

New Jersey's Climate Change Resilience Strategy

22nd Annual New Jersey
Department of Transportation
Research Showcase Web Event

*Dave Rosenblatt,
Chief Resilience Officer*
October 29, 2020



State of New Jersey
Department of Environmental Protection

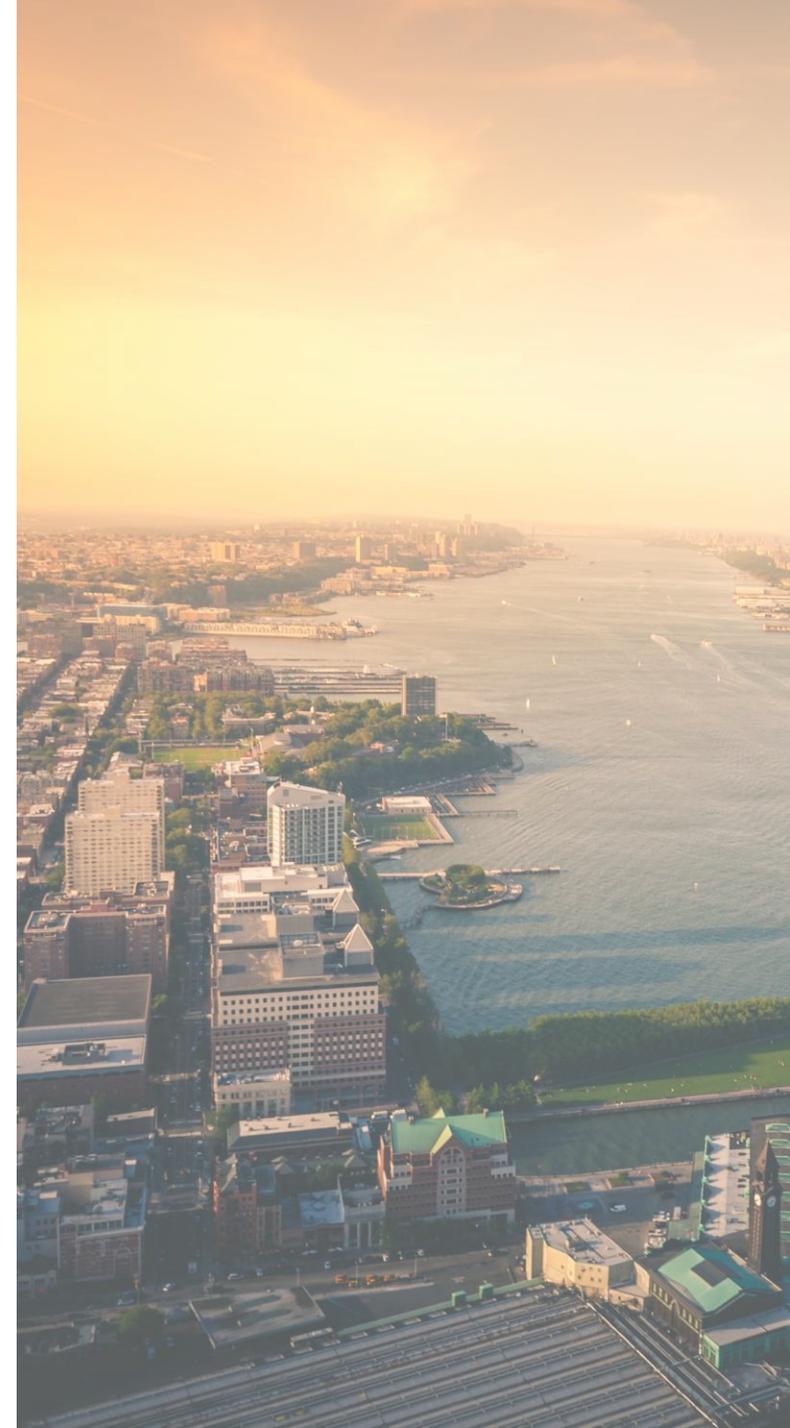


WELCOME!



Dave Rosenblatt

Chief Resilience Officer
Assistant Commissioner, Climate & Flood Resilience





Reducing and Responding to Climate Change in New Jersey: Initiatives Underway at NJ DEP



An Overview of State Coastal Zone Management Policies Designed to Promote Coastal Resilience

March 2019

*Prepared for the New Jersey Coastal
Management Program*

*The Environmental Analysis &
Communications Group, Bloustein
School of Planning and Public Policy and
The Rutgers Climate Institute*

*Rutgers, The State University of New
Jersey*



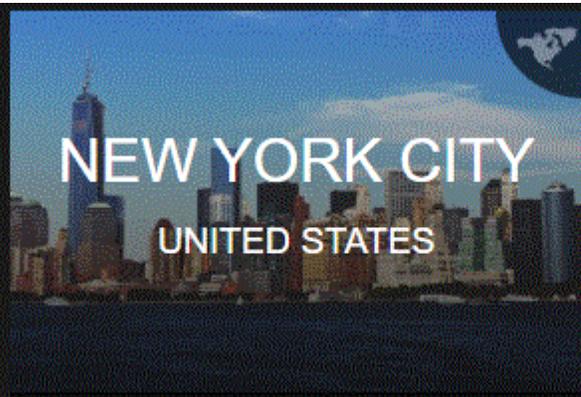
RUTGERS
THE STATE UNIVERSITY
OF NEW JERSEY

NEW JERSEY'S RISING SEAS AND CHANGING COASTAL STORMS: Report of the 2019 Science and Technical Advisory Panel



November 2019

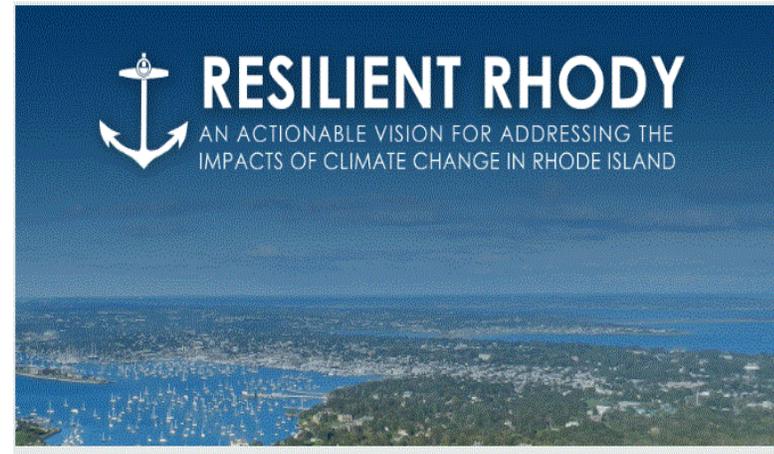
RUTGERS
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OF NEW JERSEY



