

Climate Risk and Resilience at Con Edison

Queens Community Board Presentation

PHOTO COURTESY OF CON EDISON



Our Integrated Strategy

We are committed to meeting societal goals and our customer expectations. Our Long-Range Plans communicate the strategy, actions, and investments needed to advance towards the clean energy transition.



CLIMATE RESILIENCE JOURNEY

Progress of Climate Change Adaptation Work

Con Edison is committed to addressing climate risks and improving system resilience by taking actions to prevent, mitigate, and respond to the physical impacts of climate change.

Storm Hardening

(2013 - Present)

In the aftermath of Superstorm Sandy, we invested over \$1.1 billion in increasing electric, gas, and steam resilience to sea level rise and storm surge, flooding, and heavy winds

First Climate Change Vulnerability Study and Implementation Plan

(2017 - 2022)

- Investigated potential impacts on energy systems using CMIP5 models provided by Columbia University
- Integrated climate into planning, design and operations

2023 Climate Change Vulnerability Study (CCVS) and Resilience Plan

- Updated Climate Study and developed a comprehensive 20-year resilience plan
- Basis for projections were CMIP6 models provided by NYS/Columbia University

2024+ Continued integration of resilience planning

Biennial progress reports to the Commission on the implementation of the Resilience Plan and performance of the adaptation measures

- Refresh Climate Study (2028)
- Issue another Climate Change Resilience Plan (2028)

Highlights from the 2023 Vulnerability Study



Temperatures will increase **faster than previously projected**.



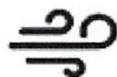
Precipitation projections show a **moderate increase over the prior projections** (and a more significant shift relative to historical norms).



Sea level rise projections have **not changed** since the 2019 C CVS. Con Edison's service area is still expected to experience sixteen inches of sea level rise by 2050.



Wind, deluge rain and ice projections remain the most **uncertain**. A review of external scientific studies indicates the Con Edison service area is likely to experience stronger wind gusts in the future due to intensifying storms, particularly during tropical cyclones.

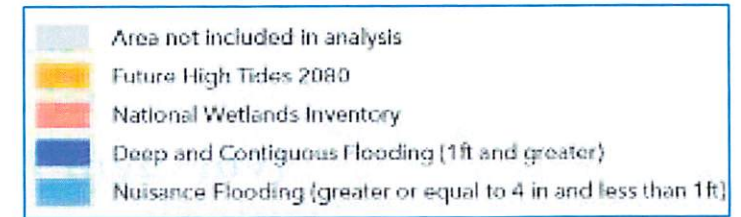


Directional changes in **extreme events** have not changed since the 2019 C CVS, but new scientific research has strengthened and refined our current understanding of these risks.

