

Climate Change Planning in Rhode Island

Rachel Calabro

**Rhode Island Department of Environmental
Management**

Office of the Director

401-537-4163

Rachel.Calabro@dem.ri.gov

Take a quick
[survey!](#)

March 2025



Closed Caption (CC)

Translated Closed Caption (CC) Available *Acceso a subtítulos traducidos*



- + Click on Closed Caption “CC” icon
- + Set “Speaking Language”
- + Set “Caption Language”

Para Español:

- + Haz clic en el icóno “CC” para los subtítulos
- + Haz clic en “My speaking language” y selecciona “Spanish”
- + Haz clic en “My caption language” y selecciona “Spanish”

Captions

Caption language: English >

View full transcript

Caption settings

Host controls

Set up manual captioner >

Host caption control settings

Ground Rules for Participation



- This session is being recorded so we can accurately capture our conversation tonight. We do intend to post this recording publicly for the benefit of others.
- Please mute yourself to limit distractions.
- Make space and take space. Be mindful of how much airtime you take, but we encourage you to voice your thoughts.
- There are multiple ways to participate after the presentation:
 - Raise your hand to be called on
 - Use the chat feature
- Thank you in advance for your participation.

Note: For your convenience, throughout the presentation resources & important links will be dropped into the chat!

Impacts of RI's Changing Climate



- **HEAT:** 2014 through 2024 are the world's 10 warmest years so far. 2024 was 3.5 °F above the 20th century average. The average temperature in Providence is up 2°F since the 1930s.
 - Urban heat islands
 - Rising utility bills (cooling)
 - Respiratory problems/asthma
- **PRECIPITATION:** Rhode Island receives almost 10 more inches of rain a year now than in the 1930s. 2018 had a record 22 days with over an inch of precipitation
 - Flooding/stormwater
 - Infrastructure damage (homes, roads, transportation)
 - Business interruptions
- **RISING SEAS:** Sea level rise is accelerating in Rhode Island and globally, putting infrastructure and people at risk (up over 11 inches at the Newport tide station since 1930).
 - Flooded coastal neighborhoods
 - Flooded infrastructure (wastewater facilities, roads, homes, ports, etc.)
- **WARMING WATER:** The surface temperature of Narr. Bay is up 3°F from 1960-2023. The last 5 years (2018-22) are the hottest for world upper ocean heat.
 - Algal blooms
 - Species composition changing

Impacts of RI's Changing Climate



Asthma, allergies, and other respiratory illness from increasing allergens/air pollution



More mosquito-borne and tick-borne illnesses related to changes in ecology



Injuries and fatalities due to severe/extreme weather and flooding



Increased levels of water-borne diseases and harmful algal blooms



Impacts on food supply and access to clean water due to extreme weather and droughts



Increased levels of anxiety, post-traumatic stress disorder (PTSD), and other long-term mental health effects

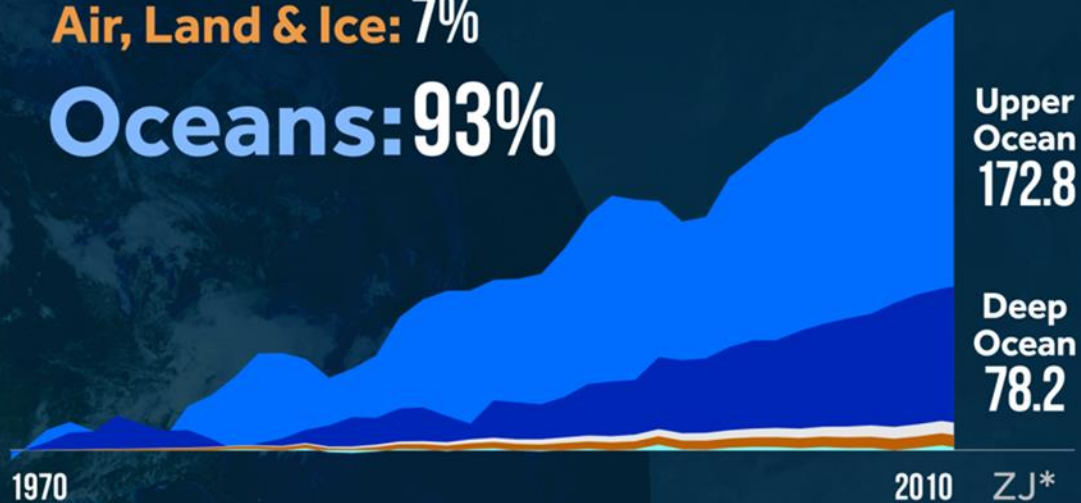
Rising temperatures could increase heat-related illness and death

Where's the Heat?

