Governor's Council on Climate Change Meeting
January 15, 2021

Connecticut Department of Energy and Environmental Protection

Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

Governor's Council on Climate Change (GC3)
AGENDA

Meeting Date: January 15, 2021
Meeting Time: 9:00-11:00 am
Meeting Location: Zoom

https://ctdeep.zoom.us/meeting/register/tJUocOGvqT4qEtOBHfv3ObHtObPYhbX_feB4

Welcome and Announcements *Chair, Commissioner Katie Dykes, CT DEEP*	**(5 minutes)**
Presentation of the Council's Near-term Recommendations	**(35 minutes)**
Discussion on Implementation of the Near-Term Recommendations	**(35 minutes)**
Discussion of the continuation of the GC3 planning process in 2021	**(25 minutes)**
Public comments	**(20 minutes)**
Next Steps and Adjourn	

Housekeeping

- This webinar is being recorded and minutes will be taken.
- GC3 members please keep yourself on camera and unmute to join the discussion.
- All other attendees please keep yourself on mute and off camera.
- All attendees may use the chat throughout the meeting. Remember the chat is part of the public record and will be captured in the recording.
- There will be public comment at ~10:40 am. Please keep verbal comment to ~2 minutes to give everyone a chance to speak.
- If there is a major disruption to the meeting, such as a 'zoom bombing,' we will first try to remove the individual from the meeting and if that is not possible, we will close the meeting. If that happens, we will open it back up again right away. Please log back in using the link provided to you when you registered.

Governor's Council on Climate Change (GC3)

In September 2019, Governor Lamont launched the Governor's Council on Climate Change through Executive Order 3

Executive Order 3 Objectives

Two Objectives:

Monitor and report on the state's implementation of the **greenhouse gas emissions reduction strategies**

Develop and implement adaptation strategies to assess and prepare for the impacts of climate change

Mitigation reducing emissions of and stabilizing the levels of heat-trapping greenhouse gases in the atmosphere

Adaptation means adjustment in natural or human systems in anticipation of or response to a changing environment

Resilience means the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.

GC3 Structure

Governor's Council on Climate Change

Climate Change Mitigation Subcommittee

Climate Change Adaptation and Resiliency Subcommittee

Working Groups

- **Progress on Mitigation Strategies**

- **Equity and Environmental Justice**
- **Working and Natural Lands**
- **Science and Technology**

- **Financing Adaptation & Resilience**
- **Infrastructure and Land Use Adaptation**
- **Public Health and Safety**
- Assessing Vulnerabilities in State Assets & Operations

Two Phase GC3 Process

- *Phase 1* interim reports provided to the Governor with near term recommendations by **January 15, 2021**
- *Phase 2* final report and recommendations provided by **December 31, 2021**

Taking Action on Climate Change and Building a More Resilient Connecticut for All

GC3 Governor's Council on Climate Change

Phase 1 Report: Near-Term Actions
January 2021

The Impacts of Climate Change in Connecticut
Sea Level Rise, Precipitation, Temperature, and Storms

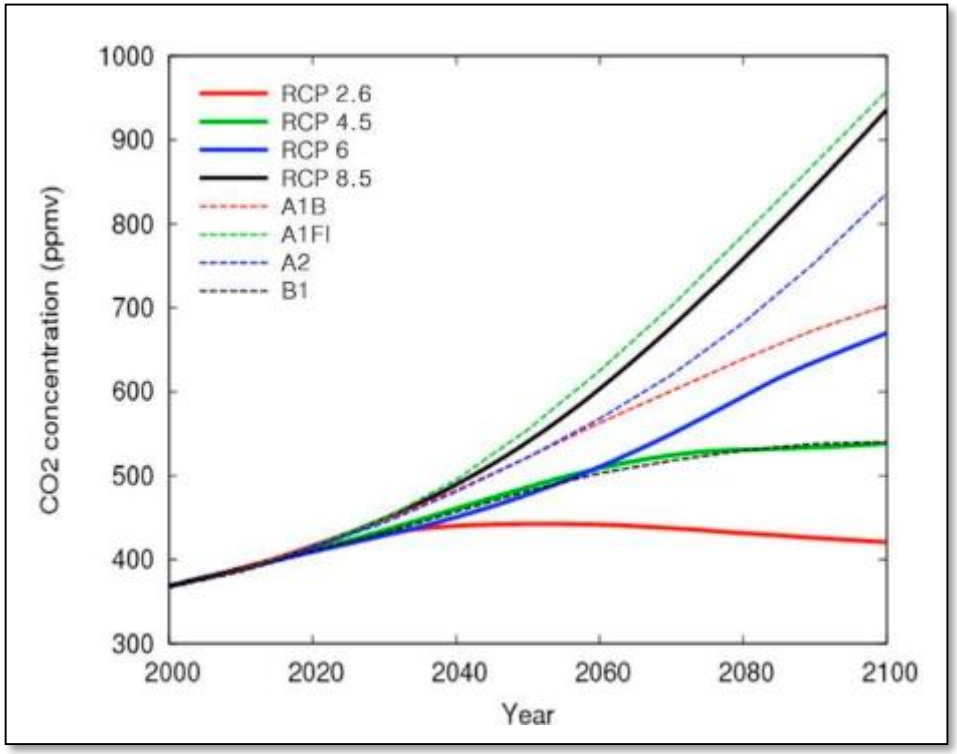
"Science and everyday life cannot and should not be separated."
~ Rosalind Franklin, Ph.D. (1920-1958)

The Impacts of Climate Change in Connecticut

There is high confidence in projected changes through the mid-century.
--***We have to adapt to these impacts***.