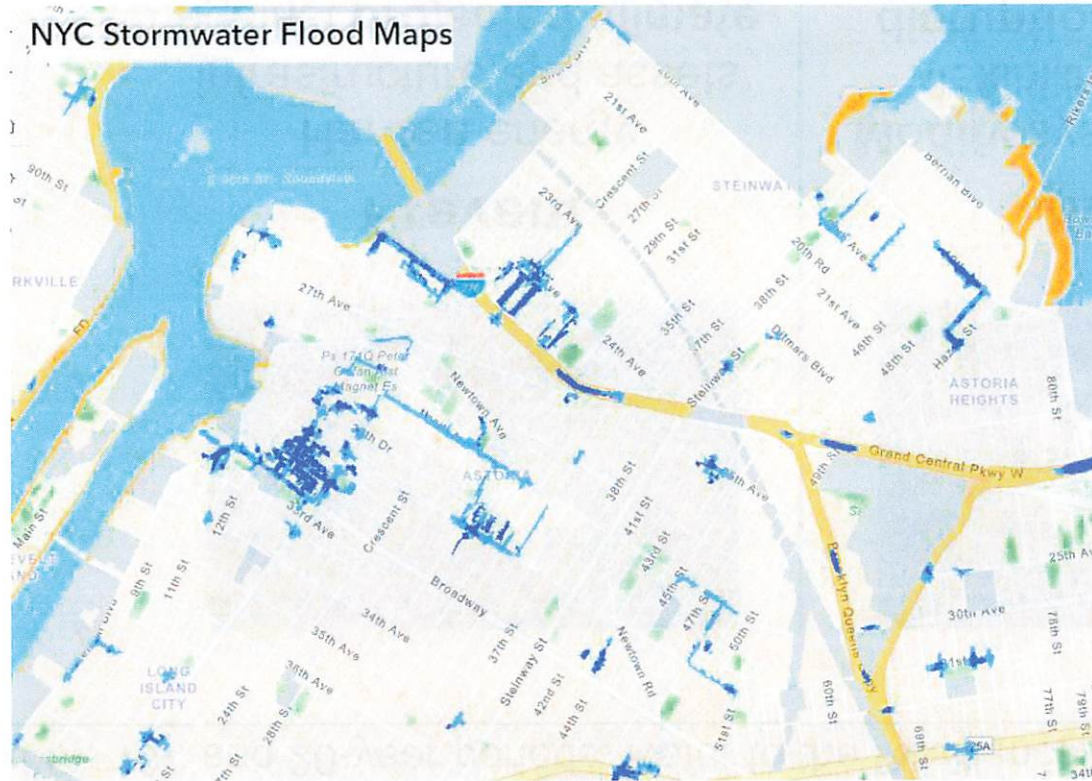
- **Hurricanes** are expected to increase in intensity with a higher probability of northeast tracks due to a projected northward migration of strong hurricanes.
- **Extreme heat waves** will increase in both frequency and intensity.
- **Nor'easters and cold snaps** will decrease in frequency, but when they occur, they may be more intense.
- **Deluge precipitation** is expected to increase in both frequency and intensity.
- **Concurrent and consecutive** extreme events are expected to increase in frequency and intensity.

NYC Stormwater Flood Maps

www.stormwater-resiliency-plan.pdf (nyc.gov)



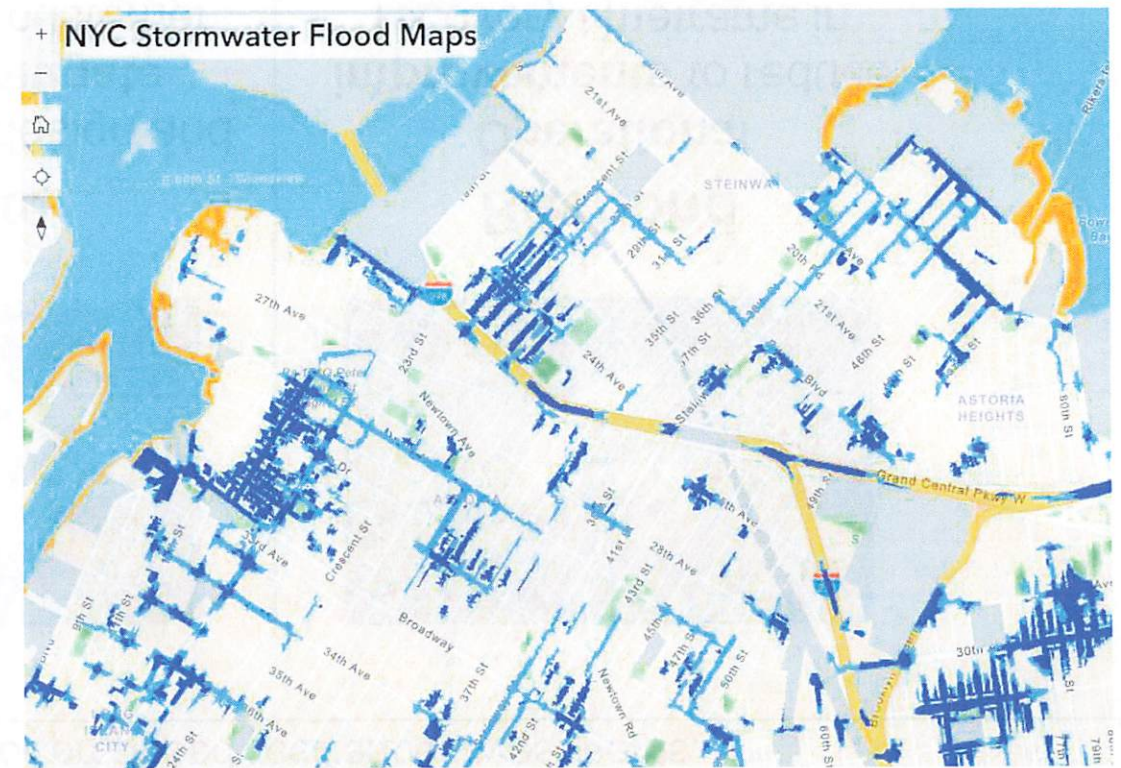
Moderate Stormwater Flood with 2050 Sea Level Rise