**TEXAS COASTAL
RESILIENCY MASTER PLAN**
MARCH 2017



**GREATER MIAMI
& THE BEACHES**





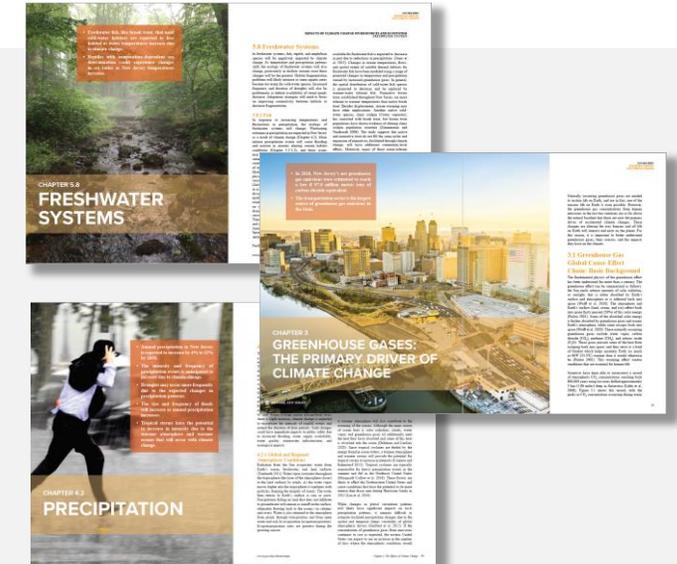
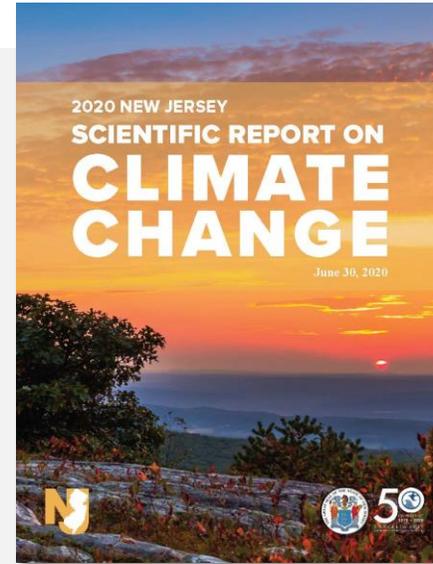
Interagency Council on Climate Resilience



SCIENTIFIC REPORT ON CLIMATE CHANGE

Scientific Report on Climate Change

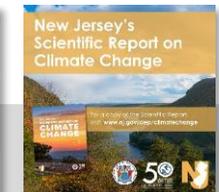
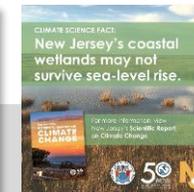
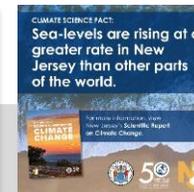
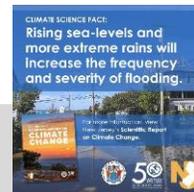
- Comprehensive effort to synthesize the latest and most reliable scientific information on the current and predicted future impacts of climate change.
- The report is one component of the State's comprehensive strategy to both reduce emissions of climate pollutants that fuel global warming, and proactively plan and prepare for the climate impacts that New Jersey cannot avoid.



Released June 30, 2020

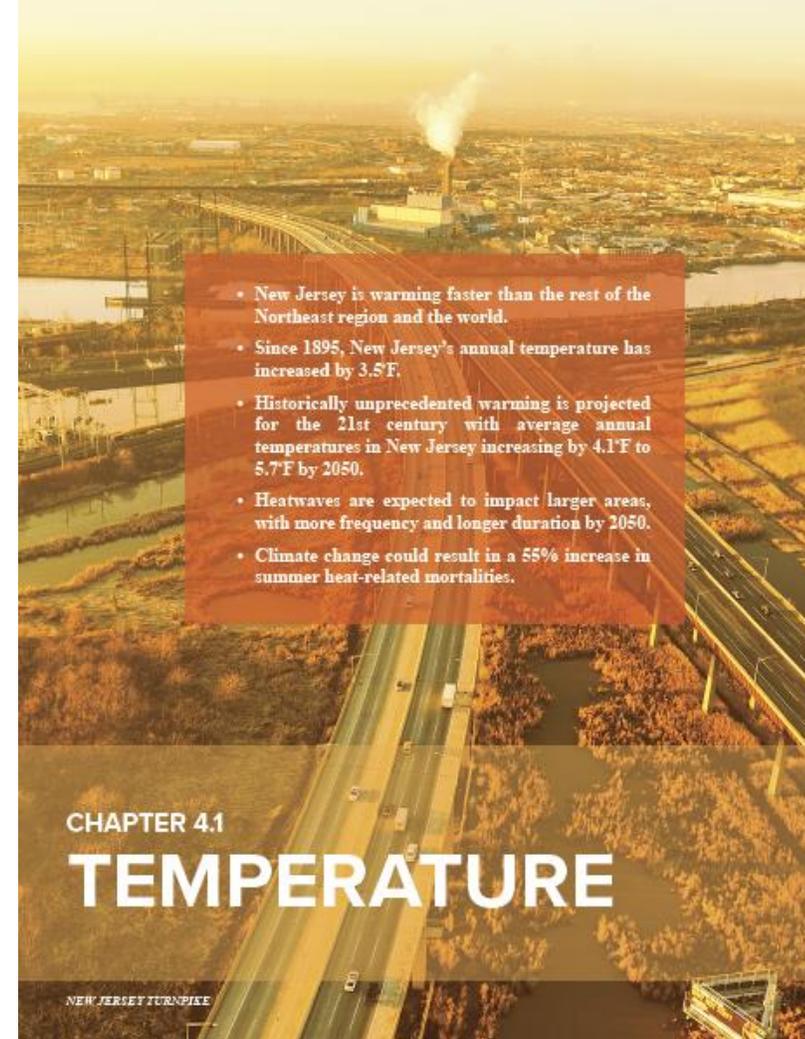
For a copy of the Scientific Report Visit: www.nj.gov/dep/climatechange/

Climate Science Facts from report released as part of a social media campaign.