Projected changes after the mid-century will *depend* on mitigation actions taken in Connecticut and globally.
--***We have to mitigate: reduce emissions to avoid the worst outcomes of climate change.***

Since our understanding of the processes that determine climate is advancing rapidly, and data is being continuously collected, we recommend a comprehensive review of projections be undertaken by the State at five-year intervals.



IPCC AR-4 SRES and AR-5 RCP scenarios (Collier et al. 2011)

Mitigation vs. Adaptation & Resilience

Mitigation – Reducing emissions of and stabilizing the levels of heat-trapping greenhouse gases in the atmosphere

…Mitigation is imperative to prevent the worst effects of climate change from happening.

But climate change has already altered Connecticut's environment and we will experience the changes projected by the year 2050 even with mitigation. We must adapt and become more resilient to that new normal for our state.

Adaptation means adjustment in natural or human systems in anticipation of or response to a changing environment in a way that effectively uses beneficial opportunities or reduces negative effects

Resilience means the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.

… this is why Connecticut has a policy that we must plan for up to 2 feet of sea level rise, for example.

Sea Level

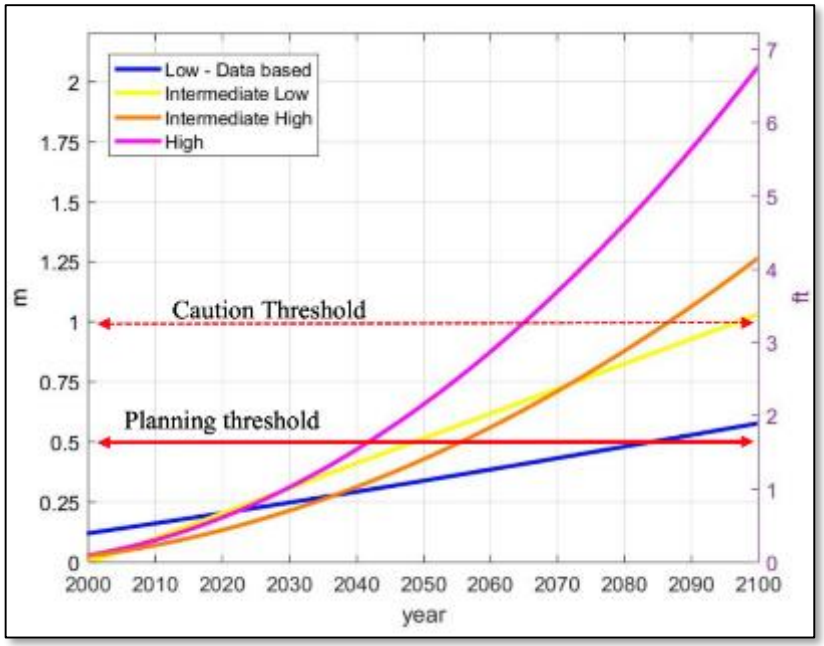
Mean sea level in Long Island Sound could be up to 20 inches above the National Tidal Datum Epoch (1983-2001) by 2050 (O'Donnell, 2018). This projection is not sensitive to future trends in carbon dioxide emissions.

Changes in mean sea level will significantly impact the frequency of flooding along the Connecticut coast, but the flood zone will not expand much in most areas.

With 20 inches of sea-level rise, coastal flood risk could increase by a factor of 5 to 10 with no change in storm conditions.

High water levels, like occurred during Superstorm Sandy, would then be expected every 5 to 10 years.

Sea level rise will continue after 2050. Recent simulations indicate that the mean sea level could be up to 80 inches higher by 2100 if CO_2 emissions are not reduced soon.



O'Donnell, 2019

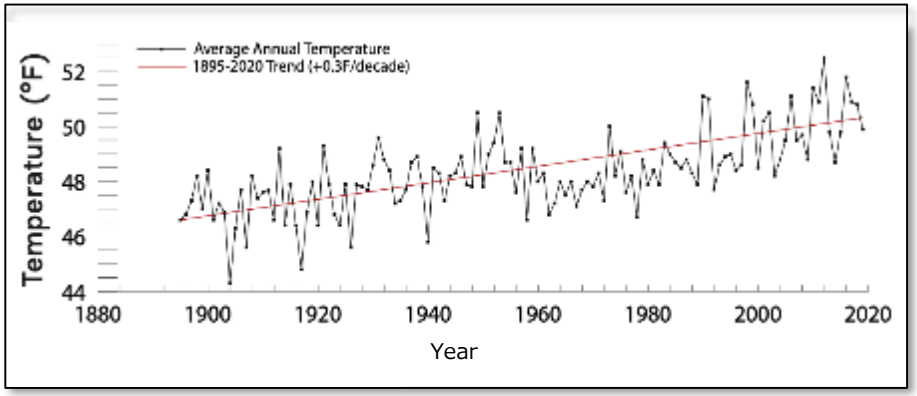
Temperature

Average temperatures in Connecticut could increase by 5˚F (2.7˚C) by 2050 compared to the 1970-1999 baseline. Connecticut's temperature has already risen more than the global average in part because temperature changes tend to increase in middle and high latitudes (towards polar regions). Consequently, a 2 ˚C target for global average temperature would result in a higher temperature (than 2 ˚C) in Connecticut.