Earth's Accumulated Energy

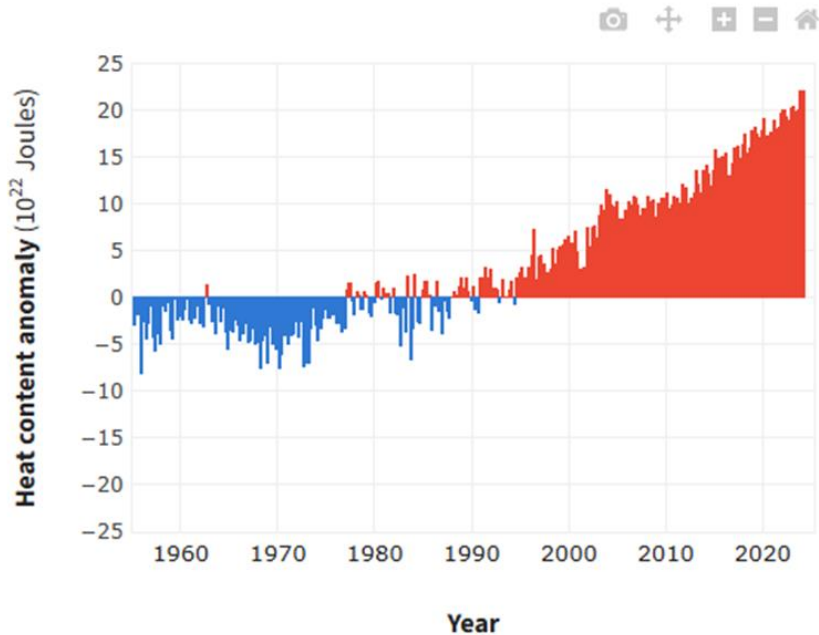
Air, Land & Ice: 7%

Oceans: 93%



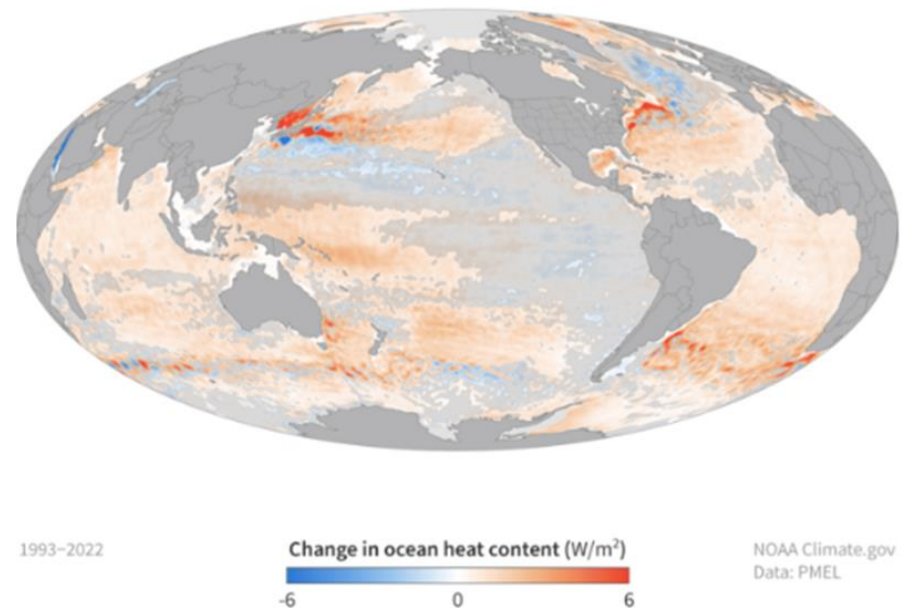
*Accumulated Heat Energy Measured in Zettajoules
Source: Climate Change 2013: The Physical Science Basis (IPCC) Chapter 3

OCEAN HEAT COMPARED TO AVERAGE



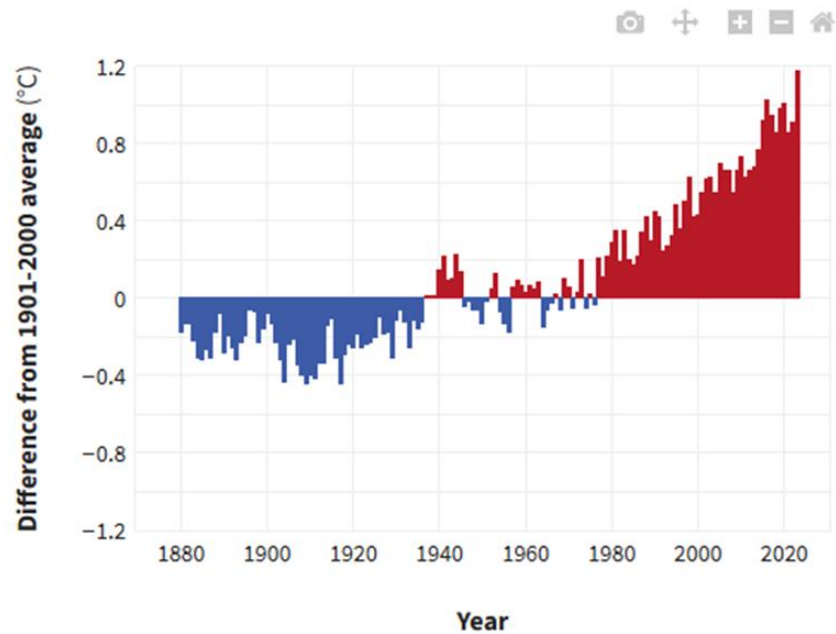
Seasonal heat content in the top half-mile of the ocean compared to the 1955-2006 average. Heat content in the global ocean has been above-average (red bars) since the mid-1990s. Graph by NOAA Climate.gov, based on data from NOAA NCEI.