TEMPERATURE AND PRECIPITATION

- New Jersey's temperature since 1895 has increased by 3.5°F
- By 2050, expect an increase of 4.1-5.7 °F
- Average annual precipitation is expected to increase by 4-11% by 2050
- The intensity and frequency of precipitation events is anticipated to increase



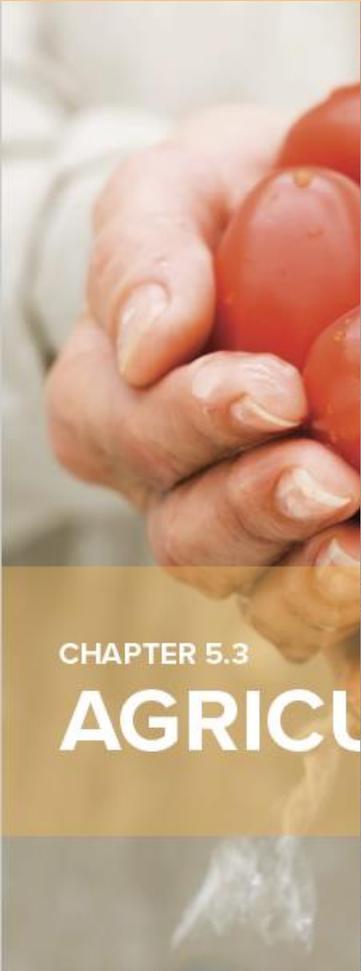
SEA-LEVEL RISE

New Jersey Sea-Level Rise above year 2000 baseline in feet.

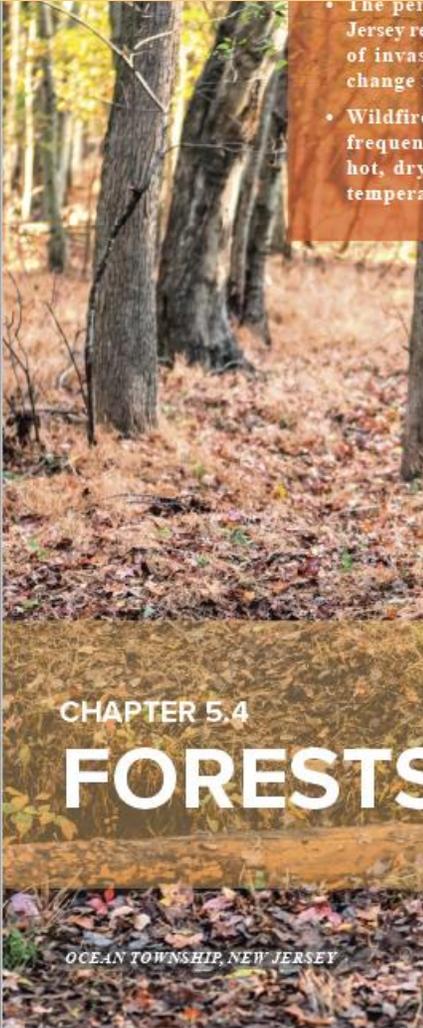
Adapted from Rutgers 2019 STAP Report.

Year		2010	2030	2050	2070	2100	2150
Low End	95% chance SLR will meet or exceed		0.3	0.7	1.0	1.3	2.1
Likely Range 66% chance	83% chance SLR will meet or exceed		0.5	0.9	1.4	2.0	3.1
	50% chance SLR will meet or exceed	0.2 Observed	0.8	1.4	2.2	3.3	5.2
	17% chance SLR will meet or exceed		1.1	2.1	3.1	5.1	8.3
High End	5% chance SLR will meet or exceed		1.3	2.6	3.8	6.9	13.8

OTHER IMPACTS



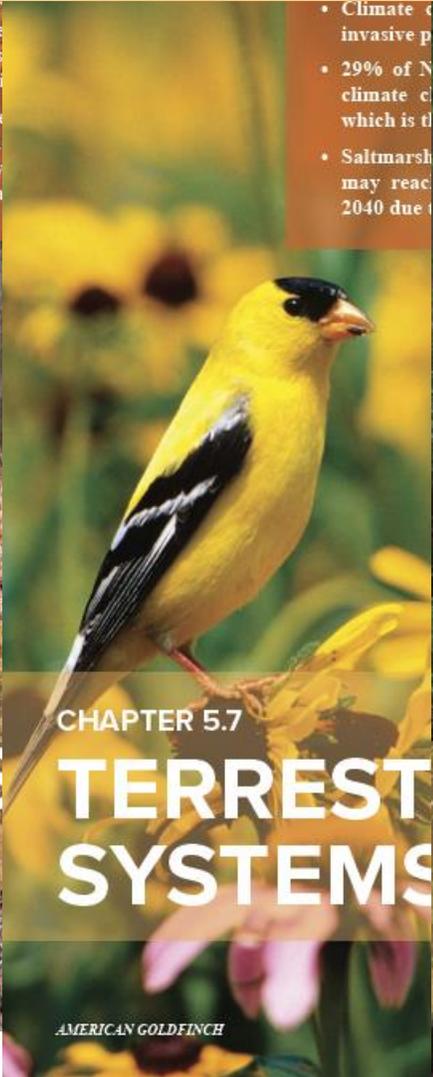
CHAPTER 5.3
AGRICULTURE



CHAPTER 5.4
FORESTS

OCEAN TOWNSHIP, NEW JERSEY

- The percentage of invasive plant species in New Jersey is expected to increase by 20% by 2040 due to climate change.
- Wildfires are becoming more frequent and intense due to hot, dry temperatures.