All indices of hot weather are expected to shift toward more frequent and higher temperature events. For example, by mid-century, the number of days per year with temperatures above 90 ˚F (32 ˚C) could increase. Statewide, from 1970 to 1999, the average number of days was 5, and this is projected to increase to an average of 25 days between 2040-2069. The number of days with frost could decrease from 124 to 85.

Temperature projections after mid-century are sensitive to policy choices on carbon dioxide emissions.

Coordinated mitigation now means it is more likely that the temperature will stabilize after 2050. If not, warming is likely to accelerate.



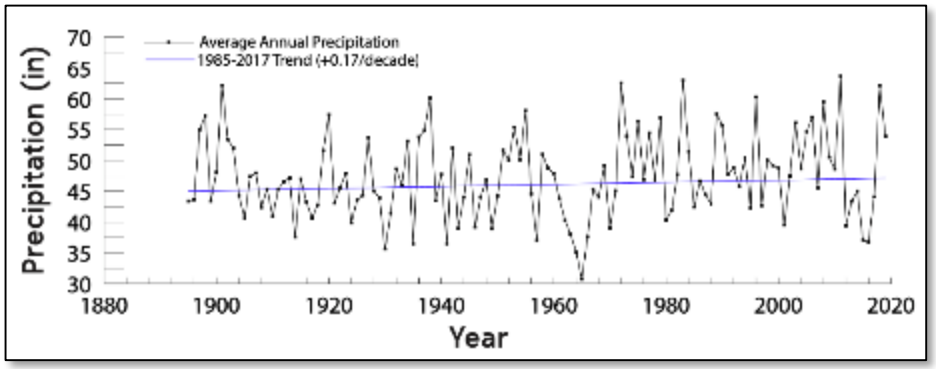
Seth et al., 2019

Precipitation & Storms

Drought risk is also expected to increase. The probability of unusual events (extremely low annual and summer water availability, and extremely high 1-day and 5-day precipitation) are projected to increase by a factor of between 2 and 4 by mid-century.

Though it is unclear whether the frequency or intensity of extratropical storms in Connecticut will change, they will likely bring more precipitation. In general, warmer temperatures will result in less snow and more rain, but increased humidity will yield high snowfall events when temperatures permit.

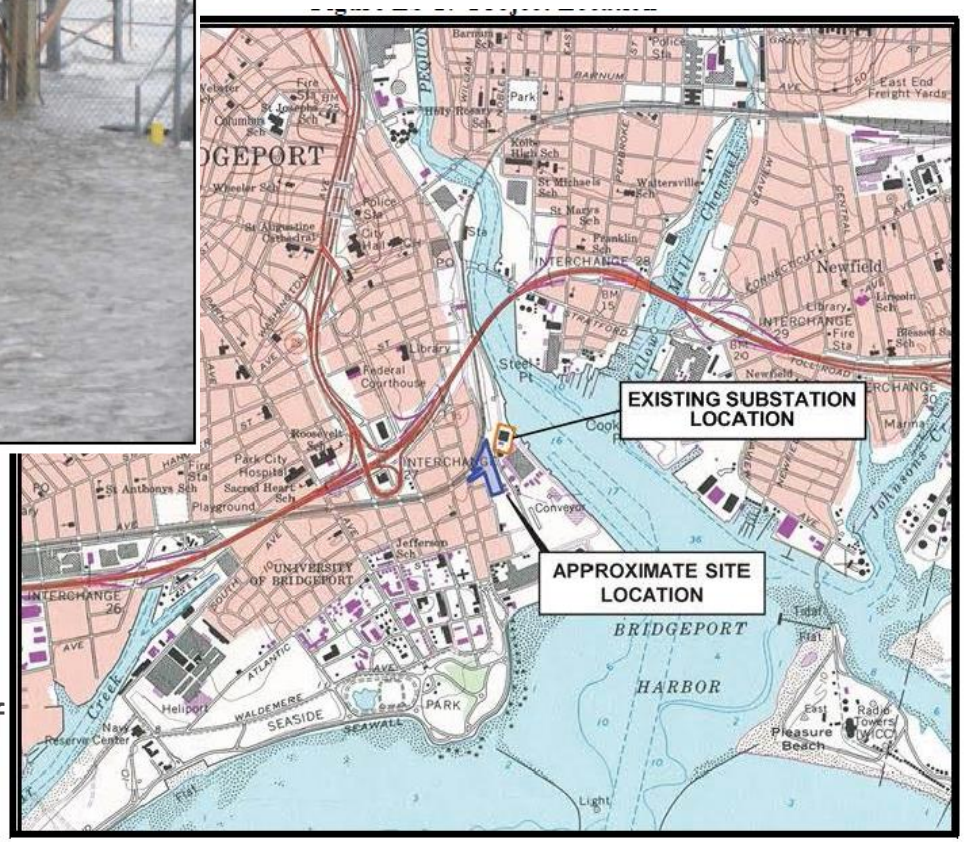
Projection of changes in the frequency of tropical cyclones in a warmer climate are uncertain. However, they will likely have stronger winds and more precipitation. Since 1980 there has been an increase in the frequency of hurricanes in category three or greater.



