

Governor's Council on Climate Change Legislative Update May 10, 2021

Connecticut Department of Energy and Environmental Protection





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





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

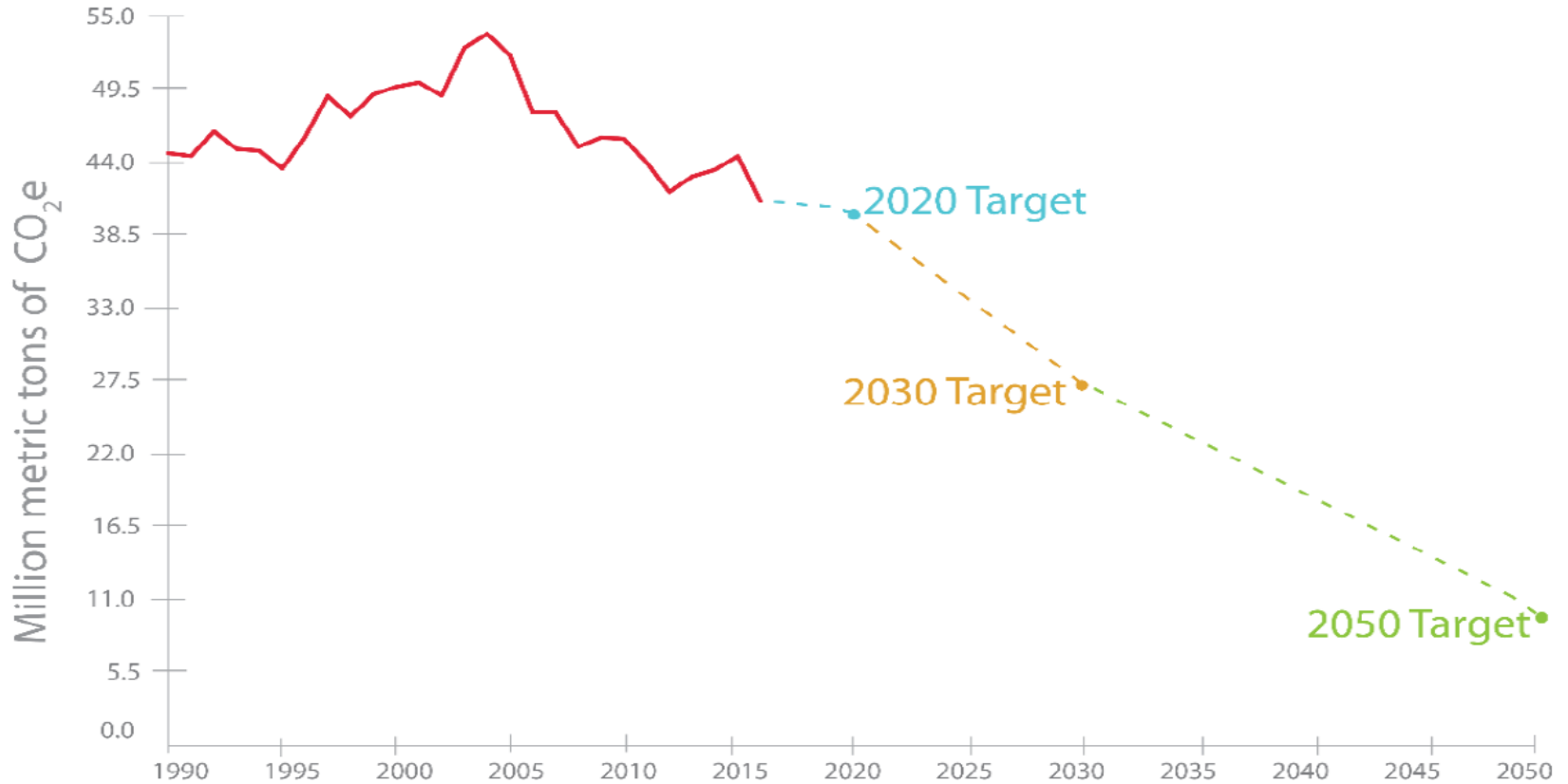
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Climate Mitigation

