

S.310

Climate Action Office Testimony

House Committee on Government Operations & Military Affairs
April 18, 2024

Climate Action Office (CAO)

Statewide climate action requires a **long-term intergovernmental structure**.

To accomplish this, the CAO works collaboratively within the Agency of Natural Resources and across state Agencies to **lead, coordinate, and track climate action** across state government, which support the goals and requirements of the Global Warming Solutions Act.

Background and Purpose

- Vermont's 2020 The Global Warming Solutions Act requires the Climate Action Plan include strategies to:
 - Reduce greenhouse gas emissions
 - Help communities prepare for the impacts of climate change
 - Consider opportunities for carbon sequestration
- Includes the development of a Municipal Vulnerability Index (MVI)
 - (A) develop a municipal vulnerability index to include factors measuring a municipality's population, average age, employment, and grand list trends; active public and civic organizations; and distance from emergency services and shelter;



Stakeholder Engagement

- **MVI tool users:** Primary end users of the MVI tool (e.g., municipalities, regional planning commissions (RPCs), utilities).
- **Affected Populations:** Populations that may experience disproportionate impacts from climate change based on characteristics such as race, ethnicity, age, income, education, and geographic location. Engagement included representatives of organizations serving or working with these populations.
- **MVI Tool partners:** Entities whose work is parallel to, or overlaps with, the MVI tool where there is a need to align efforts.
- **Vermont State staff responsible for MVI tool design and maintenance:** Individuals with State of Vermont assisting in the tool's development and responsible for updating and maintaining the tool over time.



Climate Vulnerability Domains and Factors

Social	Community	Economic and Jobs	Built and Physical Environment	Infrastructure	Natural Environment	Hazards
<ul style="list-style-type: none">• Population• Income• Elderly residents• Children• People with disabilities• Single parent households• Linguistic isolation• No vehicle• No internet• Rentership• Adult Asthma• Race and Ethnicity• Energy and transportation burden• Housing cost burden• Access to healthy foods	<ul style="list-style-type: none">• Municipal staff capacity• Emergency Relief and Assistance Fund (ERAF) rates• Designated areas• Plan and regulation status• Historic districts	<ul style="list-style-type: none">• Outdoor worker• Agriculture• Tourism Industry	<ul style="list-style-type: none">• Emergency services• Mobile homes• Other household types• Other site types• Housing age• Critical assets	<ul style="list-style-type: none">• Roads, bridges, and culverts• Airports• Public transit• Power lines• Drinking water infrastructure• Wastewater infrastructure• Electric substations• Power plants• Impervious surfaces	<ul style="list-style-type: none">• Municipal tree inventory• Toxic or contaminated sites• Conserved and protected lands• Community and species-scale priorities• Landscape-scale priorities	<ul style="list-style-type: none">• Drought• Extreme precipitation• Fluvial Erosion-river corridors• Hail• Ice storms• Invasive species• Inundation flooding (FEMA)• Inundation flooding (Lake Champlain)• Landslides• Snow storms• High temperatures• Low temperatures• Wildlife• Wind

Methods & Framework

- Flexible user-guided approach
- Geospatial data layers represent factors
- Outputs layered geospatial information rather than single vulnerability metric or score
- Users can select a location and conduct their own assessment of vulnerability for each hazard
- Indicates where a municipality is above the State threshold for non-geospatial factors
- Integrates existing datasets
- Underlying data for each of the factors and hazards is accessible to provide more details
- Tool designed to be updateable

Flexible, User-Guided Approach: Benefits

- More tailored to a multi-hazard, multi-asset tool
- Can help drive municipal action by providing specific locations and details of vulnerabilities
- Will not mask high consequence vulnerabilities within a single hazard or asset
- Can be easier to use in plan development and project review
- Simplifies changes to data and outputs in future updates



