

# Climate Change Vulnerability Study & Resilience Plan

## Community Leader Webinar

August 17<sup>th</sup> 2022

**nationalgrid**





## Meeting Purpose

National Grid, together with the other electric utilities in New York and in consultation with NYSERDA and the New York State Department of Public Service Staff, has launched a climate vulnerability study to help prepare for the increase in severe weather expected from climate change. The study will provide a new way for us to evaluate the Company's electric infrastructure, design specifications, and procedures to better understand our electric system's vulnerability to climate-driven risks. Based on the study results, we will be creating a "Resilience Plan" which will be submitted to the New York Public Service Commission.

An important part of our planning is to understand and incorporate local concerns and priorities.

The purpose of today's meeting is to tell you more about this study and timeline and how you can participate.



# We take our obligation to provide safe and reliable electric service seriously, starting with our asset planning process



**Reliability / Storm Hardening** programs focus on upgrades to our infrastructure to make it less susceptible to storm damage which results from high winds, flooding, or icing.

- Inspections and Maintenance - five-year inspection cycle to identify weakened assets for maintenance or replacement
- Vegetation Management- addresses “danger” trees that have the potential to come into contact with our electric lines
- Other significant reliability programs include Flood Mitigation, Side Tap Fusing, Multi-Value Transmission, and Minor Storm Hardening projects (rear lot relocations, etc.).

**Resiliency programs** designed to target the ability to continue to operate after interruption and to recover quickly after outages.

- Fault Location, Isolation, and Service Restoration (FLISR) - a crucial program involving a control scheme which incorporates telecommunications and advanced control of key switching devices to enable remote monitoring and operator control of field devices for normal operations and maintenance, at the same time providing an automated response to system contingencies.
- Other Resiliency programs include Cutout Mounted Reclosers, Three Phase Reclosers, Remote Terminal Units, Line Sensors, ADMS, Mobile Substations, Targeted Feeder Ties, and Transmission Survivability.

# And we are committed to strong storm response

## Notable Storm Performance

Storm Date and Event Type		Impacted Upstate NY Divisions			Customers Impacted and 95% Restored	
Date	Event Type	West	Central	East	Customers Interrupted	95% Restored in "X" hrs.
16-Feb-2022	Wind	X	X	X	50,226	9
6-Mar-2022	Wind	X			40,209	21
7-Mar-2022	Wind			X	55,530	13.5
24-Mar-2022	Ice / Mixed Precip.	X			18,294	13
15-Apr-2022	T-Storms / Wind	X	X	X	15,336	6.5
18-Apr-2022	Heavy Wet Snow		X	X	237,785	39.5
16-May-2022	T-Storm / Wind		X	X	22,075	7.5
21-May-2022	T-Storm / Wind		X	X	16,670	5.5
16-Jun-2022	T-Storm / Wind	X	X	X	52,419	29
12-Jul-2022	T-Storm / Wind	X	X	X	34,818	18
13-Jul-2022	Unforecasted Micro-Burst 20+ Broken Poles 12 Transformers		X		1,464	10

## Storm Activity – Calendar 2022 Year to Date

- ❑ National Grid has prepared for and responded to 33 weather events (as of July 21)
- ❑ Of the 33 Weather Events:
  - Total Customers Affected 686,789
  - Average Time to Restore 95% of the Affected Customers – 12-hrs.

