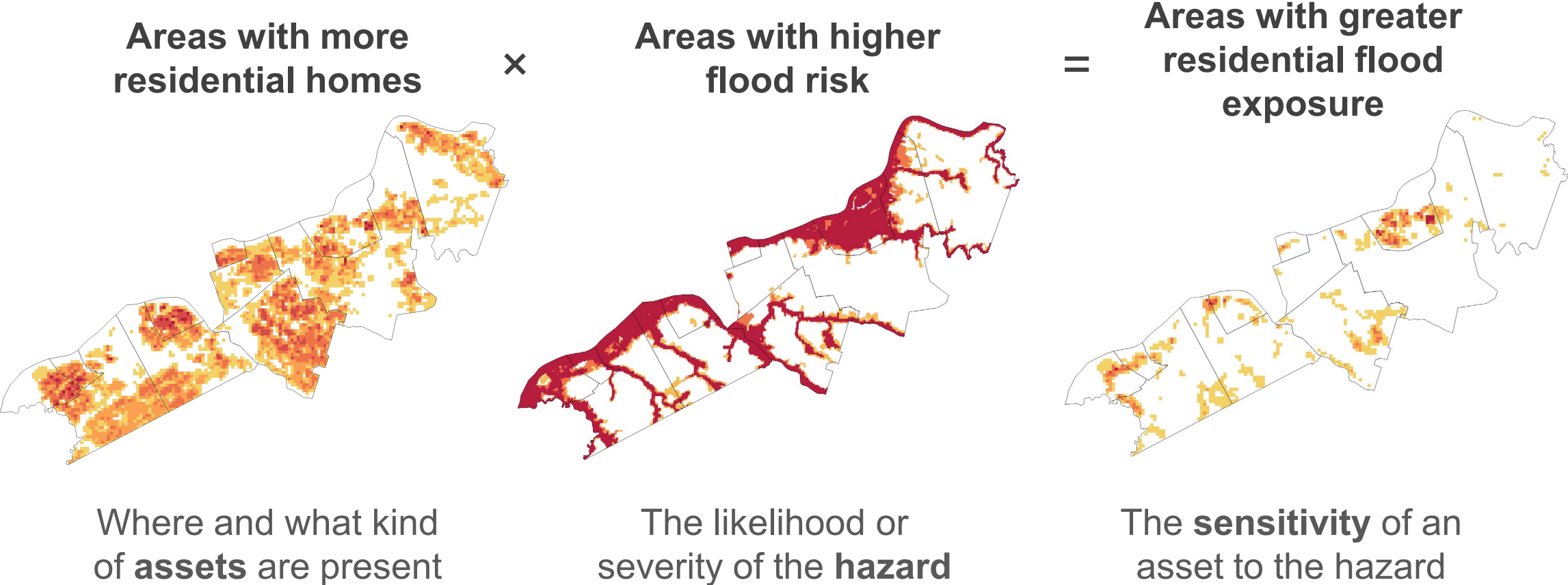
Social Fabric



Socially Vulnerable Populations

3 Asset Exposure and Risk

For example, looking at the intersection of residential homes and flooding:



3

Sensitivity

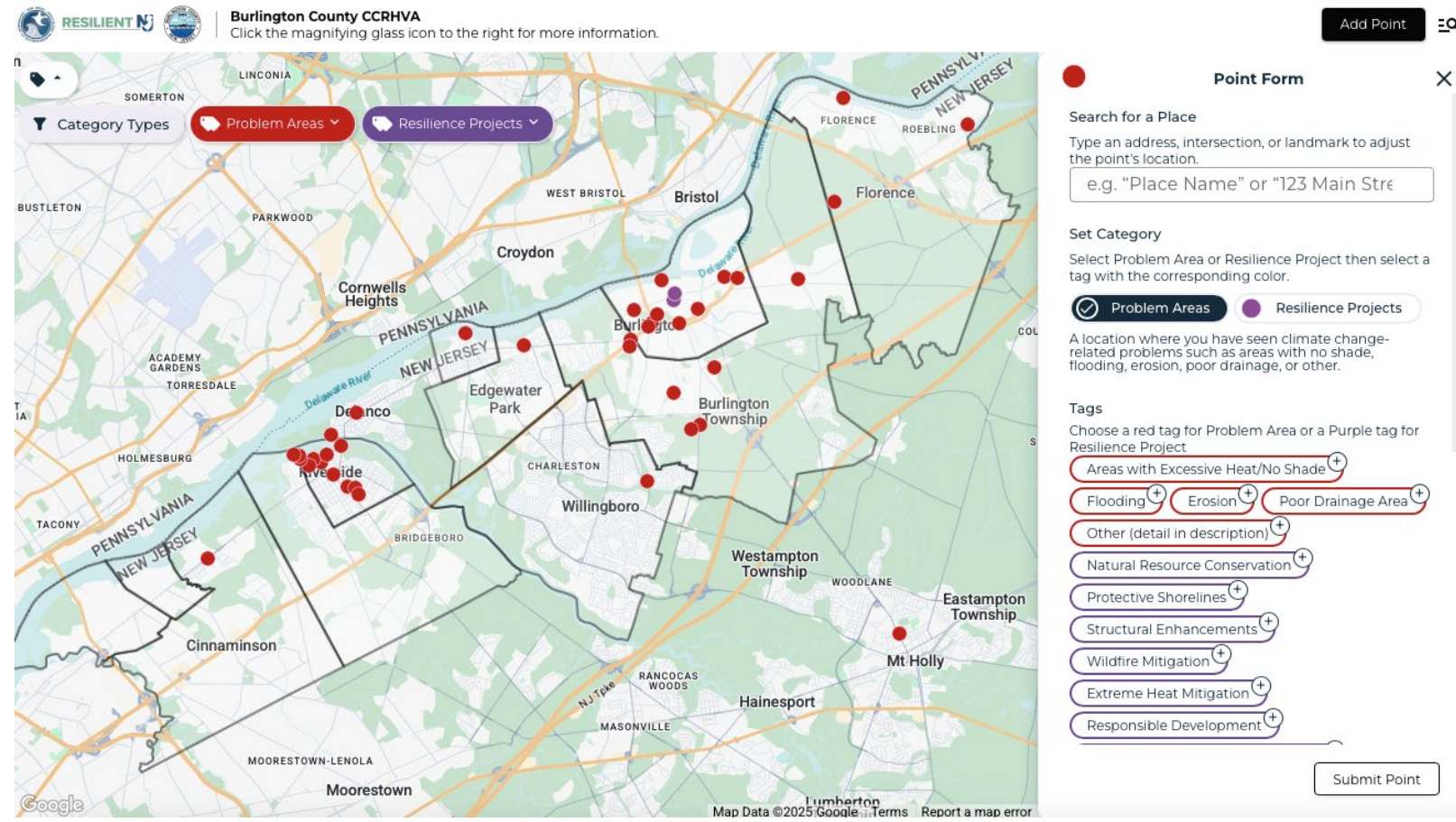
- Weighted scoring of asset types to characterize response to each hazard