OCEAN HEAT TRENDS (1993-2022)



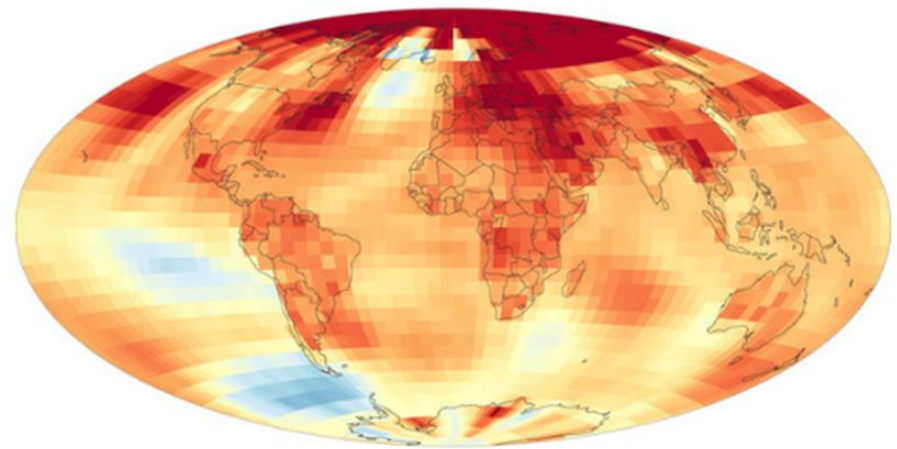
Change in heat content in the upper 2,300 feet of the ocean from 1993-2022. Most places have gained heat (orange). Shading indicates changes were smaller than the range of natural variability. NOAA Climate.gov image, based on data from John Lyman.

GLOBAL AVERAGE SURFACE TEMPERATURE



Yearly global temperatures from 1880-2023 compared to the twentieth-century average. Earth's surface temperature has risen 0.14 degrees F per decade since 1880. The rate of warming has more than doubled since 1981. Data from NOAA NCEI.

RECENT TEMPERATURE TRENDS (1994-2023)



1994-2023

Change in temperature (°F/decade)