Connecticut's GHG Reduction Path



SB 884 AAC Transportation-related Carbon Emissions

A Clean Transportation Future for Connecticut

TCI-P would reduce on-road transportation GHG emissions by 26% between 2023 to 2032




- ➔ Climate Change is here and now; CT is on track for 5X increase in 90°+ days by 2050
- ➔ Transportation is the largest source of GHGs, particulate pollution and smog
- ➔ Transportation emissions can increase risk of premature death, asthma, cardiovascular damage, and developmental and reproductive harm
- ➔ Harmful emissions disproportionately impact disadvantaged communities located along transportation corridors

- ➔ Proven concept of a regional market-based program to reduce CO₂ emissions from gasoline and on-road diesel
- ➔ Declining cap guarantees 26% reduction in CO₂ from on-road transportation from 2022 to 2032
- ➔ Allowance market incentivizes innovation and cost-effective emissions reductions
- ➔ TCI-P furthers multiple policy goals at least cost to consumers and businesses

- ➔ Reduce emissions and pollution, mitigate climate change impacts, improve public health, and promote more equitable economic development
- ➔ Invest \$1 billion in clean transportation solutions between 2023 and 2032
- ➔ More than 50% of investments to benefit overburdened, underserved communities
- ➔ Investments will modernize the transportation system, create new trails and active transport infrastructure, accelerate bus, car, and truck electrification, and improve broadband as just a few examples

TCI-P Transportation and Climate Initiative Program



Governor's Bill. AAC Climate Change Mitigation and Home Energy Affordability (SB 882) (Executive Order 3, GC3 #5a, #8c, #12e, #12f)

- Codifying the zero-carbon energy supply by 2040 goal in statute and requiring renters to provide energy use information on their properties with the option for homeowners to also disclose this information.

Equity and Environmental Justice

- AAC Establishing an Energy Efficient Retrofit Grant Program for Affordable Housing ([SB 356](#))
 - award grants for installing energy efficient upgrades to affordable housing, including housing authority property, and
 - set goals for upgrades to affordable housing units, from 2021 to 2025.
- (GC3 #3, #7c)



Equity and Environmental Justice

- An Act Increasing Representation on the Energy Conservation Management Board ([SB 856](#))
 - To increase representation on the energy conservation management board, including low-income residential customers and municipalities.
 - (GC3 #3, #7a, #7g)



Progress on Mitigation Strategies

- AAC The Establishment of Energy Use Building Standards for Voluntary Adoption (HB 6572)
 - Allows municipalities to establish a requirement that new or substantially renovated buildings over 40,000 square feet demonstrate that they use at least 10% per square foot less energy than maximum levels permitted under the state building code (i.e., a “stretch code”). (GC3 #7d)

Progress on Mitigation Strategies

AAC Workforce Development (SB 881)

- Establishes an Office of Workforce Strategy that can assist the state with clean energy-related workforce development.
- (GC3 #10)

Progress on Mitigation Strategies

AAC Emission Standards for Medium and Heavy Duty Vehicles (SB 931)

- The bill requires the Department of Energy and Environmental Protection commissioner, by December 31, 2021, to assess the energy, environmental, and air quality impacts of adopting California's medium- and heavy-duty vehicle standards in Connecticut.
- (GC3 #16c, #22a, #22b)

Progress on Mitigation Strategies

- AAC Equitable Access to Broadband (HB 6442)
 - To promote broadband build-out in unserved and underserved areas through mapping and restoring statutory mandates, to streamline costly deployment processes, and to give the Public Utilities Regulatory Authority (PURA) additional authority to protect consumers.
 - (GC3 #20f)

Working and Natural Lands

AAC the Solicitation of Biogas Injection Proposals from Anaerobic Digestion Facilities (HB 6409)

- Allows DEEP to solicit proposals from anaerobic digestion facilities to make biogas suitable for injecting into the state's natural gas distribution system.
- GC3 (#42a, #42e)

Climate Adaptation and Resilience



HB 6441 AAC Climate Change Adaptation



Working and Natural Lands

- AAC Enhancements to Certain Agricultural Programs (HB 6385)
- Includes urban and nontraditional farming practices as indicated purposes for the Department of Agriculture's transition and viability grants.
- GC3 (#41b)



Infrastructure and Land Use Adaptation

AAC Geographic Information Systems (HB 6647)

- Establishes a (1) Geographic Information Officer position to oversee a new Geographic Information Systems Office, and its staff, within the Office of Policy Management (OPM) and (2) Geographic Information Systems Advisory Council (GIS Council) to consult with OPM on geographic information system (GIS) matters.