~2" in one hour (10% chance of occurrence per year)

+ 2.5' of SLR (2050's "high" estimate)

Extreme Stormwater Flood with 2080 Sea Level Rise

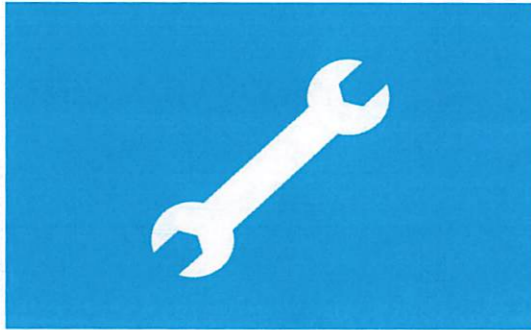


~3.5" in one hour (1% chance of occurrence per year)

+ 4.8' of SLR (2080s "high" estimate)

Our Strategies to Address Climate Risks

We developed a holistic approach and investment strategy to address climate risks to our electric system identified for the next 5-, 10-, and 20-year periods. Refer to the Resilience Plan for proposed resilience investments.



Prevent

Harden energy infrastructure and assets against **projected climate conditions** to **prevent outages**



Mitigate

Modify system design and flexibility to **mitigate disruptions** to customer service



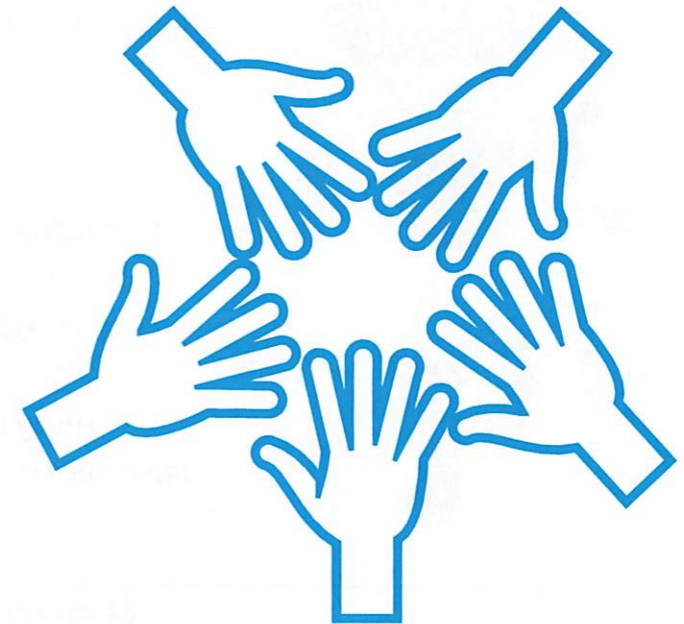
Respond

Operational improvements to reduce recovery timeframe in **response to extreme weather**