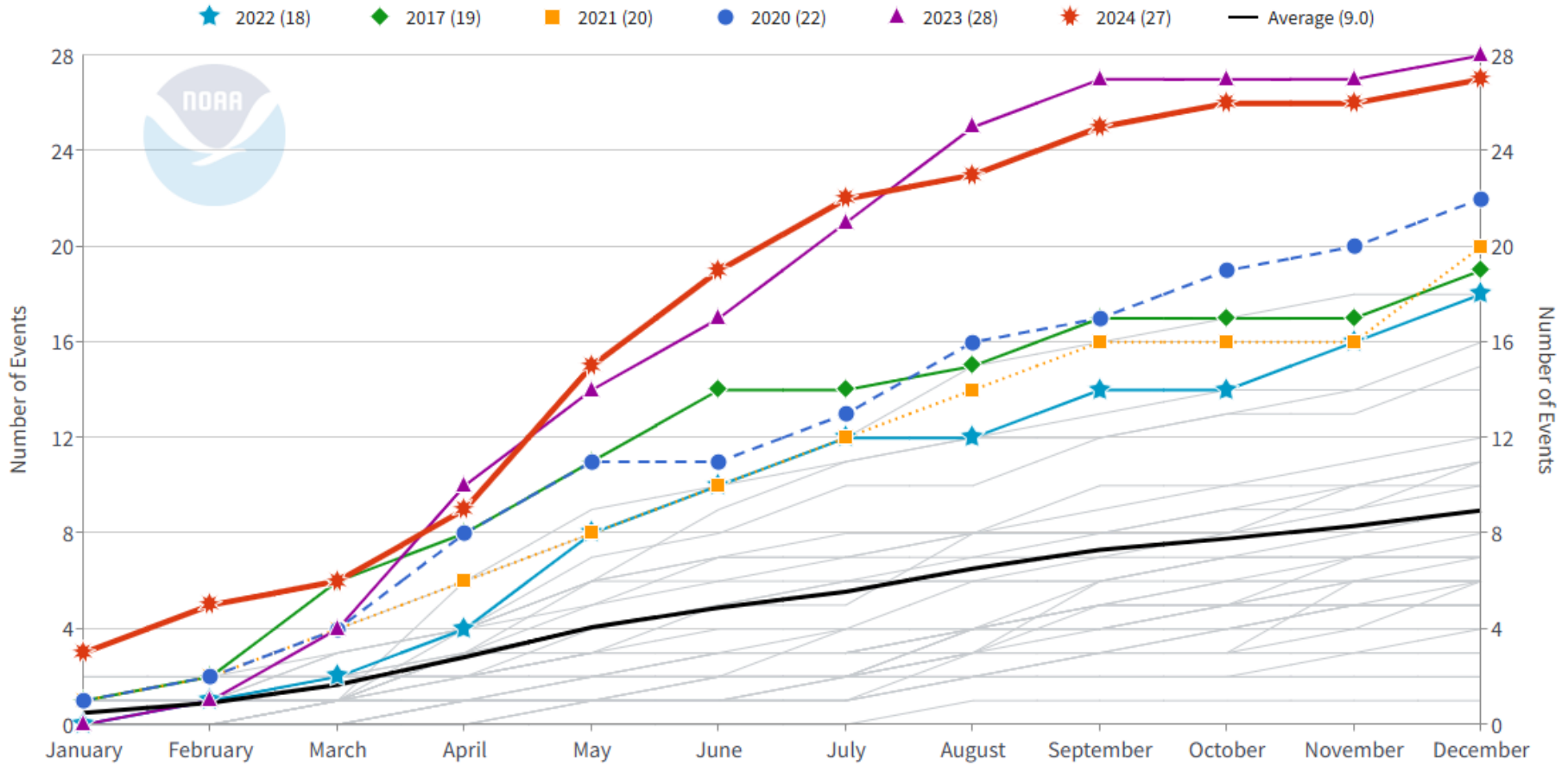
NOAA Climate.gov
Data: NCEI

Trends in average surface temperature from 1994-2023. Overall, land areas warmed faster than oceans. The most extreme warming (darkest red) was in the northern high latitudes, and parts of Eurasia and the Middle East. Data from NOAA NCEI.

Billion Dollar Disasters



1980-2024 United States Billion-Dollar Disaster Year-to-Date Event Count (CPI-Adjusted)



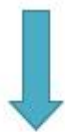
Updated: January 10, 2025

Event statistics are added according to the date on which they ended. Powered by ZingChart

Executive Climate Change Coordinating Council (EC4)



RIEC⁴



Ensures RI will take bold
action to reduce pollution,
promote clean energy, and
improve public health



STATE OF RHODE ISLAND
OFFICE OF
ENERGY RESOURCES



EC4 Spending Plans



- EC4 was provided with a \$3M budget for FY2024 and a \$1.5M budget for FY2025; annual funding set in statute
- Funding continues to come from robust Regional Greenhouse Gas Initiative (RGGI) auction proceeds
- Agencies submitted project proposals in August –
 - 19 proposals were received (in excess of \$2.3M).
- Public input was solicited on all project proposals in August/September
- 10/2024: EC4 voted to approve final FY2025 Spending Plan



FY2025 Approved Spending Plan can be accessed - www.climatechange.ri.gov homepage under 'Quick Links'

Act on Climate - Key Requirements



The Act on Climate establishes economy-wide emissions reduction targets of:

- 10% below 1990 levels by 2020
- 45% below 1990 levels by 2030
- 80% below 1990 levels by 2040
- **Net-zero emissions by 2050**

- EC4 submitted an update to the 2016 GHG Reduction Plan to Governor & General Assembly in 2022
- Climate Change Strategic Plan is due in 2025 and every 5 years after following public comment, that includes strategies/programs/actions to meet economy-wide targets for GHG reductions.
- Metrics and online climate dashboard
- Environmental Justice Workgroup

EC4 Advisory Board

- 14 members that represent municipalities, labor, environmental justice, housing, health, and economic policy
- Charged with advising the EC4 and making recommendations
- Assists with communication and outreach to build support

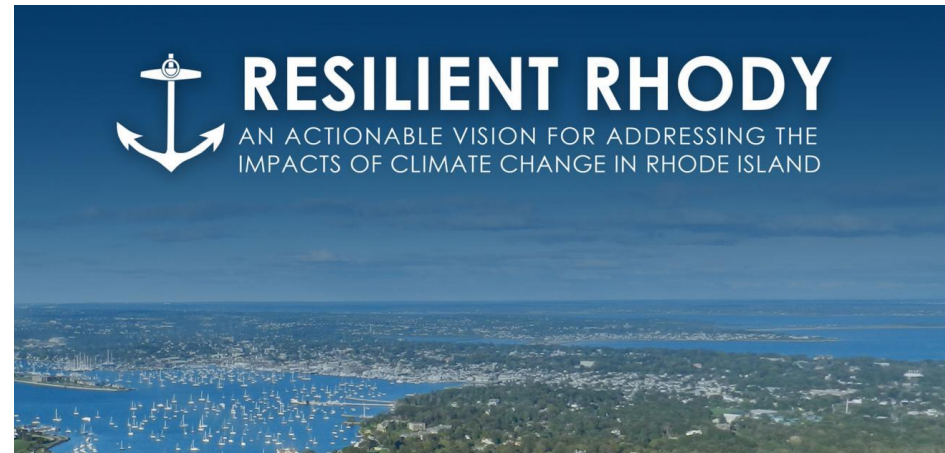


Science and Technical Advisory Board (STAB)

- 9 members that represent commerce, academia, planning, and business
- Charged with keeping the EC4 abreast of important developments and providing support for key management decisions.
- Assists with communicating scientific and technical information and keeping an inventory of key climate work.