AAC the State Treasurer and Climate Change and Coastal Resiliency Reserve Funds (SB 971)

- Expands the options municipalities have to invest climate change and coastal resiliency reserve fund assets by allowing them to invest in any trust fund the state treasurer holds, administers, or invests.
- (GC3 #56e)

AAC The Commercial Property Assessed Clean Energy Program (HB 6571)

- This bill expands eligibility for the Green Bank's Commercial Property Assessed Clean Energy Program (C-PACE) by allowing the program to finance, for qualifying commercial real property, the installation of (1) zero-emission vehicle refueling infrastructure and (2) resilience improvements.
- (GC3 #21a, #56f)

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



An Act Concerning Transportation- Related Carbon Emissions SB884



Transportation and Climate Initiative Program

Reducing Transportation Emissions and Investing in Communities

Cap and reduce greenhouse gas (GHG) emissions and other harmful pollutants from transportation

Generate revenue to **decarbonize and modernize** transportation and create new economic opportunity

Invest in overburdened and underserved communities and create **healthier places to live**

81% of voters say it's important for the state to reduce climate pollution, and to **increase clean public transportation options**



2 out of 3 voters support the Transportation & Climate Initiative



38%



Motor vehicles are the largest source of GHG emissions in Connecticut (38%) and the region

29%



Governor's Council on Climate Change found transportation emissions **must be reduced 29% below 2014 levels by 2030** to meet state climate goals

O₃

PM_{2.5}

Connecticut records some of the highest levels of air pollution in the region, especially along corridors

Transportation and Climate Initiative Program (TCI-P) is a multistate initiative to cap and reduce carbon emissions from transportation and invest in an equitable, cleaner, and more resilient transportation system. TCI would work by placing a declining "cap" on carbon pollution from gasoline and on-road diesel and require fuel suppliers to purchase "allowances" to cover the carbon content of their fuel. Allowance auctions would generate revenue to reinvest in clean transportation options and infrastructure, with a focus on communities overburdened by air pollution and underserved by the existing transportation system.



An Act Concerning Climate Change Adaptation HB6441



An Act Concerning Climate Change Adaptation

- Authorizing municipalities the option to create stormwater authorities to address more frequent flooding and pollution.
- Enabling municipalities the option to adopt a conveyance fee to support adaptation, mitigation and resilience projects.
- Adding flood prevention and climate resilience to the purview of municipal flood and erosion control boards and clarifying they can use their existing special assessment authorization to cover operations and maintenance costs.
- Expanding the Green Bank to include an Environmental Infrastructure Fund to finance adaptation and resilience projects.



An Act Concerning Climate Change Adaptation

Enabling municipalities to have the option to adopt a conveyance fee

Authorizes municipalities the option to adopt a conveyance fee that can be used by all municipalities** in Connecticut for:

- stewardship of open space land including, but not limited to, water resources, forest land and farmland
- funding of a Climate Change and Coastal Resiliency Reserve Fund, created by the municipality pursuant to section 7-159d of the general statutes, as amended by this act
- municipal climate resilience, mitigation or adaptation strategies
- matching of investments from state programs to supplement new or existing affordable housing programs funded pursuant to section 4-66aa (a)(3) of the general statutes
- funding of other environmental projects, including, but not limited to, urban forestry and planting of trees
- repayment of municipal bonds obtained for any of the purposes described above

** municipalities in compliance with 8-30g or distressed municipalities can *also* use these funds for land acquisition related to the above activities



An Act Concerning Climate Change Adaptation

The fee is structured progressively, ranging from a maximum of 0.5% to 1.5% depending on the amount of the consideration paid by the buyer.