	Flooding	Sea Level Rise	Increased Temperatures	Wildfire	Mudslides & Landslides	Drought
Community Resources						
Residential Buildings	3	3	2	3	3	1
Public and Commercial Buildings	3	3	1	3	3	1
Agricultural Lands	3	3	1	3	2	3
Natural Infrastructure						
Wetlands	1	3	2	2	1	1
Forests and Shrubland	1	3	1	3	1	1
Wildlife Habitat Areas	1	3	1	3	1	1
Critical Infrastructure						
Transportation Routes	3	3	2	2	3	1
Utility Infrastructure	2	3	1	3	3	2
Health and Emergency Services	2	3	1	3	3	1
Hazardous Material Sites	2	3	1	3	3	1
Social Fabric						
Residential Populations	3	3	3	3	3	1

EXAMPLE

4 Asset Exposure and Risk

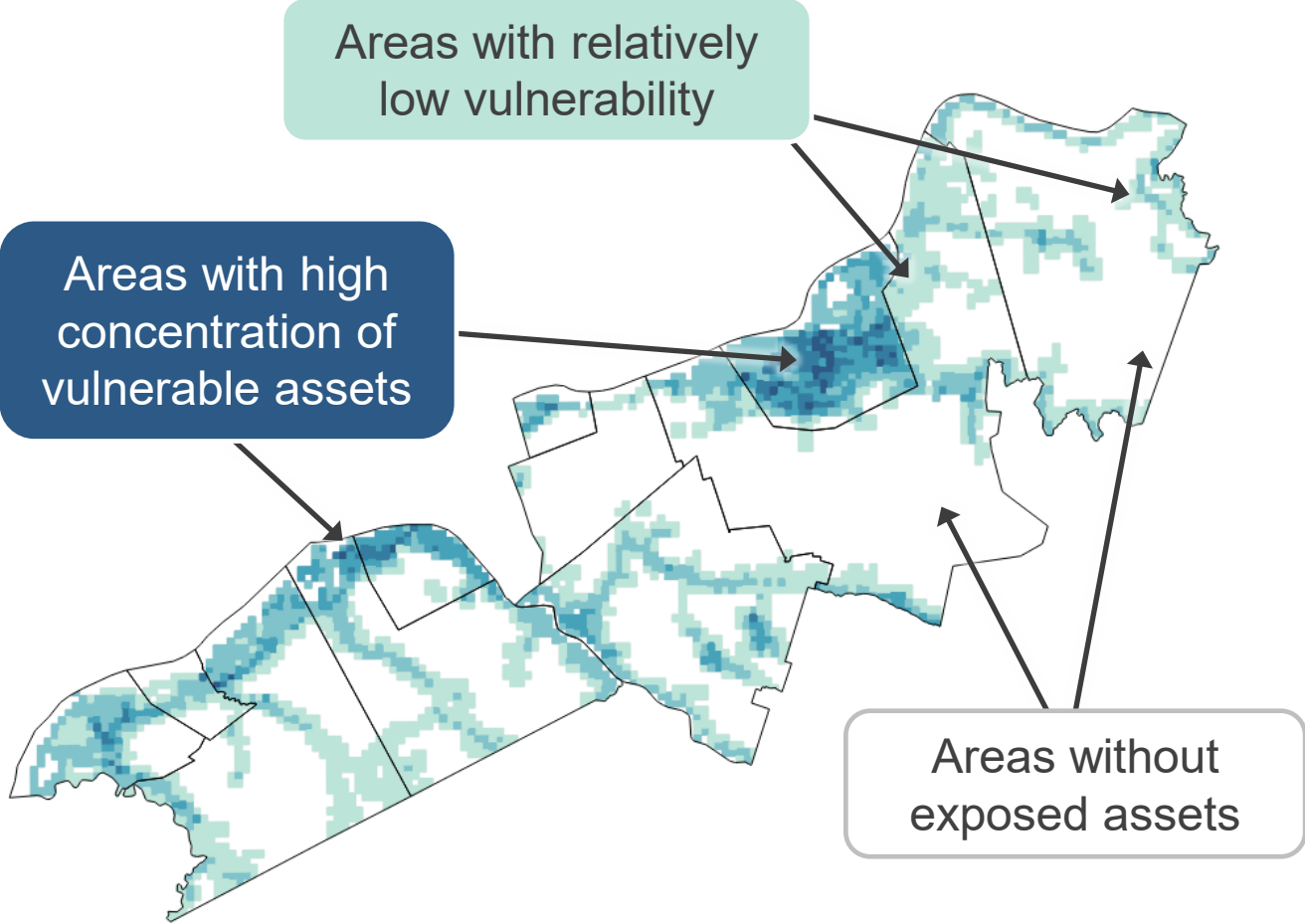
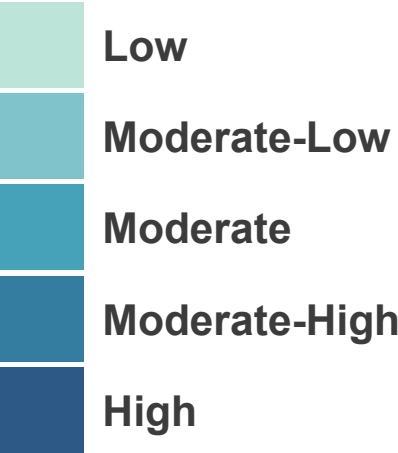
- Hotspot identification
- Supplemented with community feedback