Resilient Rhody

- Resilience Strategy first created in 2018
- Three-year impact report 2021
- State of Resilience Report 2024



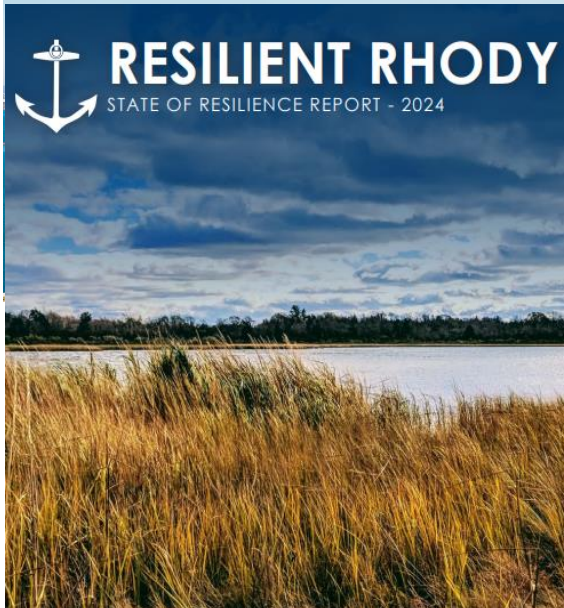
These reports address:

- Current and future vulnerabilities
- Standards and guidance for sea level rise, storm surge and flooding
- Statewide resilience initiatives and coordination
- Data and mapping resources
- Education and workforce development
- Funding, technical support and planning

Full Reports are available at: <https://climatechange.ri.gov/resilient-rhody>

Kim Koriath: Kimberly.Koriath@dem.ri.gov

Resilience Planning 2024 & 2025



December 2024

Pursuant to E0 23-07 issued by Gov. Dan McKee, RI's Chief Resilience Officer published a comprehensive snapshot of climate resilience in Rhode Island, providing an overview of our current statewide initiatives & resources, standards, and progress to date on our state resilience goals.

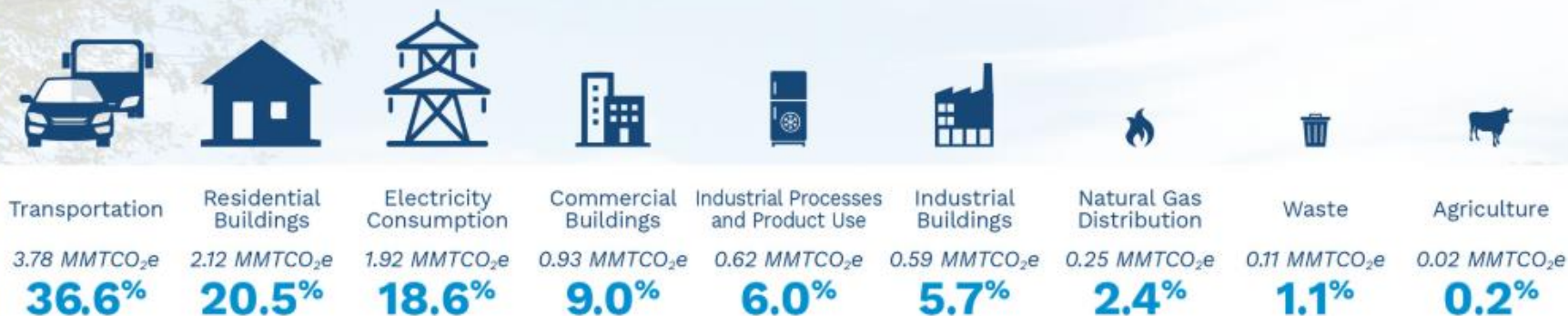
What's Happening in 2025

This year, the state will work to prepare the ***Resilient Rhody 2025 Statewide Coastal Resilience Plan***, which will, beyond revisiting the original state resilience goals established in 2018, expand to provide a thorough analysis of statewide vulnerability to climate impacts and project scoping for top priority sites.

Greenhouse Gas Inventory



2022 Gross Greenhouse Gas (GHG) Emissions



2022 Net GHG Emissions

9.60*
million metric tons of CO₂e

*Net emissions equal the sum of gross emissions and removals. Sector totals may not align with net total due to rounding.

2022 Greenhouse Gas Removals

Natural and Working Lands (NWLs)