- For purchases equal to or less than \$800,000, the fee is not more than .5% on the portion of the purchase price that exceeds \$150,000.
- For purchases greater than \$800,000 but equal to or less than \$2.5 million, the fee is not more than 1% on the portion of the purchase price that exceeds \$800,000.
- For purchases greater than \$2.5 million, the fee is not more than 1.5% on the portion of the purchase price that exceeds \$2.5 million.
- The fee percentages are maximums. A municipality can adjust the fee percentage to meet the needs of their community. They could also increase the amount of the purchase price not subject to the fee (e.g. increase the first \$150,000 exemption from fee)



An Act Concerning Climate Mitigation and Home Energy Affordability SB882



Codify the Zero Carbon Electric Grid by 2040

- Proposal codifies into statute the goal of a zero carbon electric grid by 2040
 - already in Executive Order No. 3 and included as a recommendation in the [Draft Integrated Resource Plan \(IRP\)](#).



Home Energy Affordability

- Proposal requires property owners listing homes for sale or lease to provide prospective buyers and tenants with:
 - A **Home Energy Label** – a number generated during a home energy audit that summarizes the property's energy efficiency – or
 - The last twelve months of energy bills, which energy companies will begin disclosing.



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)



Sea Level

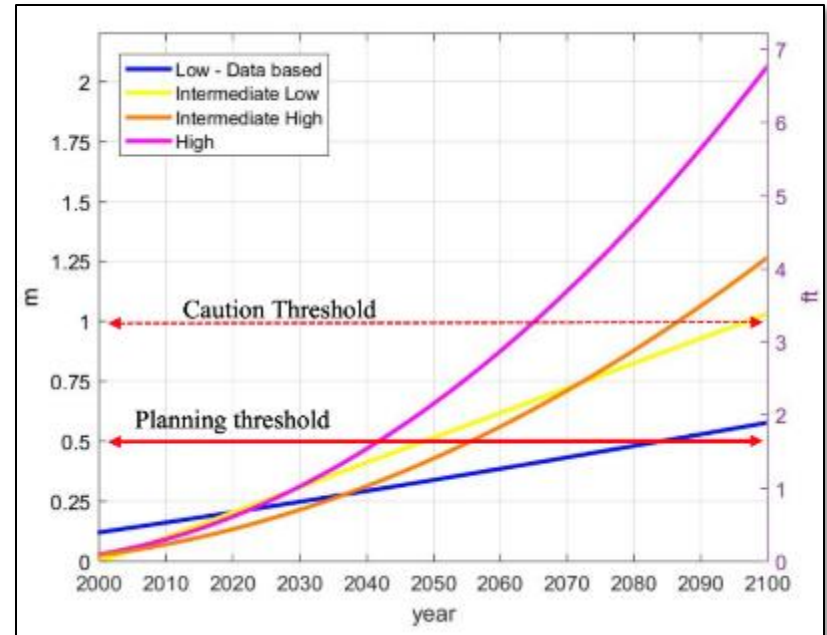
Mean sea level in Long Island Sound could be up to 20 inches above the National Tidal Datum Epoch (1983-2001) by 2050 (O'Donnell, 2018). This projection is not sensitive to future trends in carbon dioxide emissions.

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 CO₂ emissions are not reduced soon.



O'Donnell, 2019

Temperature

Average temperatures in Connecticut could increase by 5°F (2.7°C) by 2050

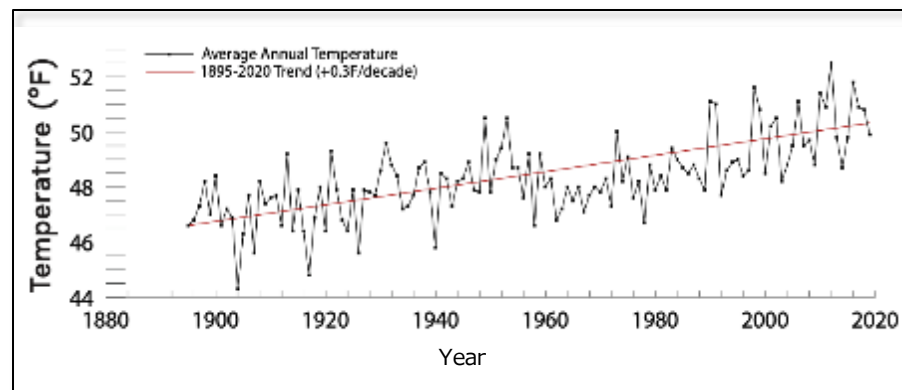
compared to the 1970-1999 baseline. Connecticut's temperature has already risen more than the global average in part because temperature changes tend to increase in middle and high latitudes (towards polar regions). Consequently, a 2 °C target for global average temperature would result in a higher temperature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