SHOWN TO THE ABOVE: Online map for community comments.

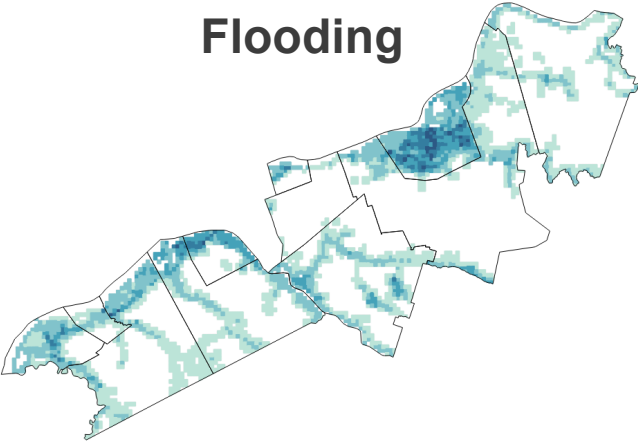
Vulnerability Scoring and Mapping

Maps show a five-part scale based on the severity and likelihood of the hazard and potential for impacts to key resources

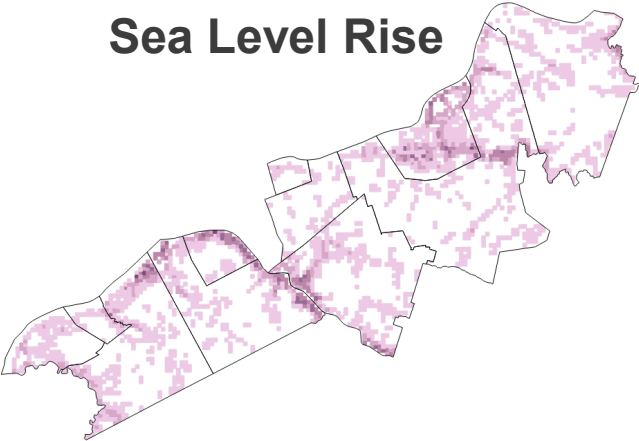


Vulnerability by Hazard Results

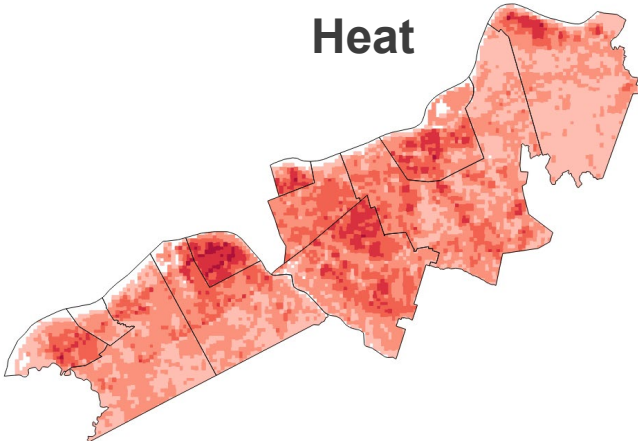
Flooding



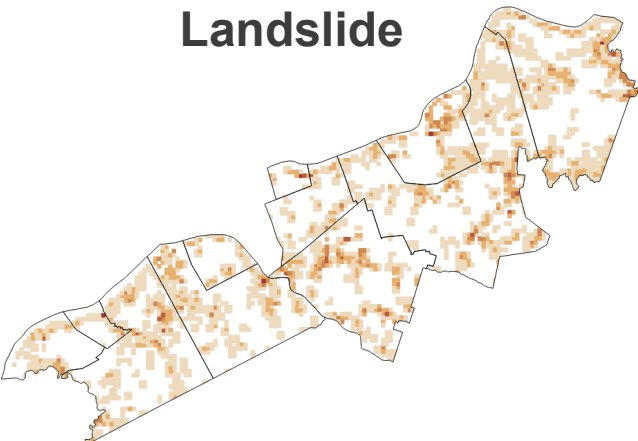
Sea Level Rise



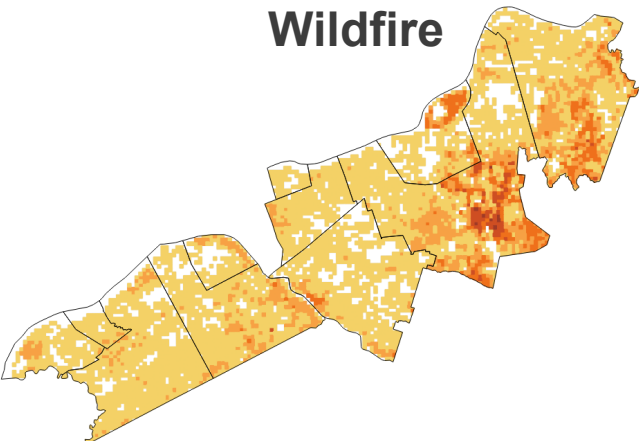
Heat



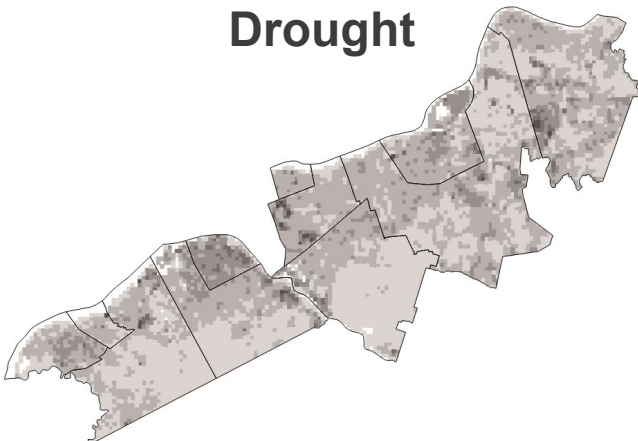
Landslide



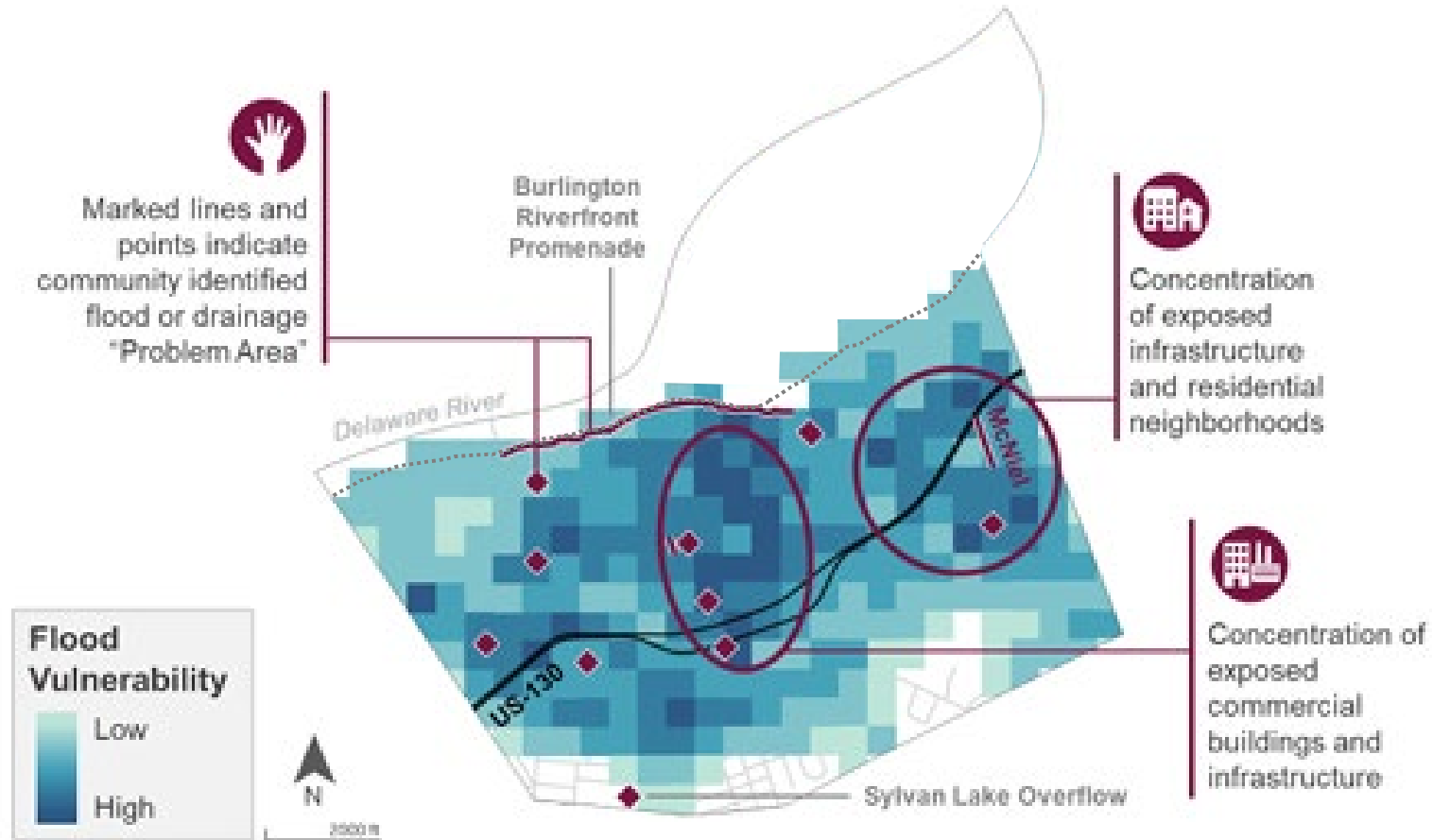
Wildfire



Drought

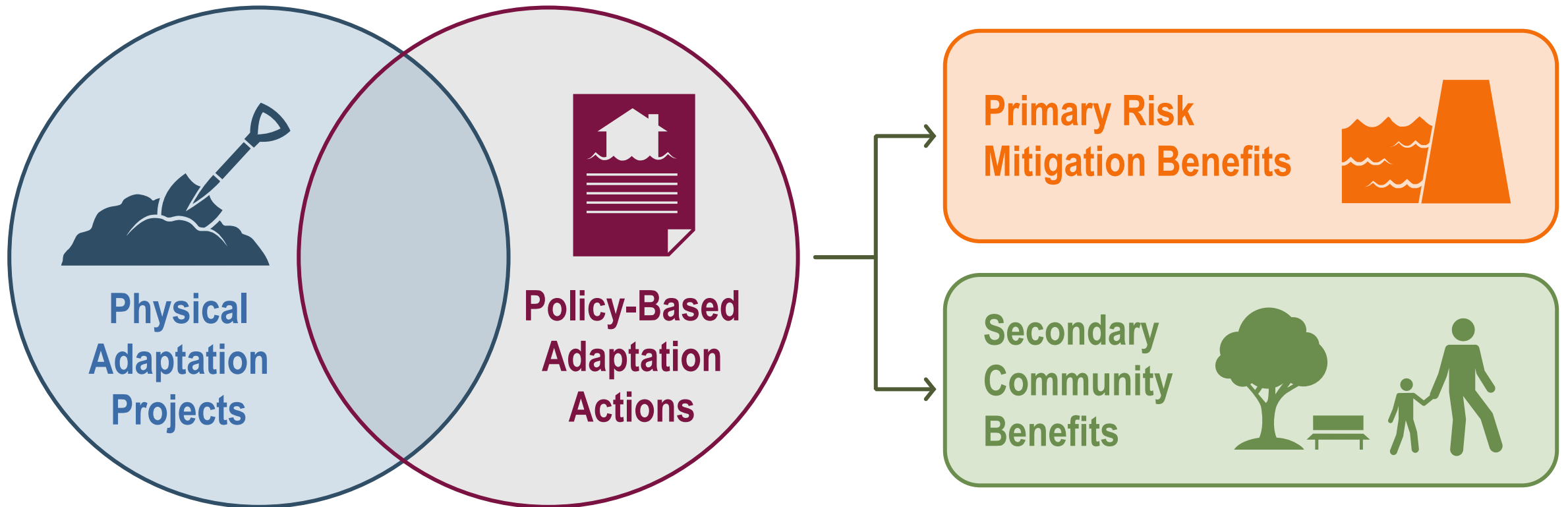


Example Vulnerability Assessment Results



Resilience Actions

Resilience Actions





Action Examples

PHYSICAL ADAPTATION PROJECTS



Floodwalls & Breakwaters



Living Shorelines



Wetland Restoration



Deployable Floodgates



Elevated Homes



Splash Parks & Cooling Centers