-0.75 MMTCO₂e
7.2%
of gross GHG emissions
offset by NWLs

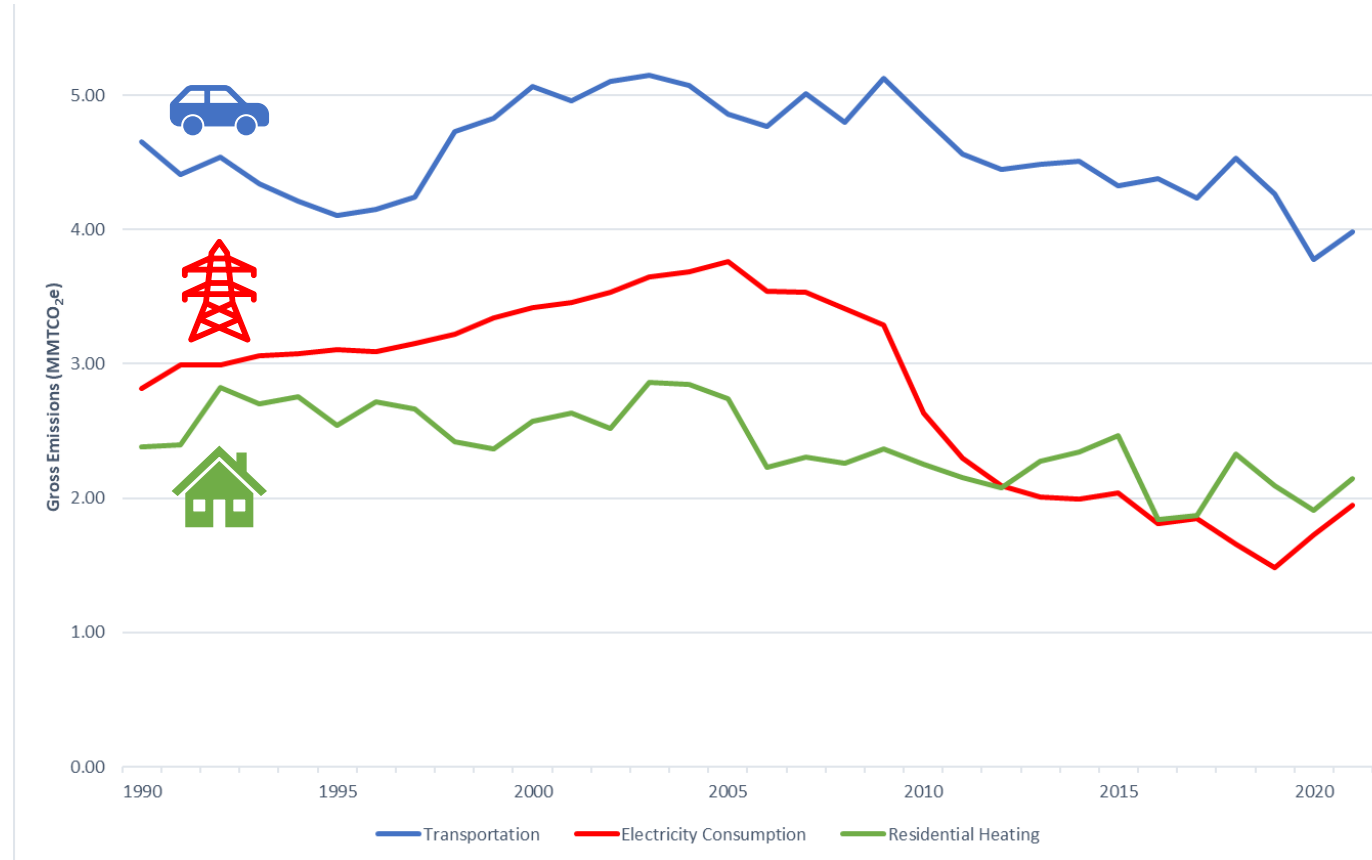
1990 - 2022 Change



Statewide Net
GHG Reductions
-18.3%

Since 1990...

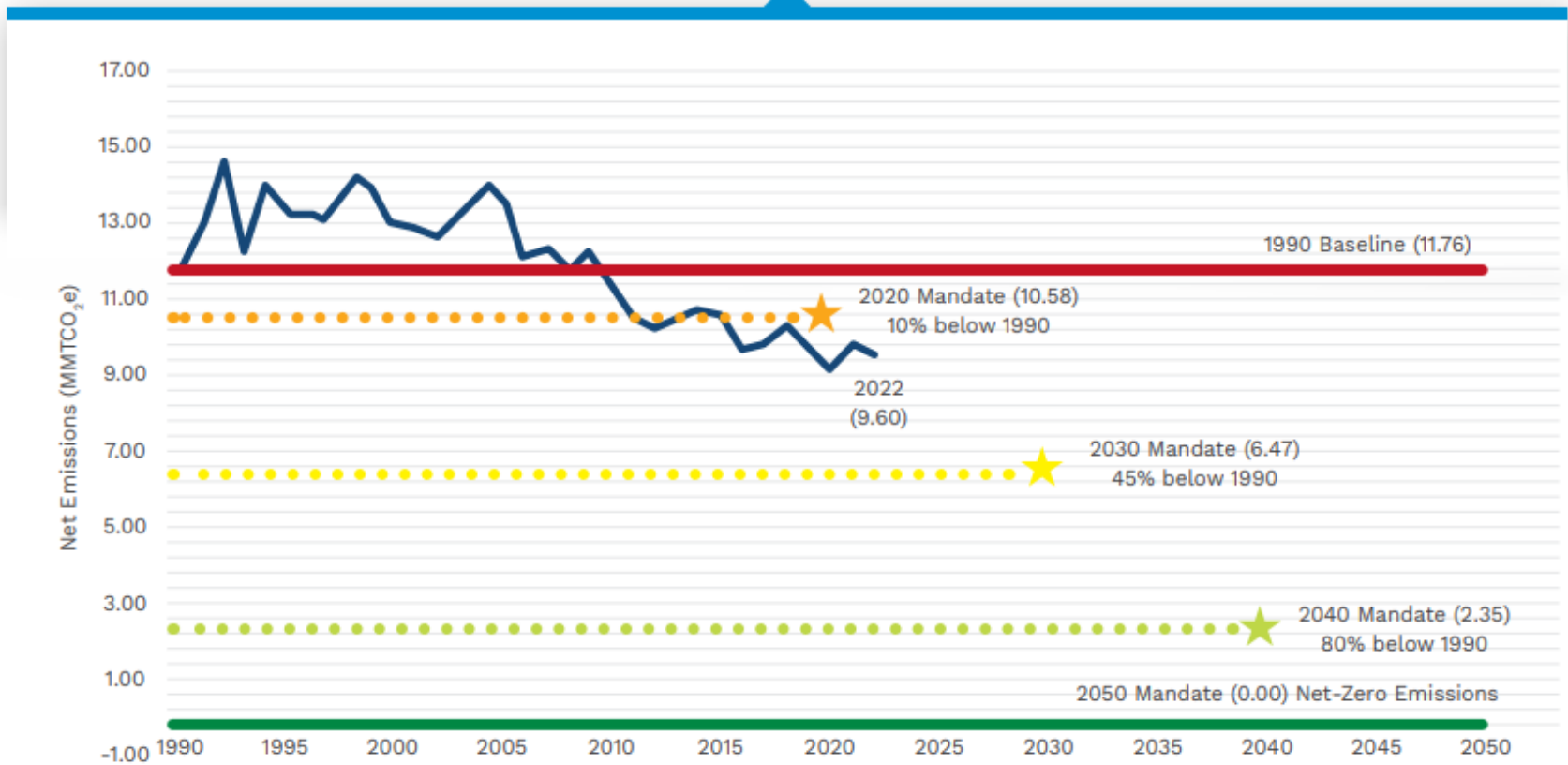
- **Transportation**
Declined 18.3%
- **Electricity Consumption**
Declined 31.7%
- **Residential Heating**
Declined 10.9%