Seth et al., 2019

Connecticut's Vulnerability to Climate Change

Irene 2011



"After Tropical Storm Irene in 2011 and Hurricane Sandy in 2012, we had to temporarily de-energize several electrical substations to protect them from flood damage that could have left thousands of customers without electrical service for months." - UI

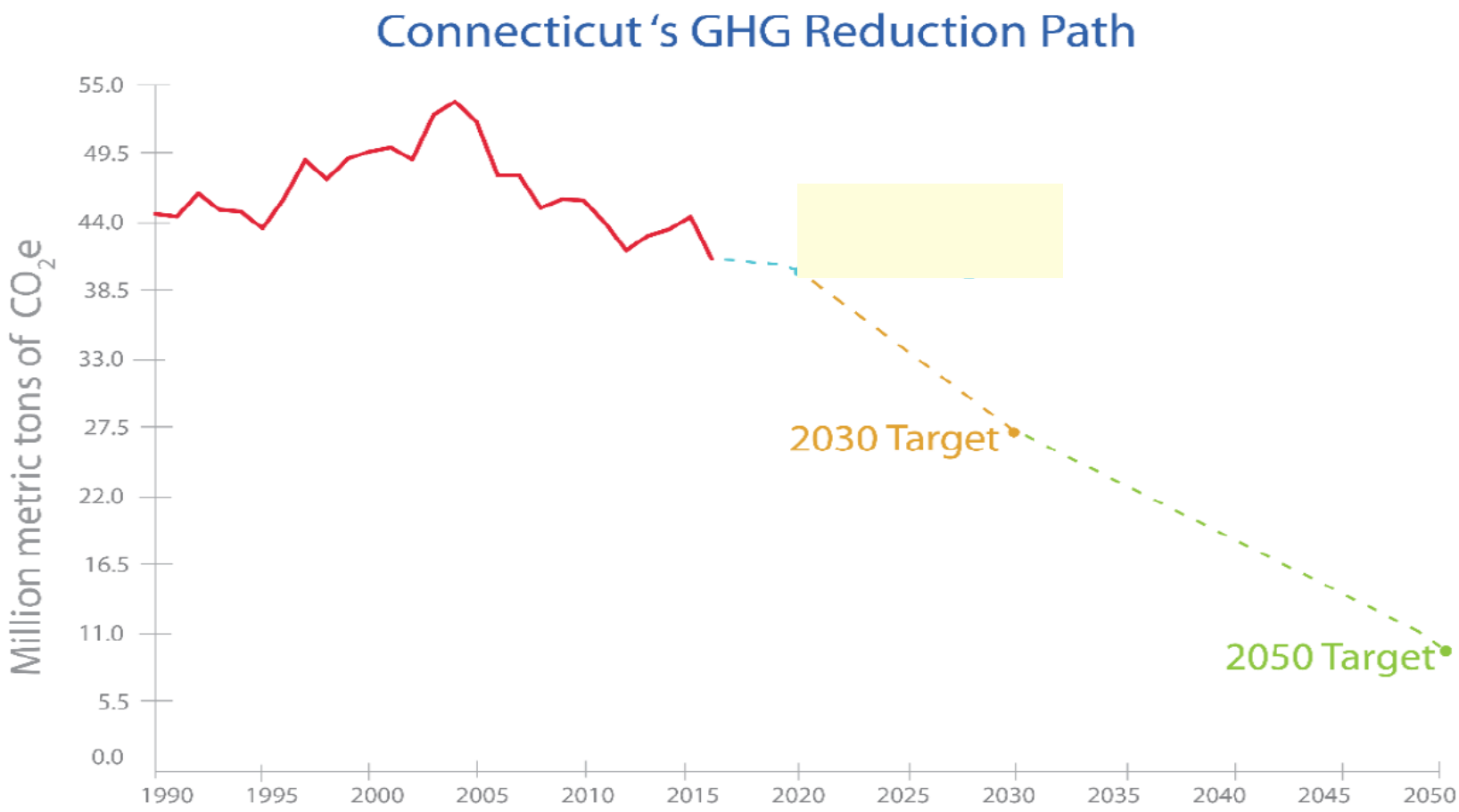