## EEI Awards – Spring 2022



### ■ Response / Assistance to Other Member Companies

- ✓ Central Hudson Gas & Electric – February Ulster County Ice Storm
- ✓ Avangrid - NYSEG/RG&E – March Wind Event
- ✓ Avangrid - NYSEG/RG&E – March Wind Event
- ✓ Central Hudson Gas & Electric – March Wind Event
- ✓ Avangrid - NYSEG (Oneonta) – April Heavy Wet Snow

### ■ Recovery / Restoration

- ✓ December 2021 - Wind Event
- ✓ April 2022 - Snow and Wind Event

### ■ Since 1998 – 42 EEI Response & Recovery Awards





# National Grid is creating new tools and adjusting our approach in response

## Climate Change Risk Study and Tool (CCRT)

*Gives us important projections that can be used to inform our asset planning and resilience programs*

- Estimates physical risk level for assets considering exposure and vulnerability to climate hazards over different climate scenarios and periods of time
- Evaluates climate hazards - coastal flooding, river flooding, high temperatures, low temperatures, heatwaves, high winds, compound events (summer and winter), freeze thaw cycles, lightning

## MIT Climate Study

*Applying data science and engineering analysis to climate data*

- Simulated hourly temperature, wind, ice loading, and precipitation data for 2025 – 2041
- Statistical analysis to calculate 1-in-100 wind and icing events for each transmission structure
- Structural analysis based on the most common type of 115kV transmission structures

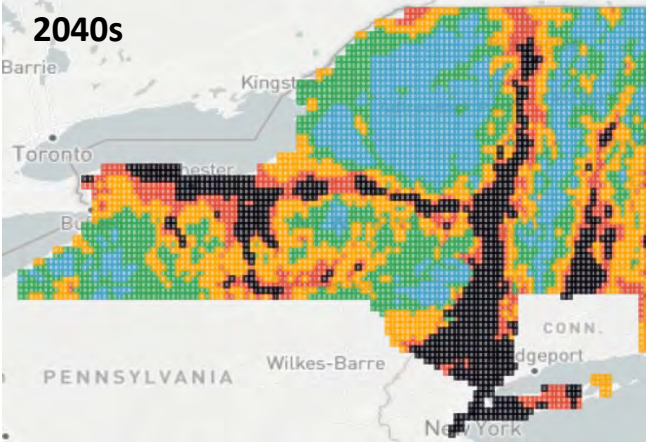
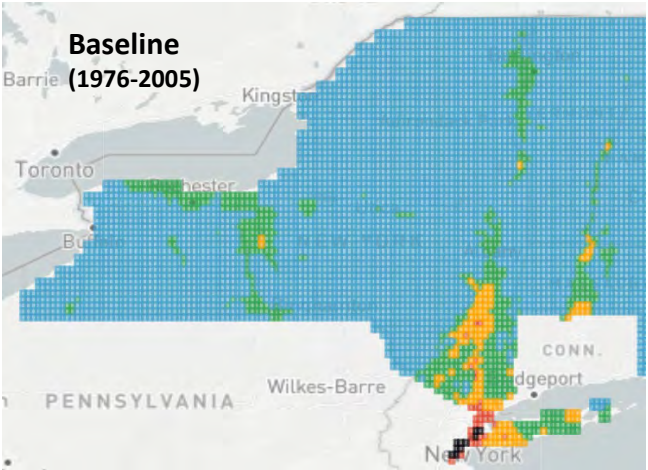
## WISER IUCRC (Weather Innovation, Smart Energy, and Resiliency Industry-University Cooperative Research Centers)

*Working with academia on utility-specific concerns with weather impacts on resiliency*

- Partner with SUNY Albany, University of Connecticut, and industry to conduct research projects on impacts of weather including modeling and resiliency solutions
- IUCRCs are led by the National Science Foundation and bring together industry and academia to cooperate on industry-specific topics