Greenhouse Gas Inventory



1990-2022 RHODE ISLAND GREENHOUSE GAS EMISSIONS ACT ON CLIMATE REQUIREMENTS



How do we get there?

End Use Energy



Transitioning buildings, vehicles, and other uses away from fossil fuels

Energy Efficiency and Flexibility



Pursuing energy efficiency and flexibility to enable cost-effective decarbonization

Decarbonizing Energy Supply



Producing Zero and low-carbon energy to power our energy system

Carbon Sequestration



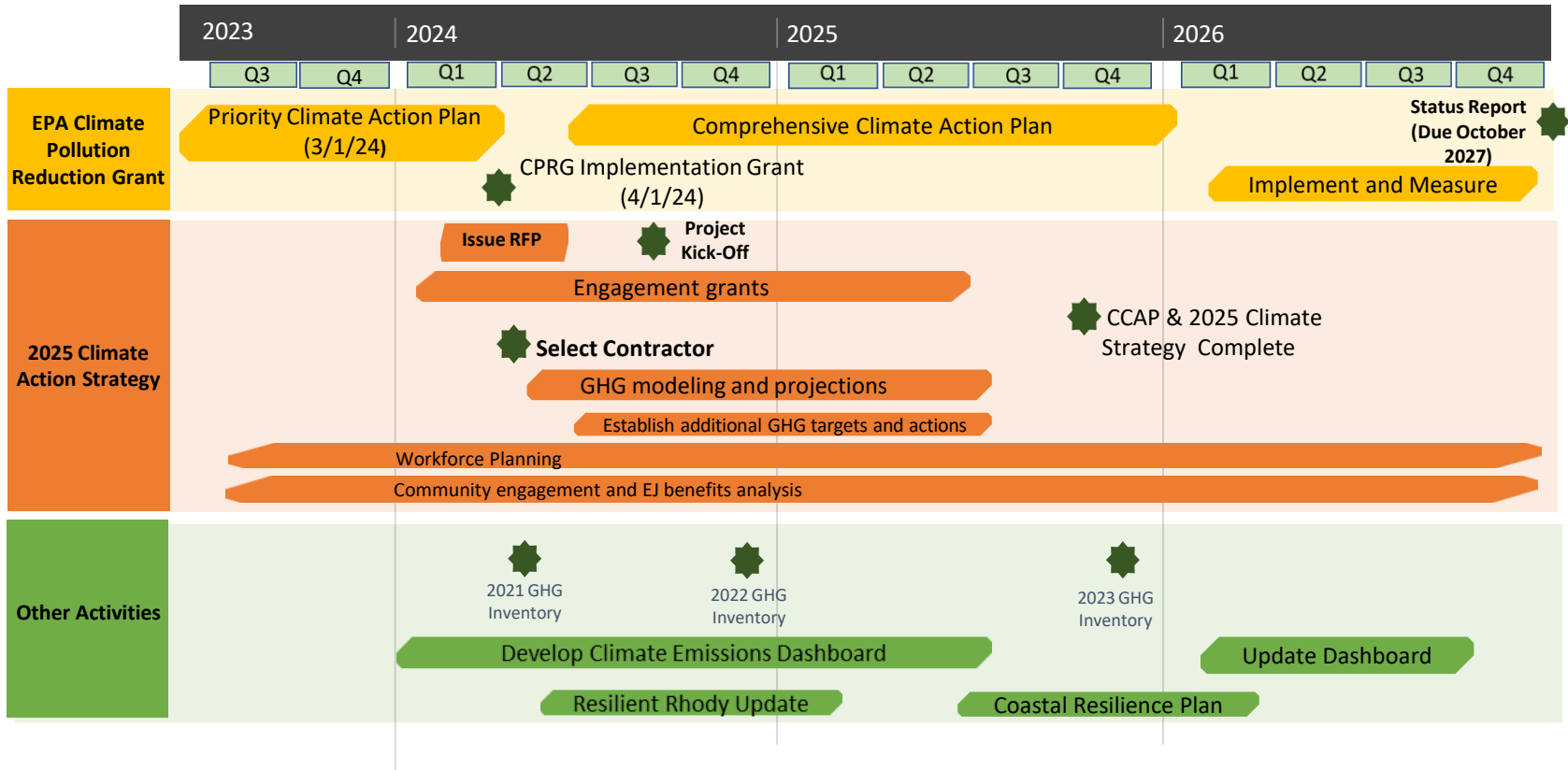
Balancing remaining emissions by facilitating CO2 removal from atmosphere