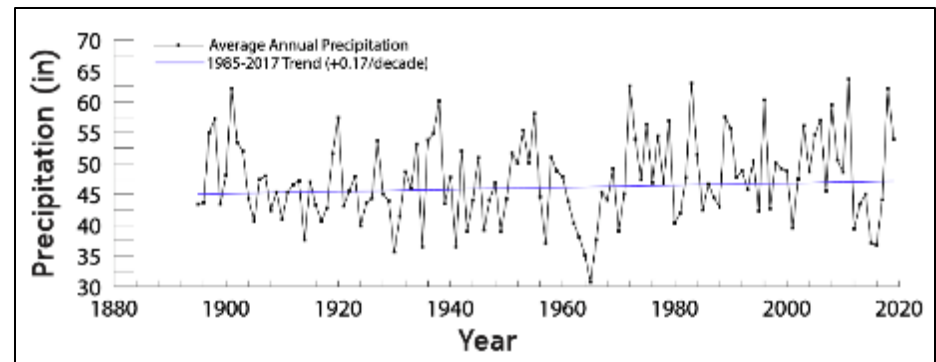
The probability of unusual events (extremely low annual and summer water availability, and extremely high 1-day and 5-day precipitation) are projected to increase by a factor of between 2 and 4 by mid-century.

Though it is unclear whether the frequency or intensity of extratropical storms [winter 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 [hurricanes] 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

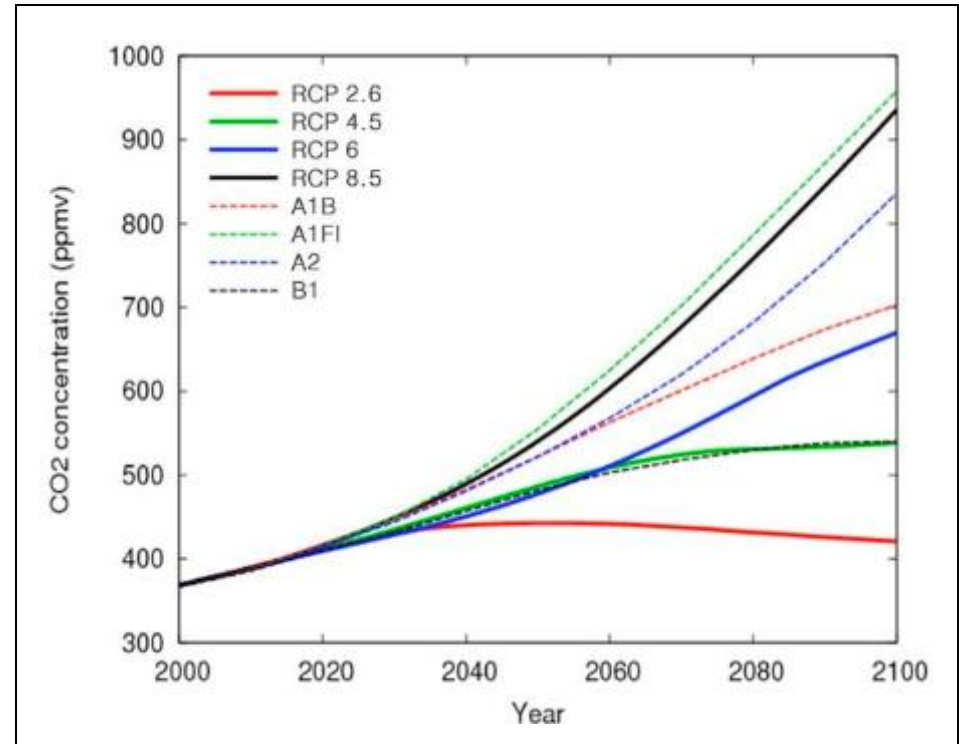
The Impacts of Climate Change in Connecticut

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.



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