Hurricane Sandy 2012

Road Flooding in Connecticut

Heatwaves in Connecticut

Drought in Connecticut 2020

The Mitigation Path Forward



The Equity Lens of the GC3

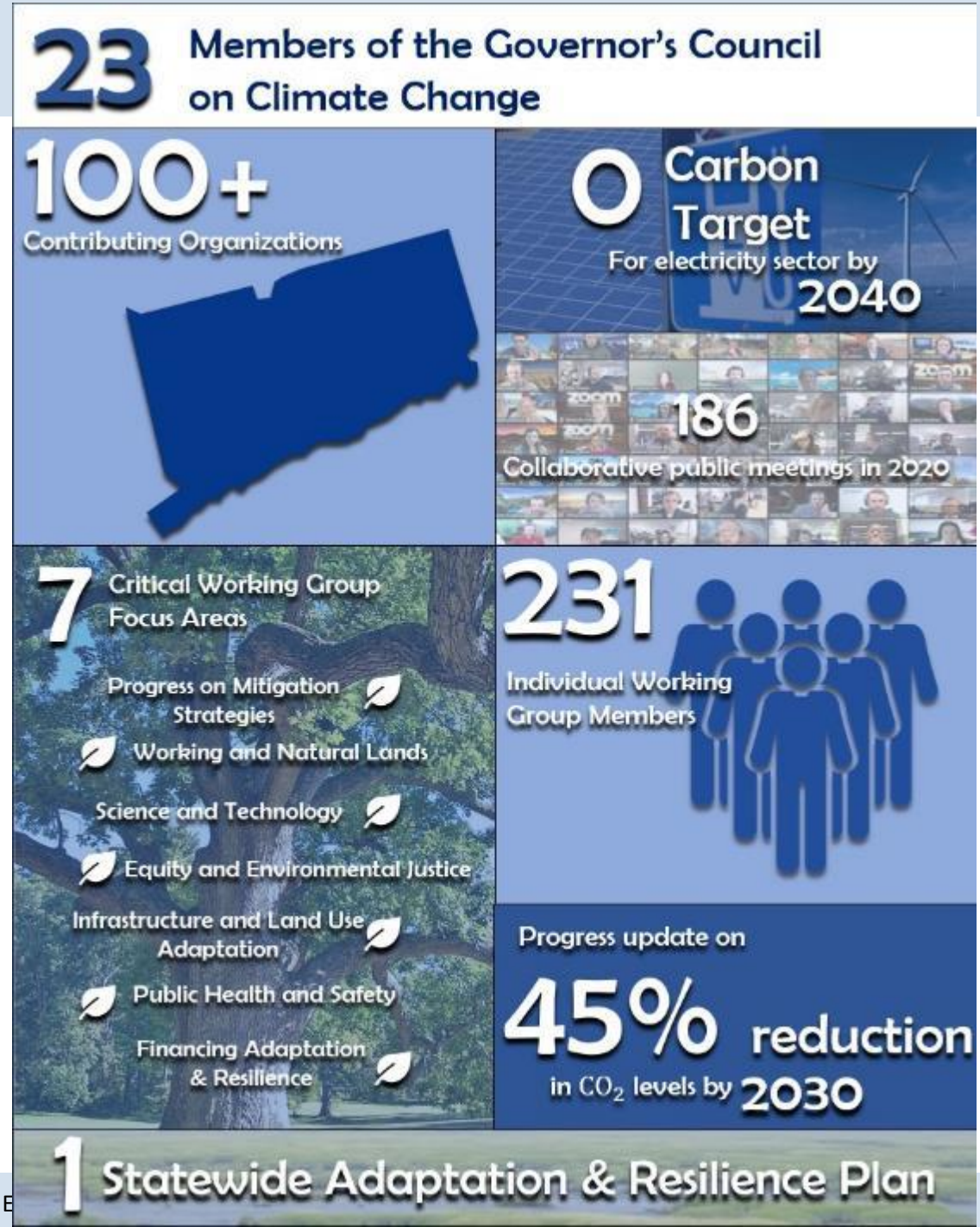
In order to ensure a truly effective response to climate change, the GC3 process must prioritize equity and environmental justice at every step.

Executive Order 3 required:

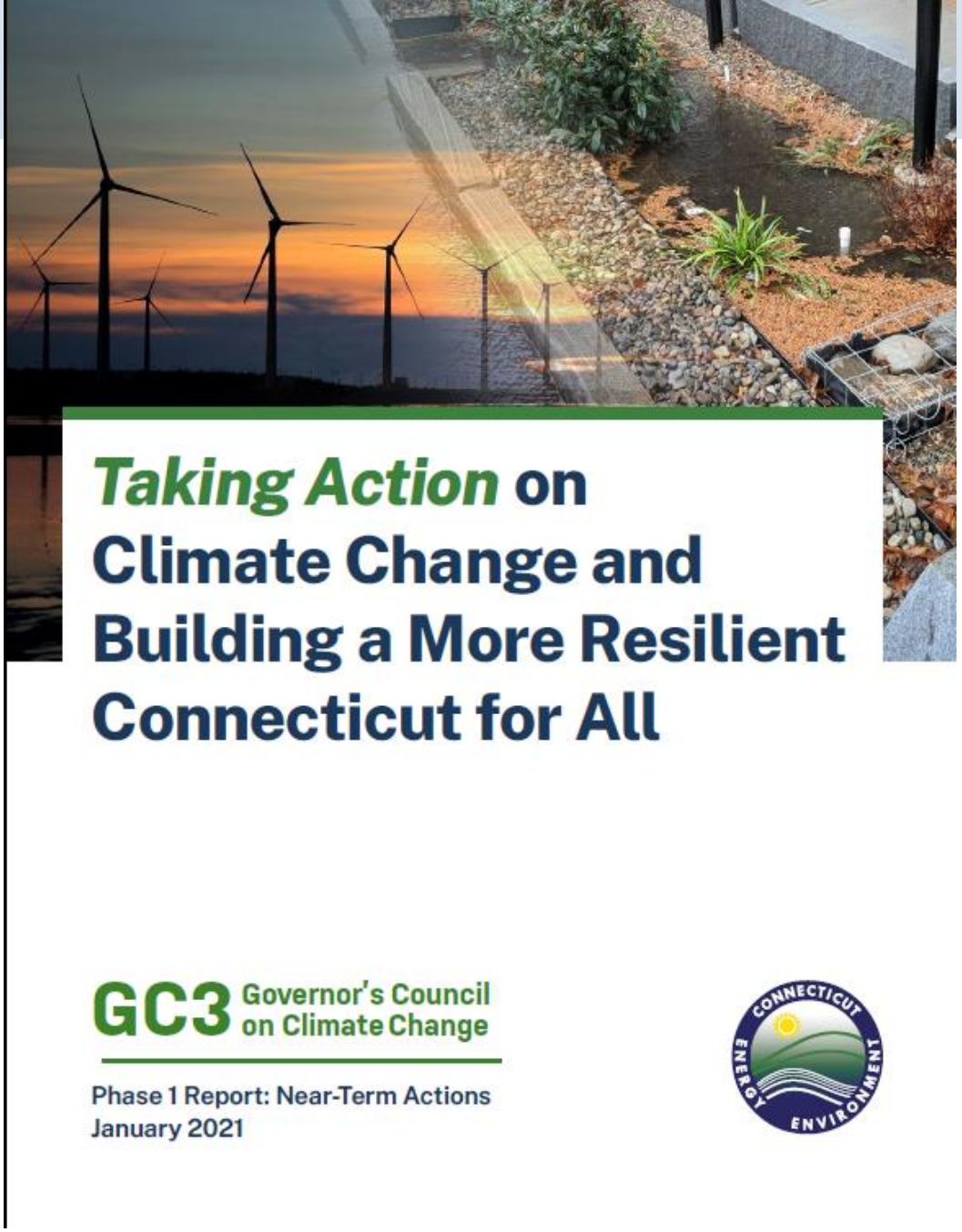
"prioritizing, integrating and advancing equitable distribution of the costs and benefits of climate change mitigation planning policies, specifically addressing disproportionate impacts of such strategies on environmental justice communities"

providing an Adaptation and Resilience Plan with **"recommended strategies to prioritize climate change adaptation efforts to protect vulnerable communities that may be disproportionately impacted by the effects of climate change."**

The GC3 created an Equity and Environmental Justice (EEJ) Working Group and charged them with developing a plan and guidelines for engaging diverse stakeholders in the process and working with the other Working Groups to evaluate recommended strategies through an equity lens.


23 Members of the Governor's Council on Climate Change
100+
Contributing Organizations
0 Carbon Target
For electricity sector by 2040
186
Collaborative public meetings in 2020
7 Critical Working Group Focus Areas
Progress on Mitigation Strategies
Working and Natural Lands
Science and Technology
Equity and Environmental Justice
Infrastructure and Land Use Adaptation
Public Health and Safety
Financing Adaptation & Resilience
231
Individual Working Group Members
Progress update on
45% reduction
in CO_2 levels by 2030
1 Statewide Adaptation & Resilience Plan

The Phase 1 Report, *"Taking Action on Climate Change and Building a More Resilient Connecticut for All,"* has 61 recommendations that include near term actions to:



Equity and Environmental Justice

- **Prioritize mitigation and adaptation strategies in vulnerable communities that will feel the impacts of climate change first and worst through:**
  - **launching a statewide environmental justice mapping tool and**
  - **focusing planning resources in those communities, including developing and implementing a no less than 40% equity funding and/or benefit commitment.**

Progress on Mitigation Strategies

Protect and harness energy efficiency funds to improve building heating and cooling and move to decarbonize our buildings sector.

Achieve a zero-carbon electric grid by 2040 through increased use of solar, wind, battery storage and a smarter and more responsive grid, while creating green jobs.

Progress on Mitigation Strategies

Reduce emissions from methane and hydrofluorocarbons and promote mitigation strategies in planning and materials management.

Move toward a decarbonized transportation sector through implementing the Transportation and Climate Initiative program, putting electric vehicles (EVs) and EV infrastructure on the road, and advance initiatives to reduce vehicles miles traveled.