CHAPTER 5.7
TERRESTRIAL SYSTEMS

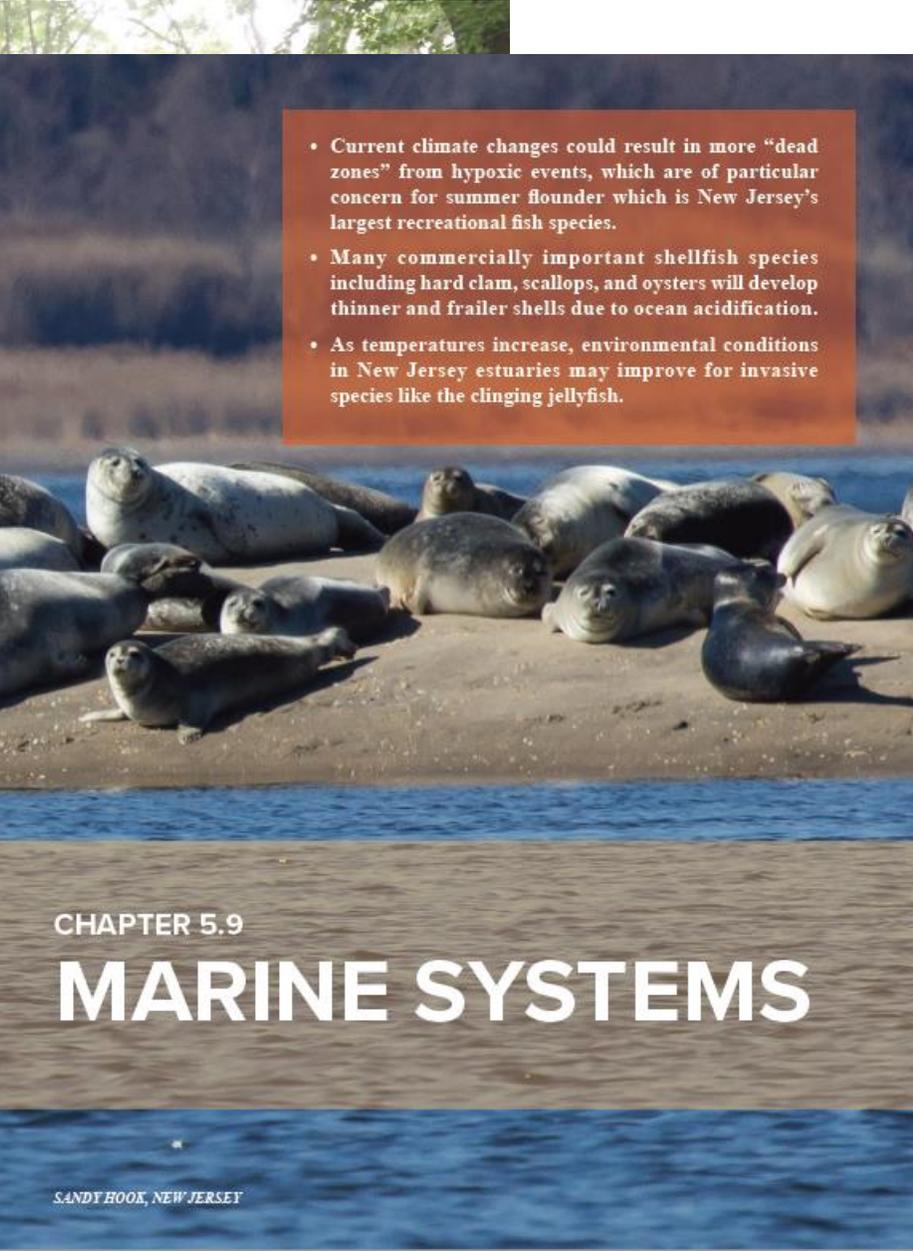
AMERICAN GOLDFINCH

- Climate change is expected to increase the number of invasive plant species in New Jersey.
- 29% of New Jersey's wetlands are expected to be lost by 2040 due to sea level rise.
- Saltmarshes are expected to be lost to 2040 due to sea level rise.



CHAPTER 5.8
FRESHWATER SYSTEMS

- Freshwater fish species are expected to lose habitat as water temperatures rise due to climate change.
- Reptiles with temperature-dependent sex determination are expected to have skewed sex ratios as temperatures increase.



CHAPTER 5.9
MARINE SYSTEMS

SANDY HOOK, NEW JERSEY

- Current climate changes could result in more "dead zones" from hypoxic events, which are of particular concern for summer flounder which is New Jersey's largest recreational fish species.
- Many commercially important shellfish species including hard clam, scallops, and oysters will develop thinner and frailer shells due to ocean acidification.
- As temperatures increase, environmental conditions in New Jersey estuaries may improve for invasive species like the clinging jellyfish.

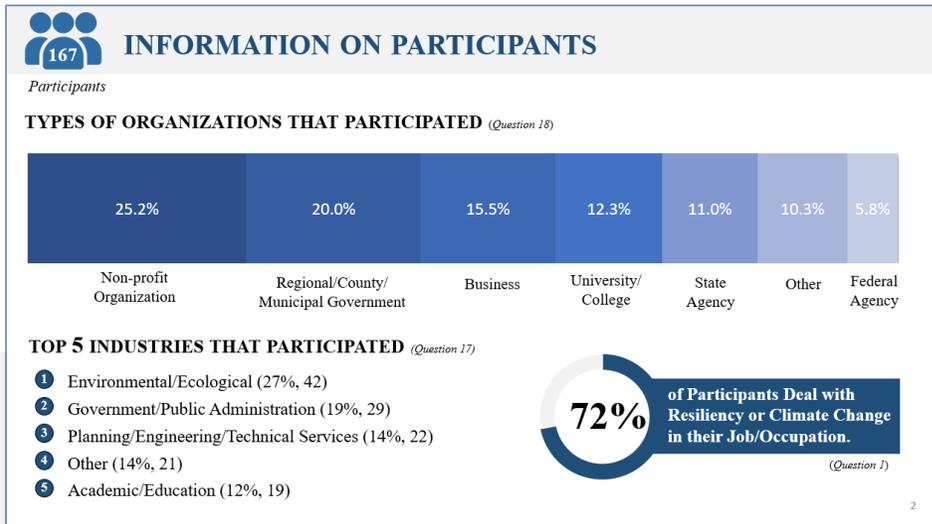
EXECUTIVE ORDER 89 UPDATE

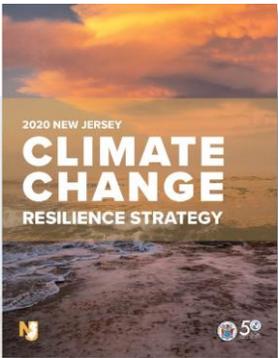
Climate Resilience Survey

- On May 9, 2020, DEP posted a link to take an online Climate Resilience Survey.
- The survey asked 19 questions on the following topics:
 - Information on participants;
 - Concerns on effects and impacts of climate change; and,
 - The direction participants would like the State to take regarding climate and coastal resilience.