Building Resilience is a Shared Goal

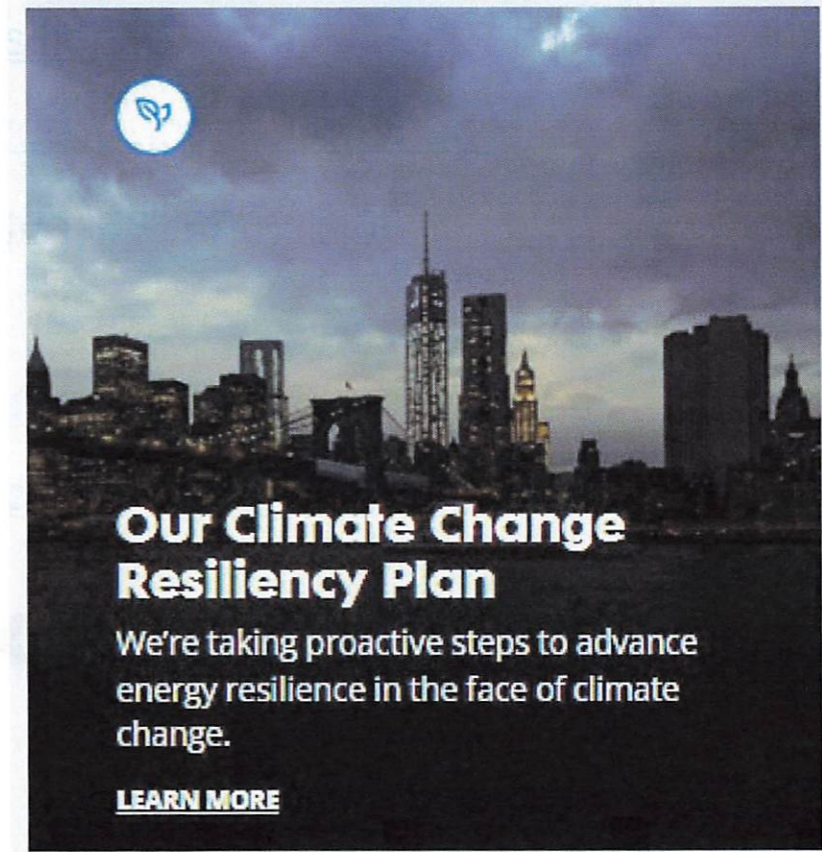
Building resilience requires collaboration and input from numerous stakeholders, including regulators, community boards, nonprofits, regional planners, universities and many others

- As utilities build more resilient infrastructure, they should continue to communicate with stakeholders on how they are incorporating the impacts of climate change
- Customers and other stakeholders should also develop their own adaptation solutions and resilience plans
- Frameworks and policies should support multi-stakeholder collaboration to enable a more resilient electric grid



Reference Links






- Website: www.ConEd.com/Resilience
- Full Study: [2023 Climate Change Vulnerability Study](#)
- Full Plan: [2023 Climate Change Resilience Plan](#)
- Two-page summaries:
 - [Climate Change Vulnerability Study - Summary](#)
 - [Climate Change Resilience Report – Summary](#)



Appendix

Impacts of the Latest Climate Science

Con Edison's climate change vulnerability study (CCVS) estimates that heat impacts may occur sooner than previously anticipated, with more heat waves and increases in the frequency and intensity of certain extreme weather events.

Climate variables		Historical*	2030 Projections	2050 Projections
Maximum temperature (Days per year with maximum temperature >95°F)		4	17	32
Heat waves (Number of 3-day heat waves with daily maximum temperature >90°F)		2	6	9
Precipitation (Days with precipitation >2 inches)		3	4	5
Sea level rise (Sea level by 2050)		-	9 in.	16 in.
Extreme weather events (Frequency and intensity)		Projections indicate an increase in <i>frequency</i> and <i>intensity</i> of certain extreme weather events such as long duration heat waves and deluge rainfall, while tropical cyclones are expected to increase with intensity and more probable northeast tracks.		

*Historical Baseline for 1) Days per year over 95°F is 1981-2010 (30 year); for 2) Sea level rise is 1995 - 2014