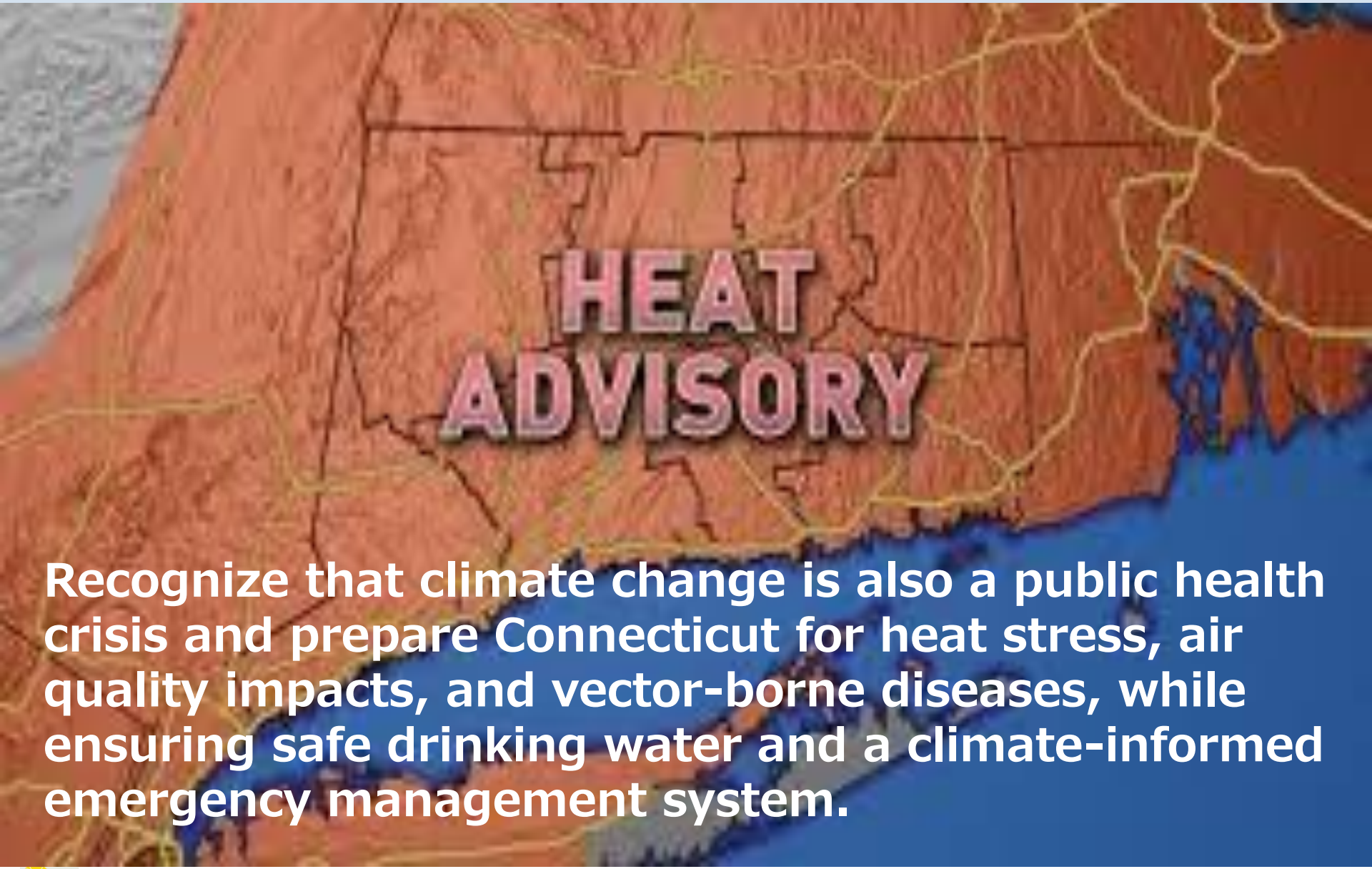
Working and Natural Lands

- **Harness the power of nature-based solutions to: 1) adapt and make Connecticut's vulnerable communities more resilient to the impacts of sea level rise, coastal and riverine flooding, and drought, while creating and enhancing ecosystem services and 2) move the state to net zero emissions through carbon sequestration and storage in forests, wetlands, and agricultural landscapes.**

Infrastructure and Land Use Adaptation

Build back better with resilient and sustainable infrastructure and land use, informed by the best available science and engineering standards.