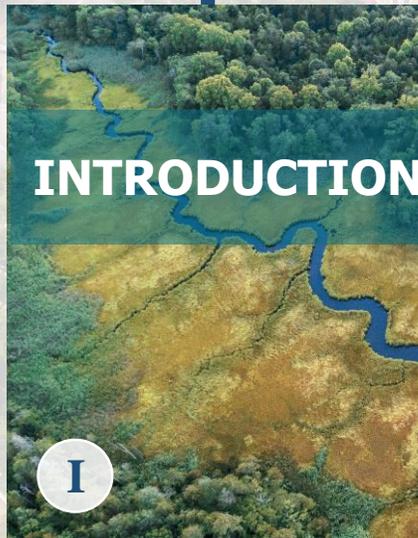
For a copy of the Climate Resilience Survey Results visit: www.nj.gov/dep/climatechange/resilience.html





CLIMATE CHANGE RESILIENCE STRATEGY

MAIN SECTIONS



I. Introduction



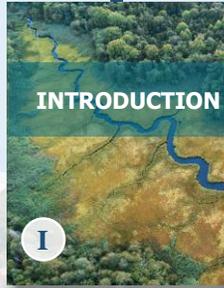
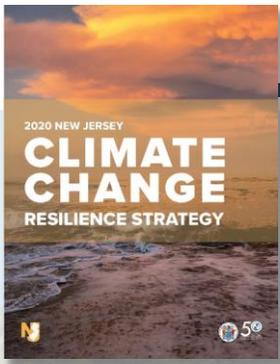
II. Climate Change in New Jersey



III. Responding to Climate Change

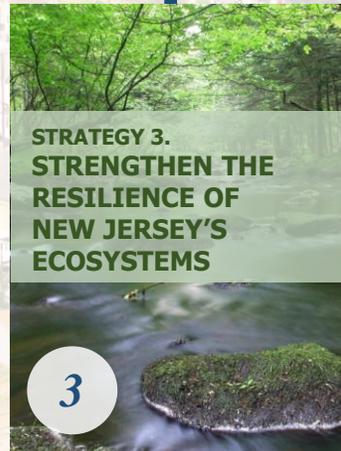
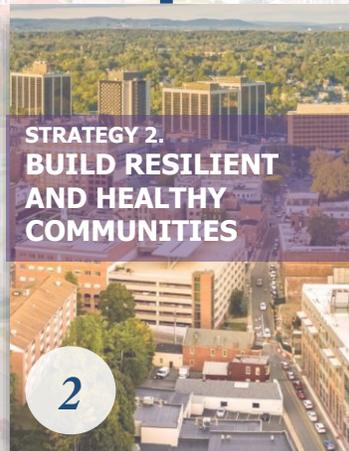


IV. Coastal Resilience Plan



CHAPTER III. RESPONDING TO CLIMATE CHANGE

CLIMATE CHANGE STRATEGIES



Support and
Share the
Science



Build Resilient
and Healthy
Communities



Strengthen the
Resilience of
New Jersey's
Ecosystems



Promote
Coordinated
Governance



Expand Resilience
Funding and
Financing



STRATEGY 1. SUPPORT AND SHARE THE SCIENCE

PURPOSE: To ensure New Jersey's response to climate change is based on the most current scientific information using a coordinated, consensus-based research agenda. Provides basis for State agencies, institutions, and the public-at-large to understand ecological and social vulnerabilities to climate change impacts.

Climate Resilience Facts:

New Jersey's temperature since 1895 has increased



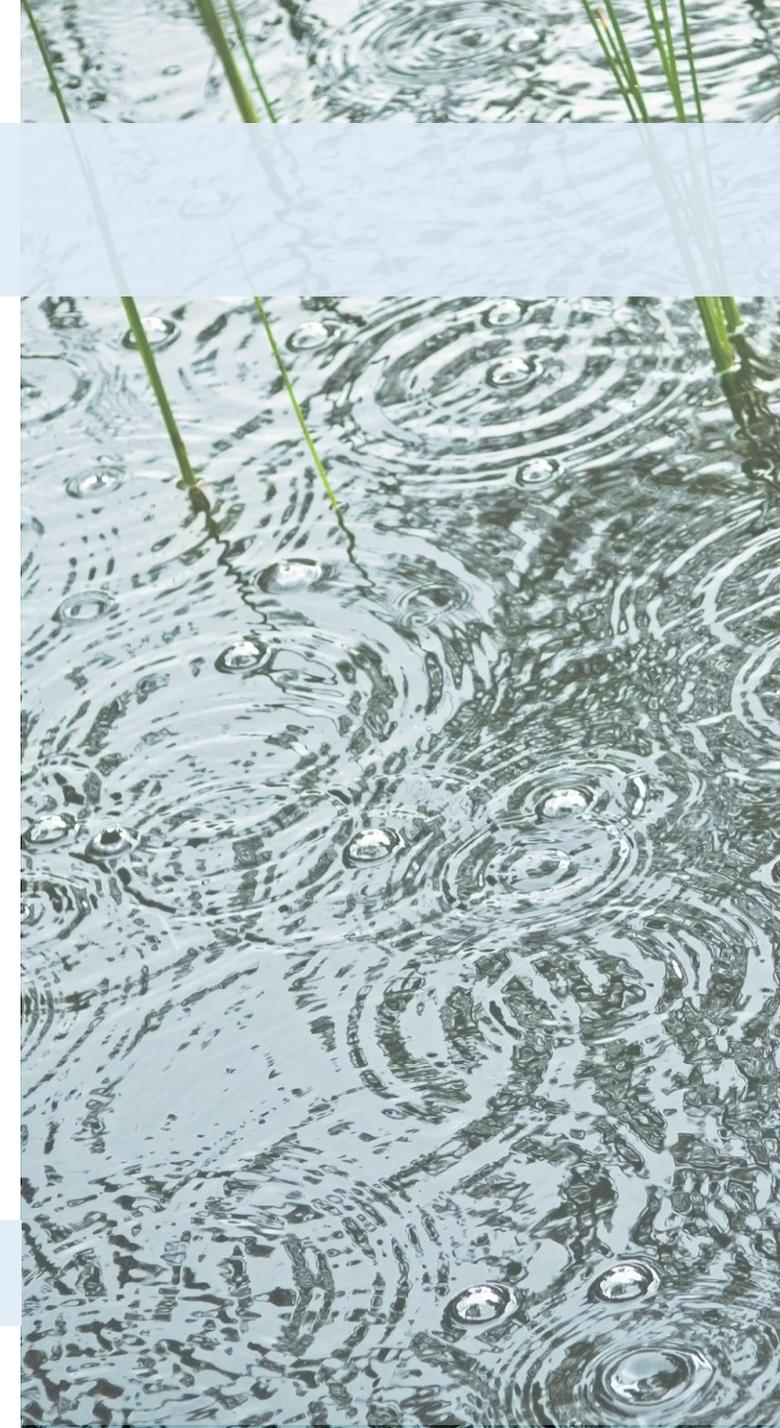
The intensity & frequency of precipitation events is anticipated to increase due to climate change.