Bioswales & Rain Gardens



Wet or Dry Floodproofing



Elevated Roadways



Drainage Improvements



Infrastructure Hardening

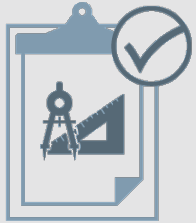


Controlled Burning



Action Examples

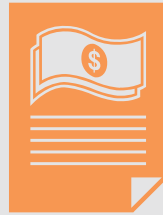
POLICY & PLANNING ADAPTATION ACTIONS



Resilient Design Standards



Restricted Development



Bond or Tax to Fund Adaptation



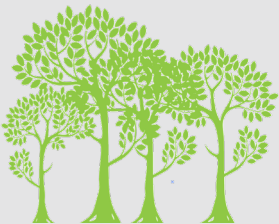
Direct Financial Support Programs



Voluntary Buyout Programs



Insurance Expansion



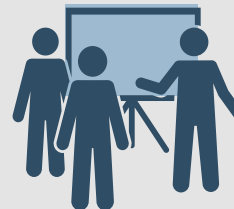
Tree Canopy Expansion



Cooling Center Network



Emergency Response Planning



Community Education



Evacuation Planning



Strategic Growth Areas

Resilience Actions Results

Developed four regional actions:

- *More Frequent Road Maintenance to Respond to Climate Change Impacts*
- *Expansion of NJDEP's Blue Acres Program*
- *Stream Cleaning, Bank Stabilization, and Channel Restoration*
- *Coordinated Response to Widespread Power Outages*

And almost 60 individual actions

Municipal Resilience Actions



Sewage Treatment Facility Improvements – Beverly City

Drainage Improvements – Edgewater Park

Riverbank Stabilization – Delran Township

Erosion Control Policy – Florence Township



State Support

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RESILIENCE PLANNING PROGRAM



Launched in 2020

Goal: **Produce community-led resilience & adaptation action plans**

Ongoing initiatives:

- **Regional Planning Program**
- **Municipal Assistance Program**
- **Local Planning Guidance**
 - **Online toolkit** for municipalities to conduct resilience planning on their own
 - **Funding directory** for municipalities to research a variety of grant opportunities related to climate resilience activities.



Providing Science and Data



Supporting Engagement



Assessing Vulnerability



Identifying Solutions

Planning process:



RESILIENCE PLANNING PROGRAM GOALS & OBJECTIVES

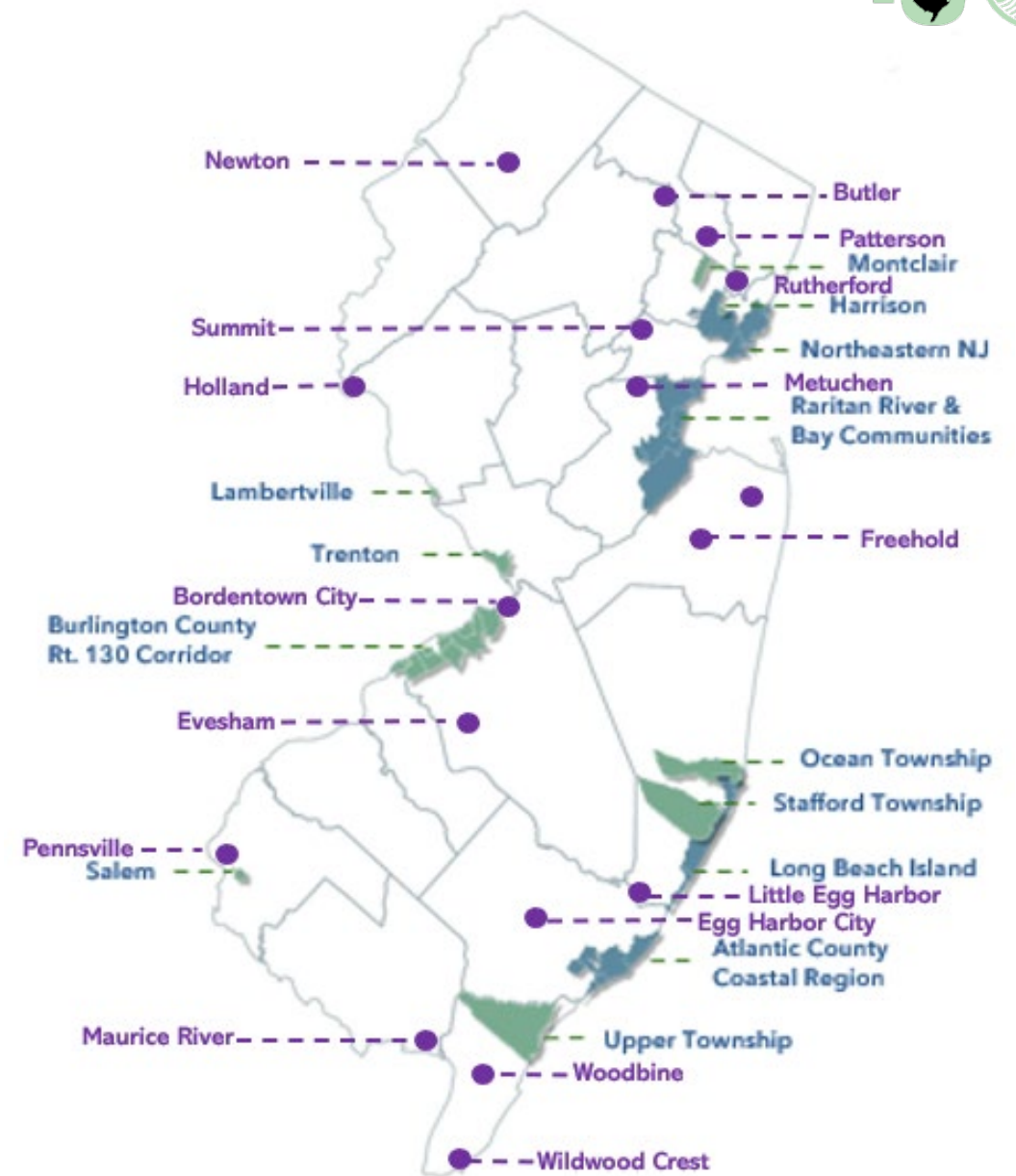
- Enhance the community's understanding of climate change impacts
- Identify and address gaps in resilience planning
- Effectuate robust community outreach and engagement, and collaboration among a wide variety of stakeholders;
- Reach underserved populations and ensure representation and participation from socially vulnerable populations and overburdened communities
- Develop innovative strategies, design standards, and solutions to climate change that reduce risk and increase the community's overall resilience
- Enhance the value and integrity of ecological, economic, recreational, and natural resources through the prioritization of nature-based solutions and green infrastructure;
- Support development of regional and municipal resilience action plans to further resilience efforts, build capacity, and increase possible funding opportunities; and
- Assist municipalities in developing a climate change-related hazard vulnerability assessment (CCRHVA) that meets the requirements of the Municipal Land Use Law (MLUL).

OVERVIEW

Goal: To support communities in developing and implementing community-led, risk-informed resilience action plans

Ongoing initiatives:

- **Regional Planning Program** in 4 regions; now in implementation phase
 - *Additional regions planned for 2026*
- **Municipal Assistance Program** in 19 municipalities
 - *TCNJ/RU CCRHVA assistance*
- **Online toolkit** for municipalities to conduct resilience planning on their own
- **Funding directory** for identifying resilience project funding