Support the community to make a just transition



Climate Pollution Reduction Grant (CPRG) & 2025 Climate Strategy Planning Timeline

- DEM submitted a **Priority Climate Action Plan** to EPA in March 2024 and a \$48M implementation grant in April 2024
- A **Comprehensive Climate Action Plan** is currently being developed



Engagement Grants



African Alliance of Rhode Island: Empower African immigrants and refugees to actively participate in the development of the 2025 Climate Action Plan and to develop an understanding of the link between climate justice and economic justice.

Youth in Action/Movement Education Outdoors: Engage youth, families, and community stakeholders throughout the urban corridor of Rhode Island by hosting community convenings and retreats.

Green Energy Consumers Alliance, Inc.: Host in-person and virtual educational events, two of which will be in Spanish.

Roots 2 Empower: Educate, engage, and support the leadership of low-income and justice-impacted families, including at-risk youth, in the tri-cities of Providence, Central Falls, and Pawtucket around climate resilience.

Building Futures: Engage apprentices and journeyworkers from environmental justice communities, construction industry stakeholders, and representatives of community organizations.

East Bay Community Action: Host events in each of the four east bay communities of East Providence, Barrington, Warren, and Bristol in partnership with the Health Equity Zones and several other community partners.

Greenhouse Gas Reduction Plan



Transportation

- Adoption of electric vehicles and charging
- Medium and Heavy-Duty Trucks, School Busses
- Electric equipment for industry, landscape, maintenance
- Improve transit ridership with transit subsidies, additional services, rapid bus
- Support active transportation, pedestrian, and bike infrastructure
- Land use strategies to support transit and density

Buildings

- Retrofit state buildings, additional renewable installations – Lead By Example
- Support municipal efficiency and electrification, microgrids
- Home Weatherization and Pre-weatherization

Waste and Working Lands

- Food Waste Diversion
- Urban Tree Planting
- Agriculture



State Energy Programs



Clean Heat RI - launched September 2023

Applications are closed except for income-eligible

- Dashboard <https://energy.ri.gov/heating-cooling/clean-heat-ri/clean-heat-rhode-island-statistics>

Heat Pump Accelerator –

New England wide program to support contractors and workers who will provide heat pumps.

Home Efficiency Rebate Program

Rebates to customers undergoing a home energy improvement that reduces energy use by a minimum of 20%

Home Electrification and Appliance Rebate Program

Income-eligible and will provide rebates on home electrification upgrades



State Energy Programs



Energy Efficiency and Conservation Block Grants

Rhode Island Cities and Towns

Rhode Island Efficient Buildings Fund

- Revolving Loan Fund
- Need an energy audit first

Renewable Energy Fund and Renewable Energy Growth Program (Commerce)

- REF grant program in June and July depending on program

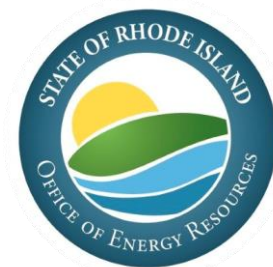
Property Assessed Clean Energy

- Financing to pay with property tax



EPA Greenhouse Gas Reduction Fund Solar For All

- \$49.3 million competitive grant award to the Rhode Island Office of Energy Resources (OER) announced April 22, 2024
- The Rhode Island Equitable Access to Solar Energy (EASE) Programs will equitably address barriers to solar adoption in Rhode Island's low-income and disadvantaged communities.
- OER led a coalition application with RI Commerce, RI Infrastructure Bank, RI DEM, RI Housing, RI DLT, RI AFL-CIO, RI Dept. of Health & Human Services, and RI Center of Justice.



Opportunities to Engage



Online 2025 Climate Action Strategy public comment portal @ <https://climatechange.ri.gov/act-climate/public-comment>

*Next EC4 Advisory Board Meeting → **March 26***

*Next EC4 Council Meeting → **April***

Subscribe to our new EC4 newsletter:

<https://climatechange.ri.gov/ri-executive-climate-change-coordinating-council-ec4-overview>



Opportunities to Engage



Engagement Workshops

Focus Area Meetings (All Virtual)

- **Transportation** – March 13, 1:00 – 3:00 PM
- **Environmental Justice** – March 19, 6:00 – 8:00 PM
- **Buildings** – March 27, 11:00 AM – 1:00 PM
- **Municipalities** – April 4, 11:00 AM – 1:00 PM
- **Workforce** – April 8, 11:00 AM – 1:00 PM
- **Energy** – April 15, 1:00 – 3:00 PM

General Stakeholder Meetings

Woonsocket – March 31, 6:00 – 8:00 PM at the Boys & Girls Clubs of Northern Rhode Island Woonsocket

Providence/Cranston – April 17, 6:00 – 8:00 PM – Exact meeting location in Providence or Cranston TBD **Virtual**

Meeting – April 29, 11:00 AM – 1:00 PM (virtual via Zoom)

Newport – May 1, 12:00 – 2:00 PM – Exact meeting location in Newport TBD