- 2020 New Jersey Scientific Report on Climate Change



“Be Science-based” is the top resilience principle selected by participants.

- Climate Resilience Survey Results, 2020





STRATEGY 2. BUILD RESILIENT AND HEALTHY COMMUNITIES

PURPOSE: Foster community-level actions that are climate resilient, sustainable, and equitable by taking appropriate State action. Supports increasing State and local capacity to integrate and incentivize resilience and address the vulnerabilities of existing infrastructure, development, and populations.

Climate Resilience Facts:

\$5.8 B

FEMA Flood Insurance Claims have been paid in New Jersey since 1978 (3rd highest in the nation).



As warm habitats that host insects increase, more people may become exposed to potential virus threats.

- NJ State Hazard Mitigation Plan, 2019



The top State Strategies to Support Municipal Climate Resilience that participants want to see more of in the State are:

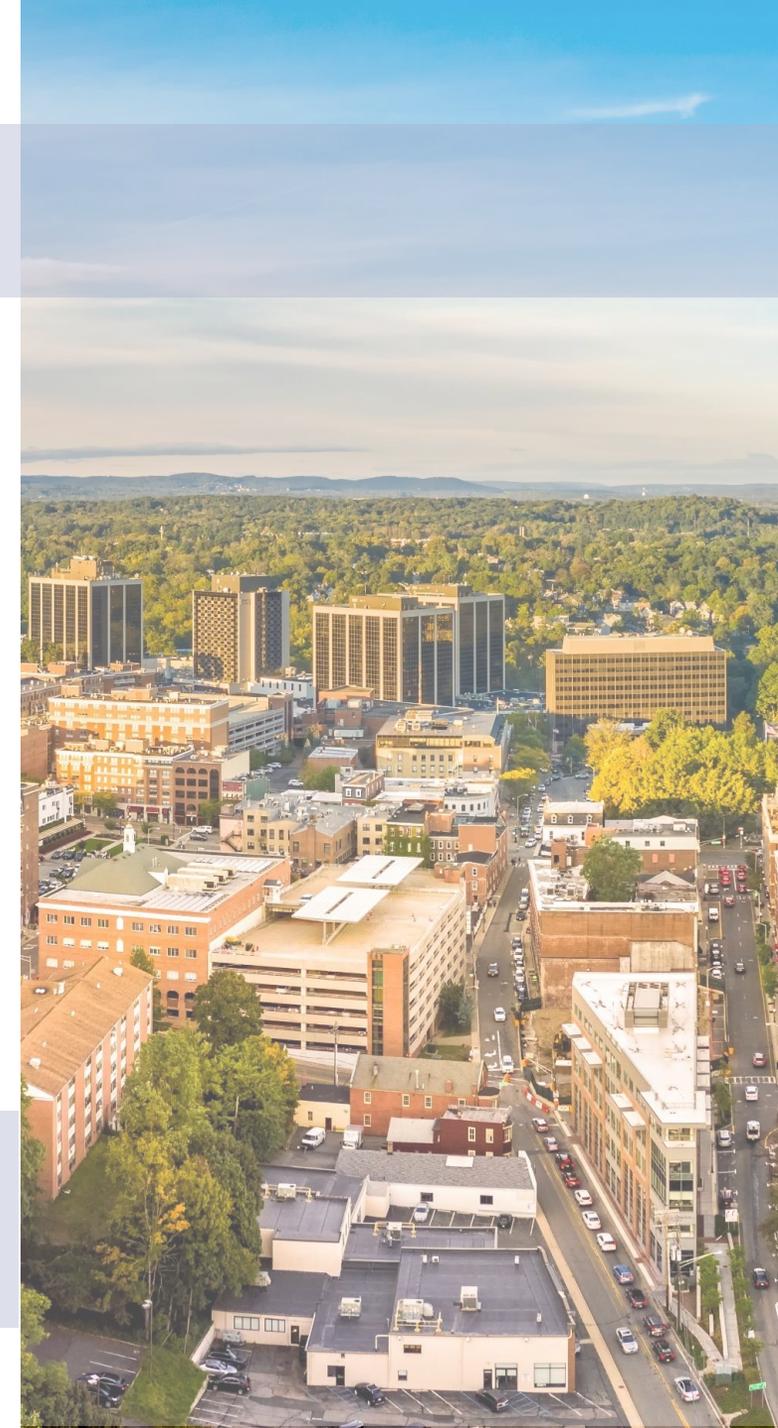


Guidance Development



Funding/Finance

- Climate Resilience Survey Results, 2020





STRATEGY 3. STRENGTHEN THE RESILIENCE OF NEW JERSEY'S ECOSYSTEMS

PURPOSE: To expand environmental protection and conservation; and, enhance the management of our forests, croplands, and parks to assist their response to climate-induced environmental stressors. Healthy ecosystems help mitigate storm surge, cool our cities, and purify our water.

Climate Resilience Facts:



of New Jersey's bird species are vulnerable to climate change.

Projected losses of marshes in the Delaware Estuary by 2100.



Brackish Marshes



Tidal Swamps



Tidal Fresh Marshes

- 2020 New Jersey Scientific Report on Climate Change



"Ecosystems & Wildlife"

impacts are the top concern regarding climate change.

- Climate Resilience Survey Results, 2020





STRATEGY 4. PROMOTE COORDINATED GOVERNANCE

PURPOSE: To develop a cross-cutting, government-wide approach for New Jersey to be resilient to climate change. The Interagency Council can play a key role in driving resilience policy as a forum for planning and information sharing. Equity, inclusion, and innovation will be central to those discussions.