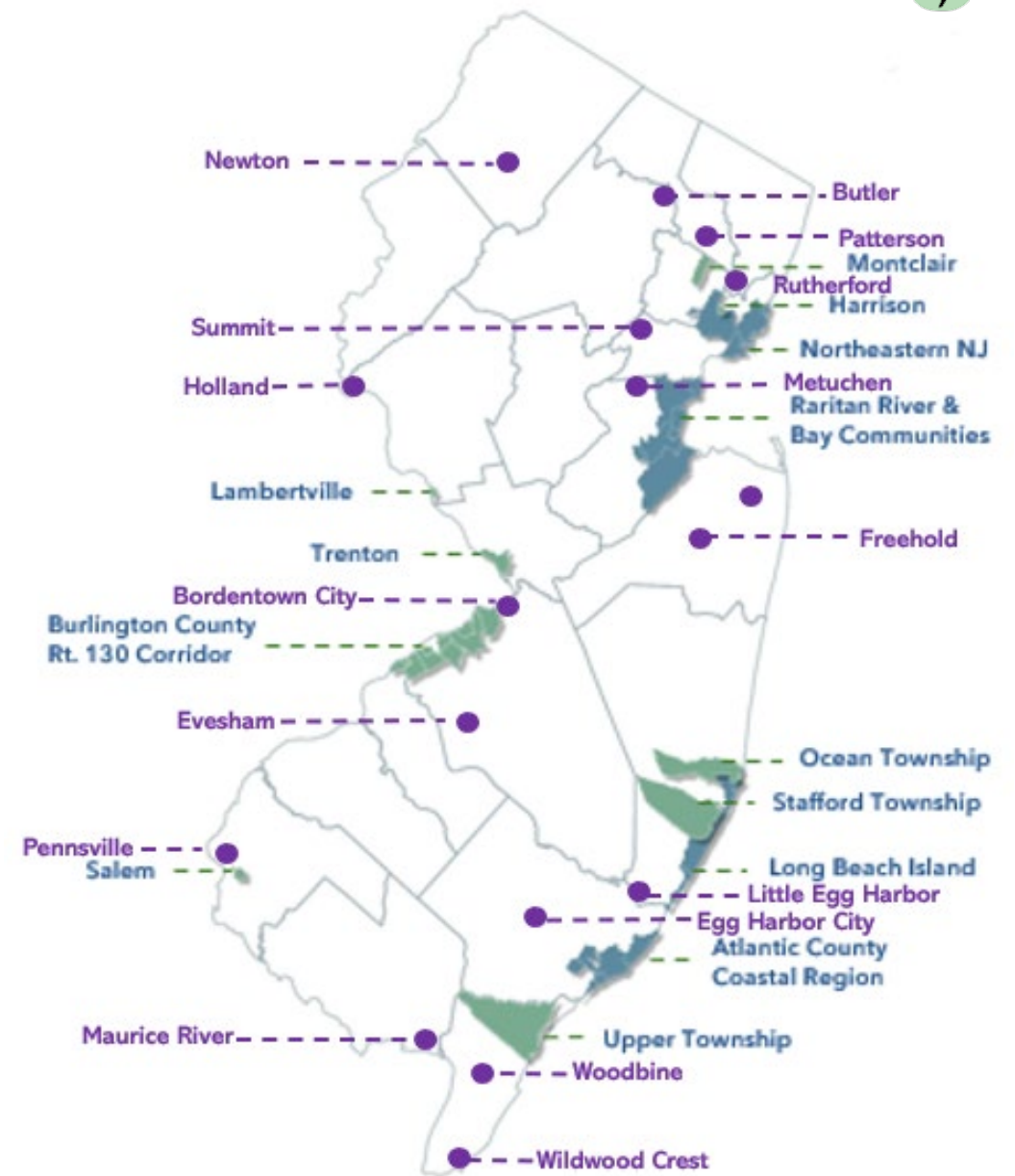
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PLANNING SCOPE OF WORK

The process to develop a resilience action plan involves the following:

- Use **community engagement and outreach** to establish a vision and plan for each municipality;
- **Examine of current local conditions** through researching and review of data, reports, plans, and other information that have shaped a community's character;
- **Perform assessments** to understand the *current and future* local impacts of climate change;
- **Identify and prioritize** of innovative strategies, design standards, and other resilience actions that address and/or minimize the impacts of climate change and other natural hazards; and
- **Implement resilience actions** and planning-related activities, including but not limited to grant applications, additional assessments and plans, and outreach campaigns.

<http://resilient.nj.gov/>



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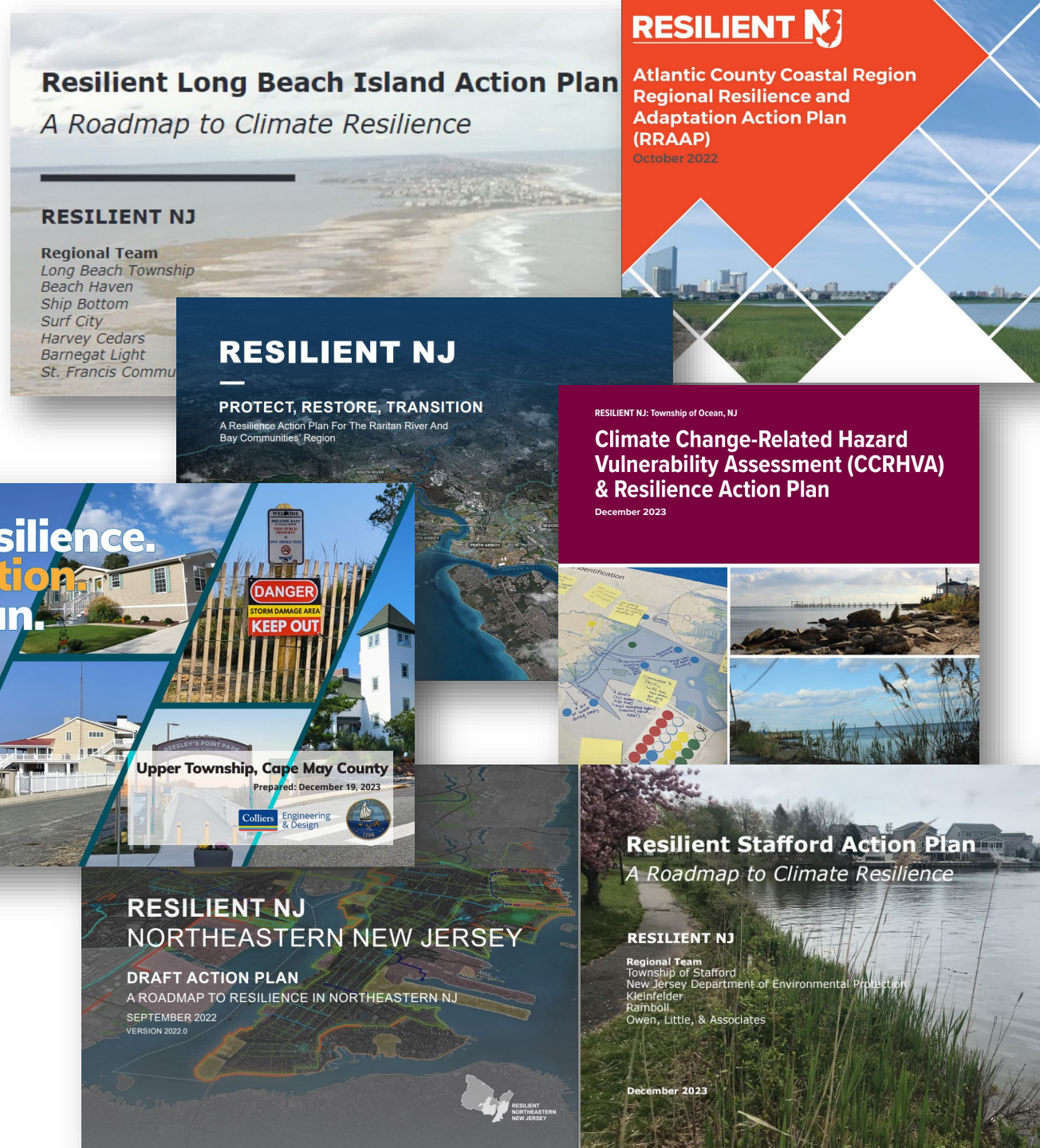
RESILIENCE ACTION PLANS