Public Health and Safety Adaptation

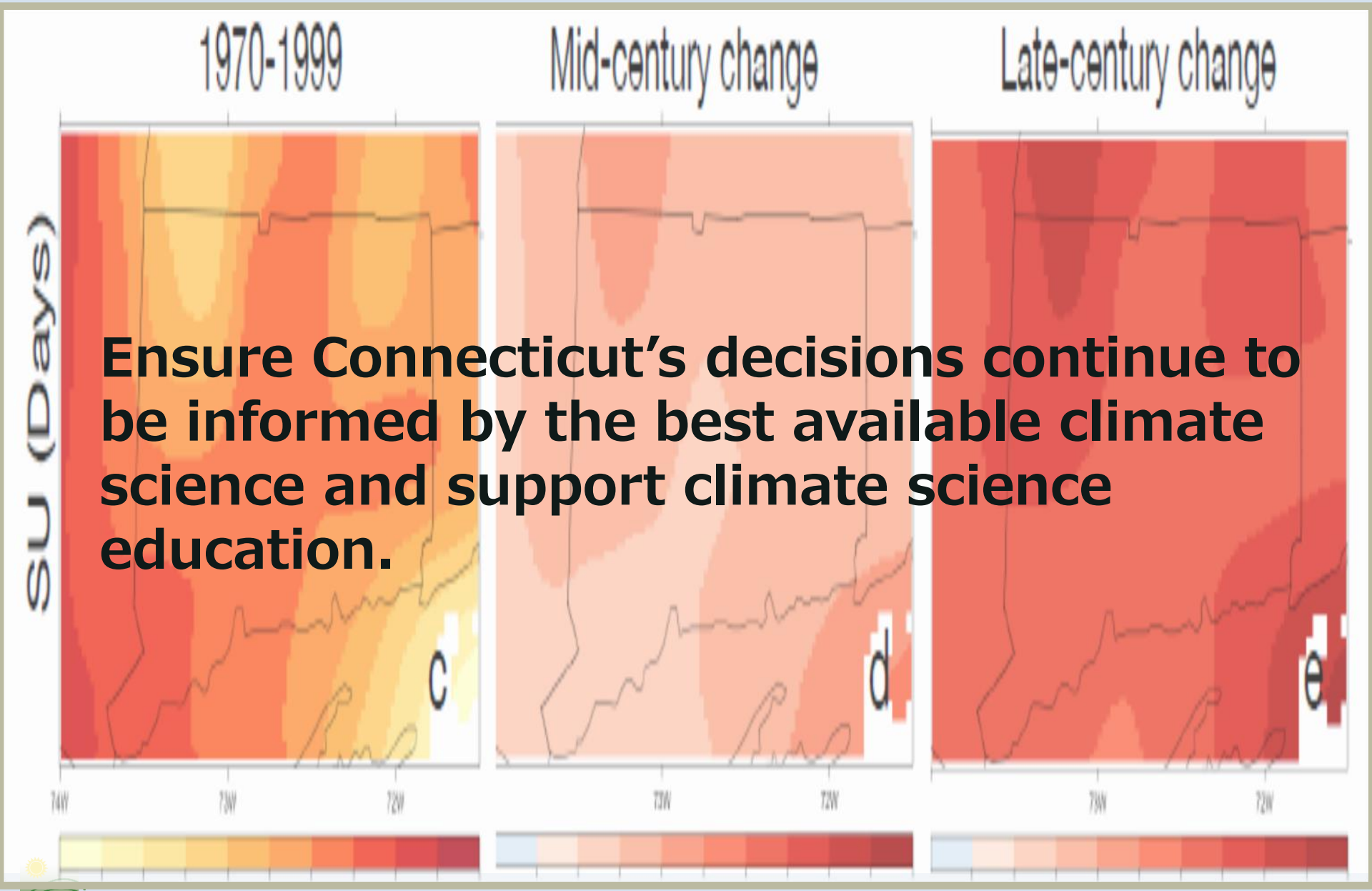


Recognize that climate change is also a public health crisis and prepare Connecticut for heat stress, air quality impacts, and vector-borne diseases, while ensuring safe drinking water and a climate-informed emergency management system.

Financing and Funding Adaptation and Resilience

Leverage federal, state, and municipal funding sources to implement adaptation and resilience projects while building new financing mechanisms, including the creation of resilience authorities, stormwater utilities, and an environmental infrastructure bank.

Science & Technology



Ensure Connecticut's decisions continue to be informed by the best available climate science and support climate science education.

Measuring Success

- Office of Climate Planning will assess progress towards all 61 recommendations on a quarterly basis through December 31, 2021.
- Initial assessment of actions will be shared today.
- Will set up a dashboard to track and show progress.
- At a minimum, state agencies will report on actions under each recommendation.

Phase Two of the GC3 Process

Phase 2. By December 31, 2021, provide the Governor with a final report of the Governor's Council on Climate Change, including:

- A robust public participation and engagement process specifically targeting feedback from environmental justice communities.
- Phase 2 Mitigation Update: An annual update to the recommendations for mitigation strategies from the January 15, 2021 interim report, incorporating additional feedback from the public participation process.
- Phase 2 Adaptation & Resilience Plan: The development of a strategic statewide Adaptation and Resilience Plan that is informed by:
  - The public participation process
  - Continued revision and refinement of the Phase 1 Working Group reports
  - The vulnerability assessment and inventory of vulnerable assets prepared by state agencies called for in EO3
  - The incorporation and alignment of climate adaptation strategies into state agency planning and process documents as required to be completed by December 31, 2021 in EO3.

Incorporating Adaptation in State Agency Plans

Establish a framework, in consultation with the state's Chief Data Officer and in coordination with CIRCA's ongoing vulnerability assessment, for state agencies to compile and maintain an inventory of vulnerable assets and operations

Compile a comprehensive State Agency Climate Change Adaptation and Resiliency report on the alignment of climate change adaptation strategies incorporated into each state agency's relevant planning processes and documents, including, but not limited to:

i. The Integrated Resources Plan
ii. Forest Action Plan
iii. Wildlife Action Plan
iv. Green Plan
v. State Water Plan
vi. Coordinating Water Systems
vii. Statewide Natural Hazard Mitigation Plan
viii. State Building Code
ix. State Plan of Conservation and Development
x. Housing and Community Development Plan
xi. Five-Year Capital Program for All Modes of Transportation