Climate Resilience Facts:

The Interagency Council on Climate Resilience has membership serving from:

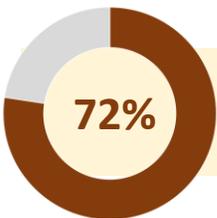
17
State
Agencies

New Jersey's Local Government Includes:

565
Municipalities

- 254 boroughs
- 52 cities
- 15 towns
- 241 townships
- 3 villages

-State of New Jersey, 2020



of participants deal with resilience or climate change in their job/occupation.

- 2020 New Jersey Scientific Report on Climate Change





STRATEGY 5. EXPAND RESILIENCE FUNDING AND FINANCING

PURPOSE: To incorporate climate change into fiscal decisions, equitably meet needs with full transparency, and identify financing mechanisms and opportunities to reduce the financial burden of resilience on the State Government. This will help ensure public expenditures will serve the long-term economic needs and resilience of communities.

Climate Resilience Facts:

\$7.2B

has been loaned by the New Jersey Environmental Infrastructure Trust since 1987.

- New Jersey Infrastructure Bank, 2020



Top Financing Strategy participants want to see the State explore:

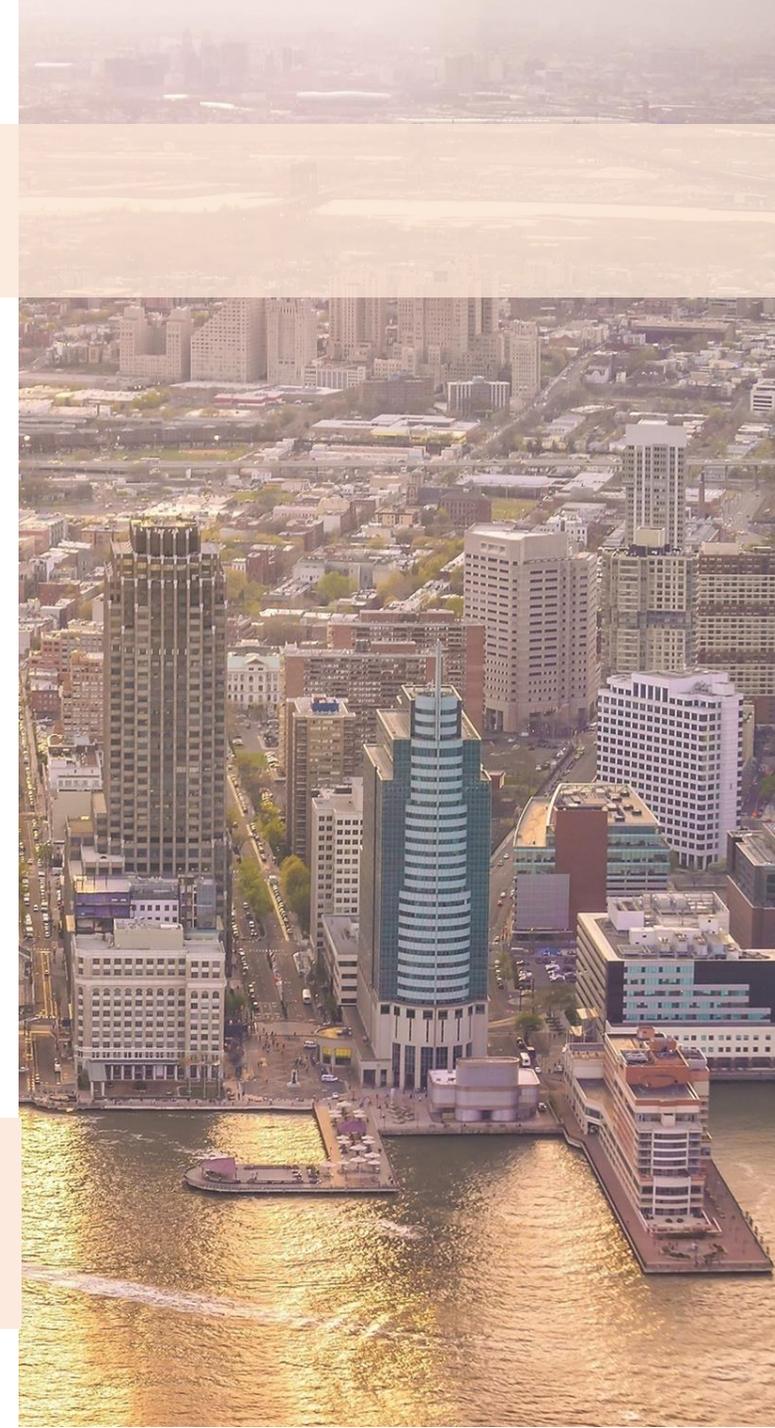


Leverage Federal
Spending Programs



Encourage Private
Sector Cost-sharing

- Climate Resilience Survey Results, 2020





COASTAL RESILIENCE PLAN

PURPOSE: To enhance the State’s current coastal management efforts and modernize funding to address significant threats from climate change to the coastal zone, including sea-level rise. State action will support local resilience planning, identify and evaluate new resilience projects, and facilitate the evolution of the coastal zone as populations move to safer areas.

Climate Resilience Facts:



"Sunny day flooding" will occur more often across the entire coastal area due to sea-level rise.

Sea-levels are increasing at a greater rate in New Jersey than other parts of the world.



- 2020 New Jersey Scientific Report on Climate Change



Top Coastal Resilience Strategies participants want to see more of are:

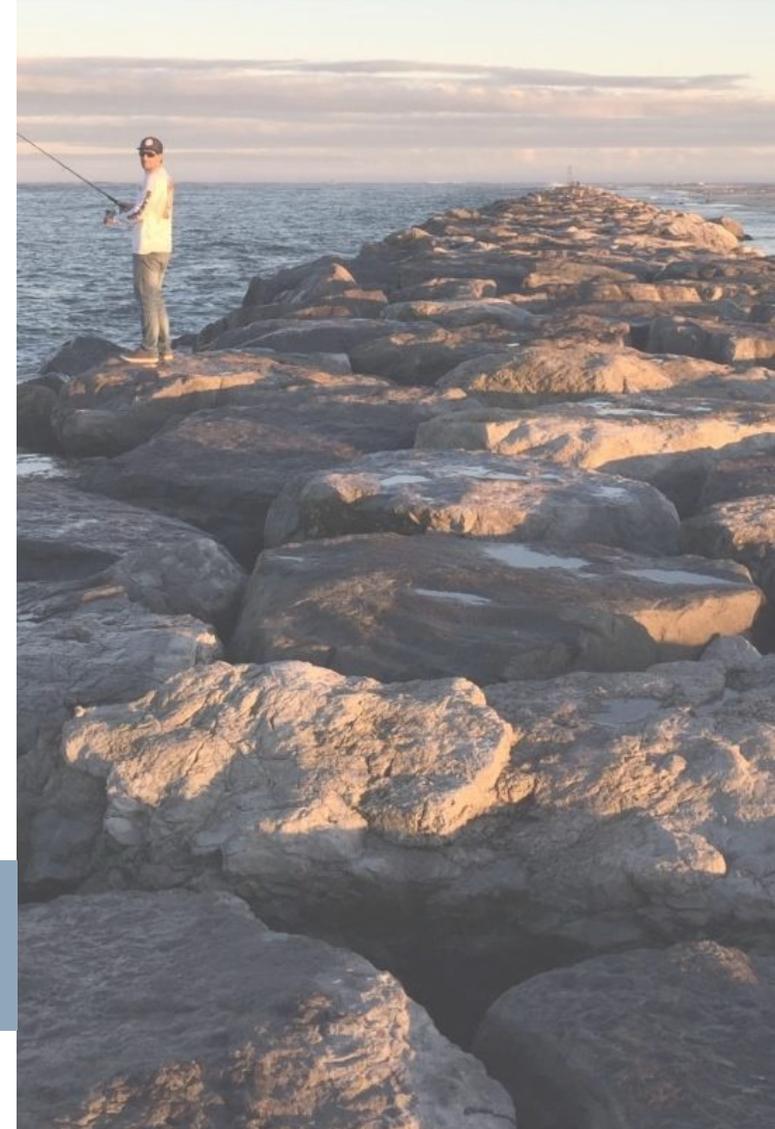


Marsh Restoration & Migration



Living Shorelines

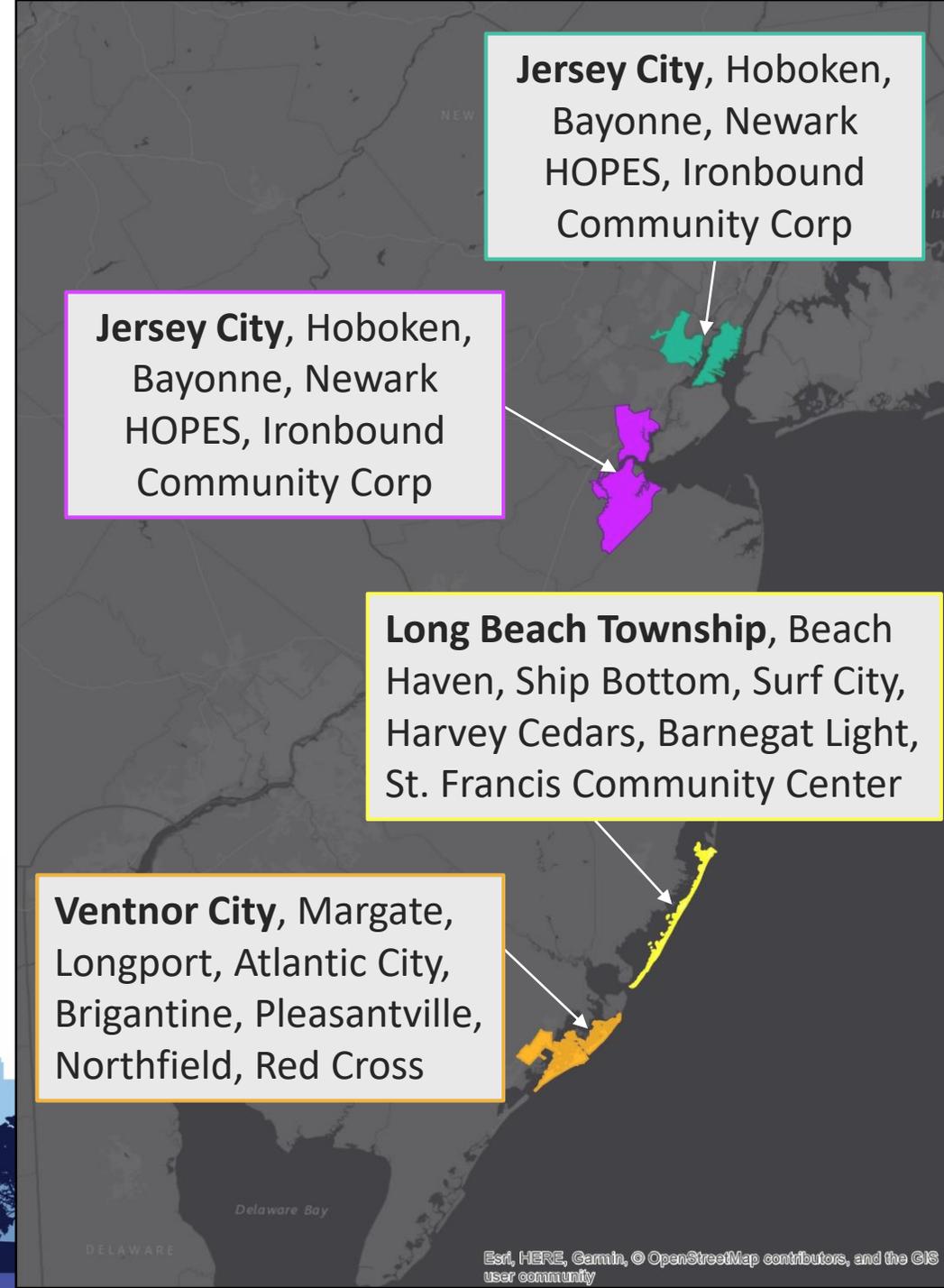
- Climate Resilience Survey Results, 2020



Resilient NJ

- 23 towns participating in 4 regional resilience planning projects
- Addressing future flooding - looking at least 2070
- Program includes plan development and implementation
- Projects starting now – finalized Spring 2022

Contact us: Resilientnj@nj.dep.gov



QUESTIONS

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**More information can be found on
the DEP Climate Change website
<https://www.nj.gov/dep/climatechange/>**