Recommend policy, projects, and programs that:

- Reduce the risk of flooding and other climate hazards
- Achieve regional resilience for the future

Action types:

- **Physical**
 - Stormwater management projects
 - Capital improvement projects
 - Brownfield remediation
- **Policy**
 - Permitting requirements
 - Resilience standards for redevelopment
 - Zoning & land use changes
- **Social**
 - Risk communications campaign
 - Resilience "hub" for accessible information & resources



RESILIENT

RESILIENCE ACTION PLANS

Action Plans recommend policy, projects, and programs that:

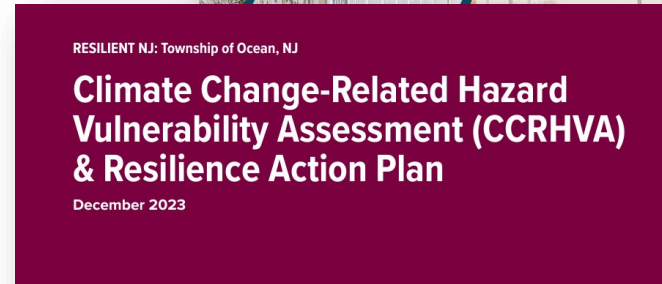
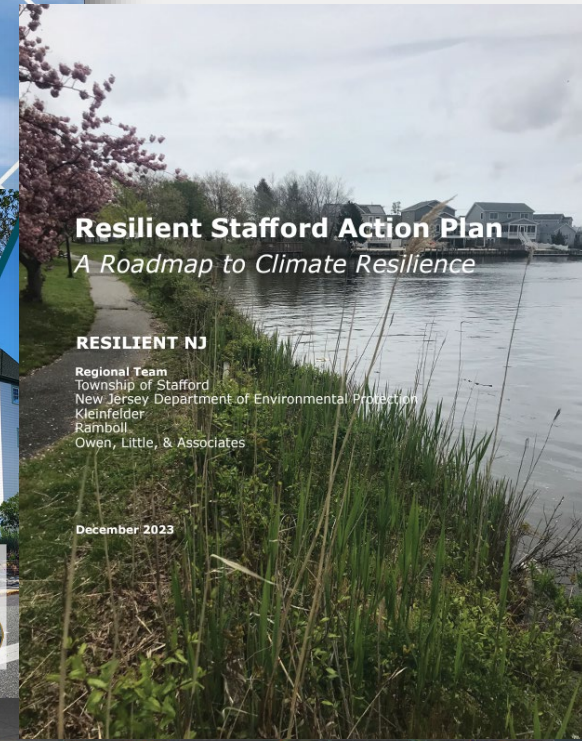
- **Reduce the risk of flooding and other climate hazards**
- **Achieve regional resilience for the future**

Actions cover a broad definition of resilience and can include:

- **Physical construction projects that use green and gray infrastructure**
- **Policy changes**
- **Social programs**

Planning work through Resilient NJ has led to federal investment for implementation:

- **FEMA BRIC: \$21M+**
- **NFWF NCRF: \$2.6M+**



NEW JERSEY'S RESILIENCE SUCCESS STORIES



Communities participating in **Resilient NJ** have benefitted from over **\$25 million** to implement projects identified in their Resilience Action Plans.

NFWF National Coastal Resilience Fund
FEMA BRIC
American Rescue Plan
DCA Resilient Communities Program; funded through HUD CDBG-DR



The success of the Coastal Management Program and its partners led to a **\$72.4 million** award for ***Building a Climate Ready NJ.***

NOAA Climate Resilience Regional Challenge; one-time funding opportunity via the Inflation Reduction Act



The **Blue Acres** program has successfully obtained **\$103 million** since 2021 for buyouts of floodprone homes.

FEMA Hazard Mitigation Grant Program
FEMA Flood Mitigation Assistance & FMA Swift Current
HUD CDBG-DR



New Jersey has been awarded **\$2.9 million** to implement resilience projects at and near **military installations**, such as firebreaks and living shorelines.

DoD Readiness & Environmental Protection Initiative (REPI)

Additional Components

To further connect near-term land use decisions with existing climate change-related vulnerability, the CCRHVA also includes:

- a **build-out analysis**,
- **policy statement**,
- examines the municipalities' **Round 4 affordable housing commitment**, and
- looks at key **redevelopment areas** in each municipality.

Conclusion

From Strategy to Implementation

- **The final CCRHVA will be available to the public in Spring 2026.**
- CCRHVAs set up municipalities to invest and act on resilience strategies.
- NJDEP may provide funds for further implementation of resilience actions.



Contact Us

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Questions?

Thank you!