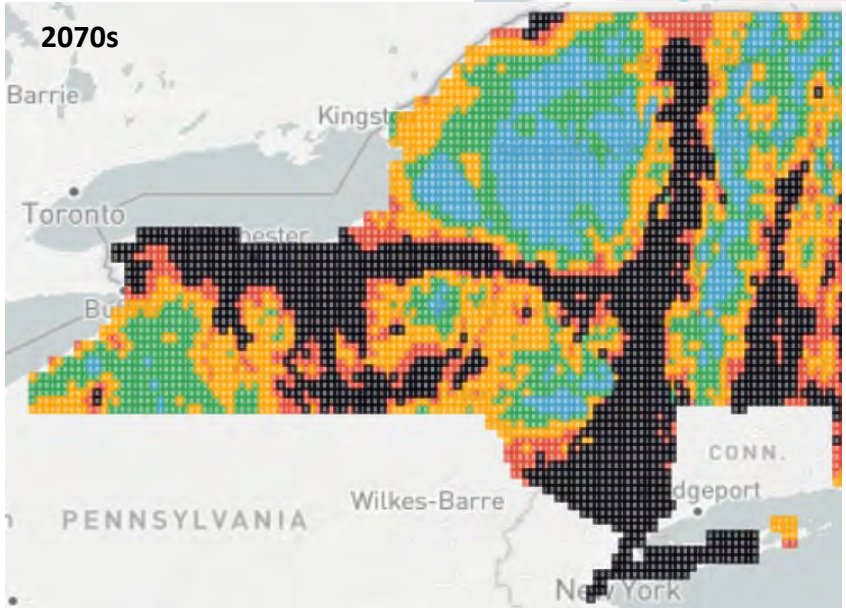


# Climate change is affecting all of us – higher temperatures and increased wind speeds equal more frequent and extreme weather events



Hazard Type	Hazard Level	Value Range
High Temperature	VL	0 - 0.33
High Temperature	L	0.33 - 1.08
High Temperature	M	1.08 - 2.16
High Temperature	H	2.16 - 3.41
High Temperature	VH	3.41 - 365

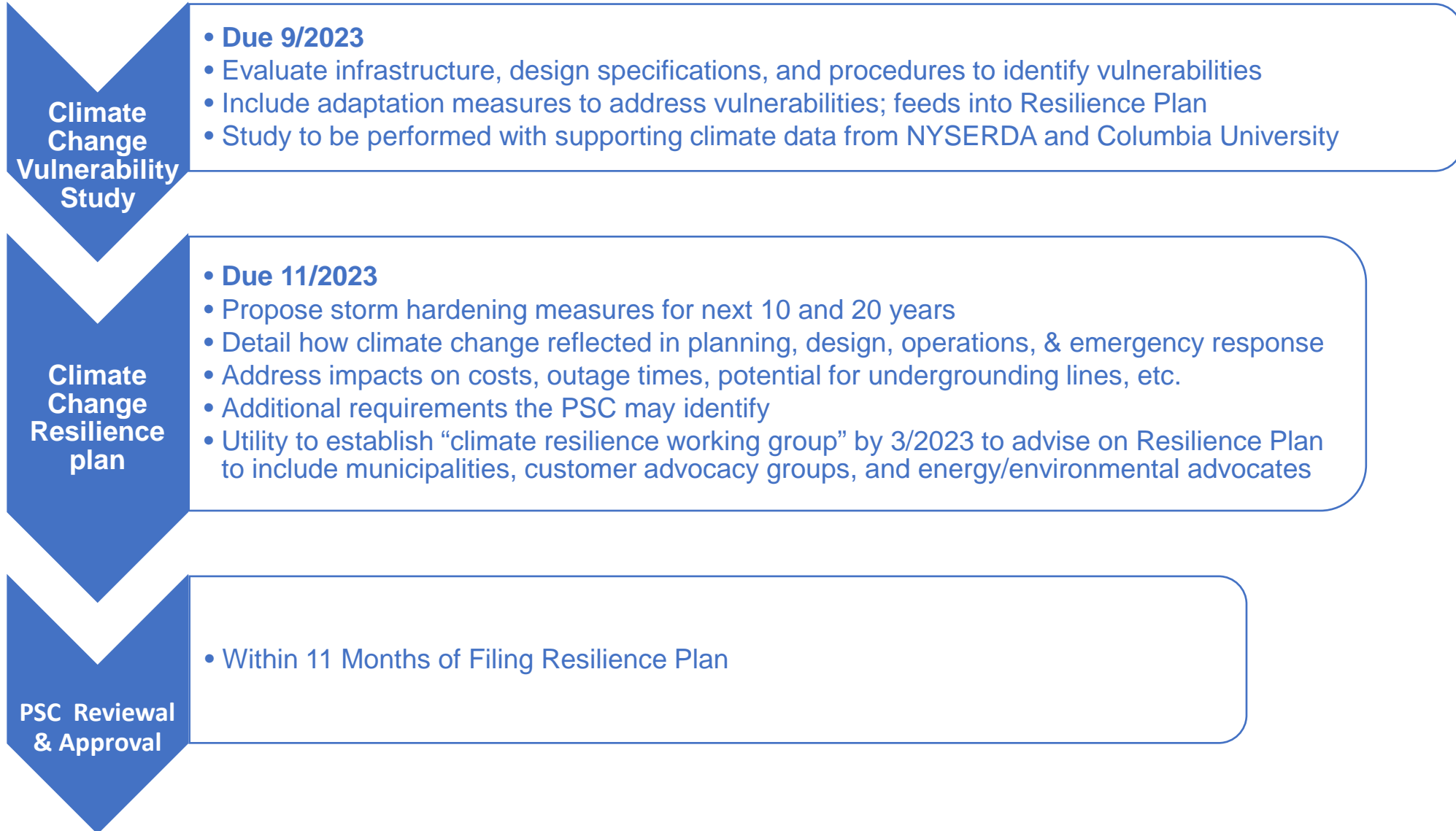
US Transmission: 1-in-100 Wind Speed Events



- 40 - 60 mph
- 60 - 80 mph
- 80 - 86 mph
- > 86 mph

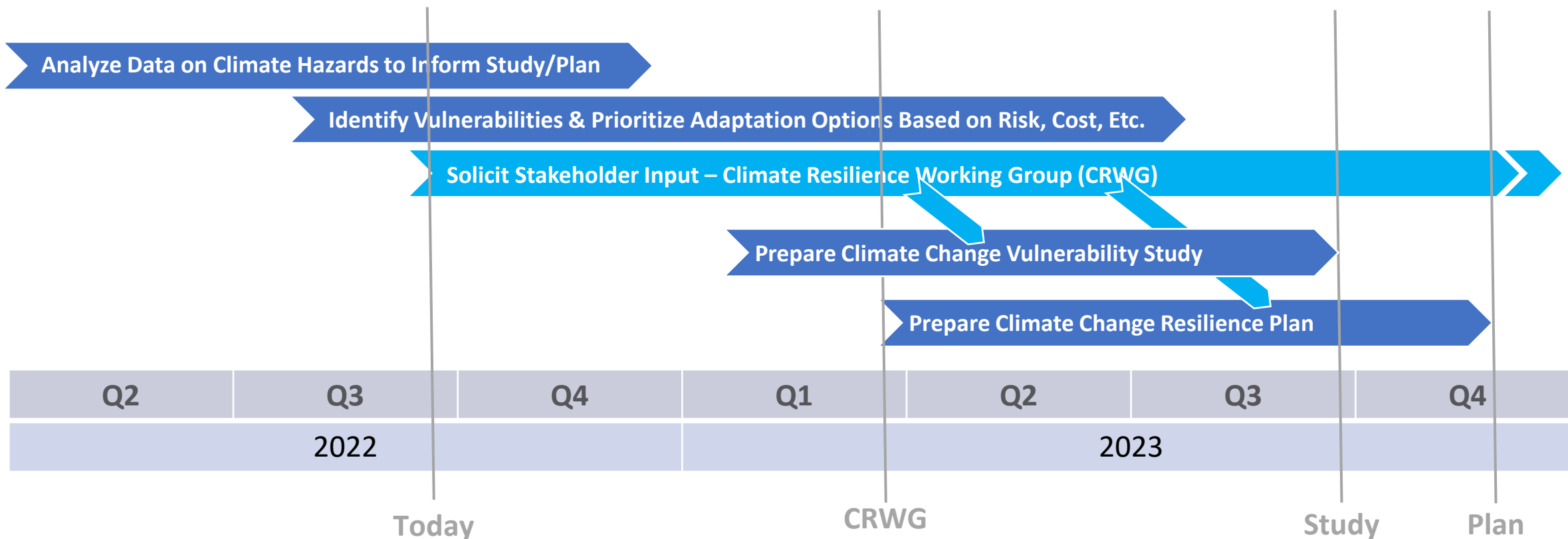
***But there is more to be done....***

**The Climate Vulnerability Study will provide a more comprehensive view to drive future asset planning to ensure safe and reliable service**





# Deliverable Timelines

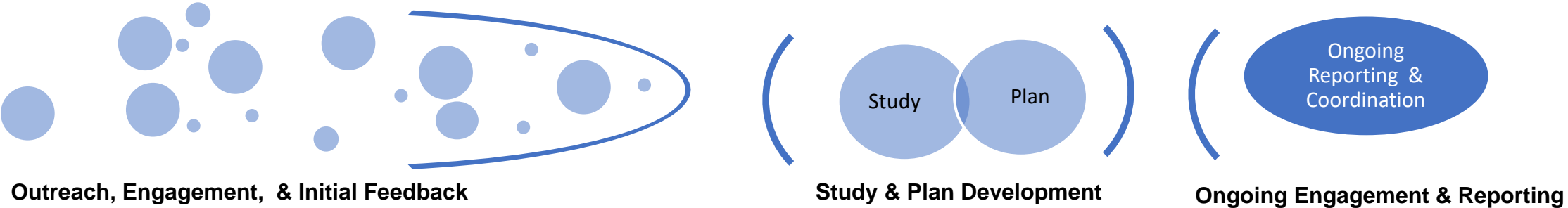


## Next Steps

- Survey stakeholders to elicit feedback and input to inform study & plan
- Build detail on climate hazards, vulnerabilities, and adaptation options
- Review draft ideas with stakeholder and seek additional input



# Stakeholder engagement into utility plans is a critical component



A horizontal timeline arrow pointing from left to right, divided into three segments labeled 2022, 2023, and 2024.

The flowchart details the following steps:

- August 2022:**
  - Initial Outreach to Create Awareness and Seek Preliminary Input
- September 2022:**
  - Local Community Feedback to Identify Priorities
- Winter 2022:**
  - Creation of the Utility Climate Resilience Working Group
- Spring 2023:**
  - Development of Stakeholder Feedback Loop in Draft Study and Plan
- Fall 2024 and Beyond:**
  - Reporting to Stakeholders on Plan Approval and Execution



# Understanding local concerns and priorities is important to National Grid's planning

- We want to capture local priorities and resilience activities either planned or underway in order to inform our planning and facilitate greater coordination
- National Grid will be sending an electronic survey following this meeting for you to tell us about your concerns and efforts
- We will continue to keep you apprised of our study and plan development
- Our preparation and response to storms and events relies on the partnerships we have with you, our County Emergency Operations Centers, First Responders, and our Local and Regional Municipal Leaders





## You can also make your voice heard by participating in the statewide effort being led by the New York Public Service Commission

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The PSC established a new proceeding to coordinate the utilities' efforts:

- You can file comments by visiting the PSC website: [www.dps.ny.gov](http://www.dps.ny.gov) and selecting Case 22-E-0222
- You can also become part of the National Grid's climate resilience working group which will kick-off next spring to advise and make recommendations on the development and implementation of our resilience plan



# Thank You

- Please watch your email for our survey and be sure to complete it and get it back to us as soon as possible
- Let us know any additional questions or contact us if you would like to discuss local or regional concerns
- Working together is crucial to our mutual success.



**We want to hear from you.**

**Questions, Concerns, Comments.**

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