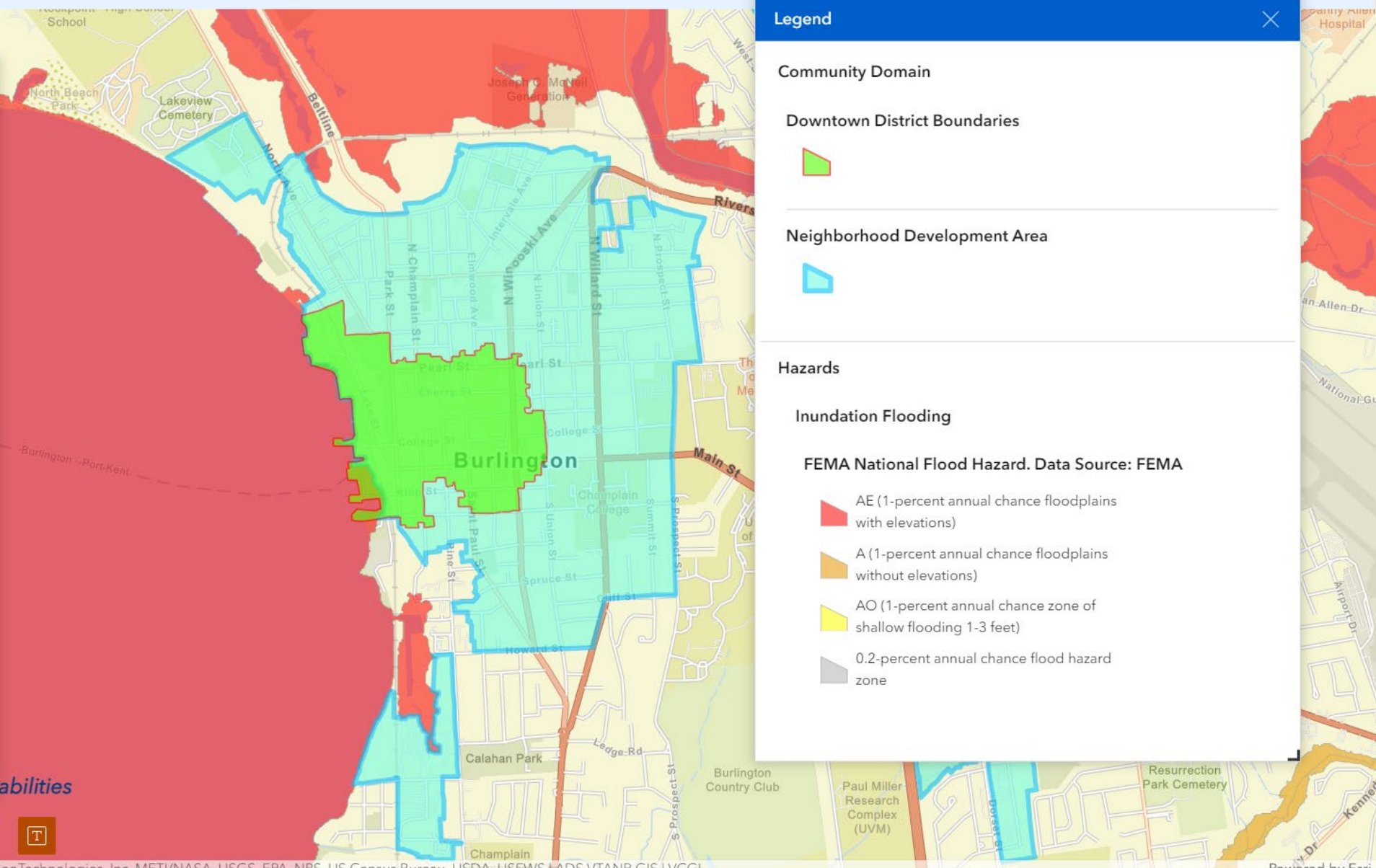
Vermont Municipal Vulnerability Index

Find address or place



Map Layers

- Built & Physical Environment Domain
- Community Domain
 - Designated Growth Center
 - Downtown District Boundaries
 - Municipal Financial Capacity
 - Municipal Staff Capacity
 - Neighborhood Development Area
 - New Town Center Boundaries
 - Plan + Regulation Status
 - State Register of Historic Districts
 - Village Boundaries
 - Emergency Relief & Assistance Funds
- Social Domain
- Economic & Job Domain



Legend

Community Domain

Downtown District Boundaries

Neighborhood Development Area

Hazards

Inundation Flooding

FEMA National Flood Hazard. Data Source: FEMA

- AE (1-percent annual chance floodplains with elevations)
- A (1-percent annual chance floodplains without elevations)
- AO (1-percent annual chance zone of shallow flooding 1-3 feet)
- 0.2-percent annual chance flood hazard zone

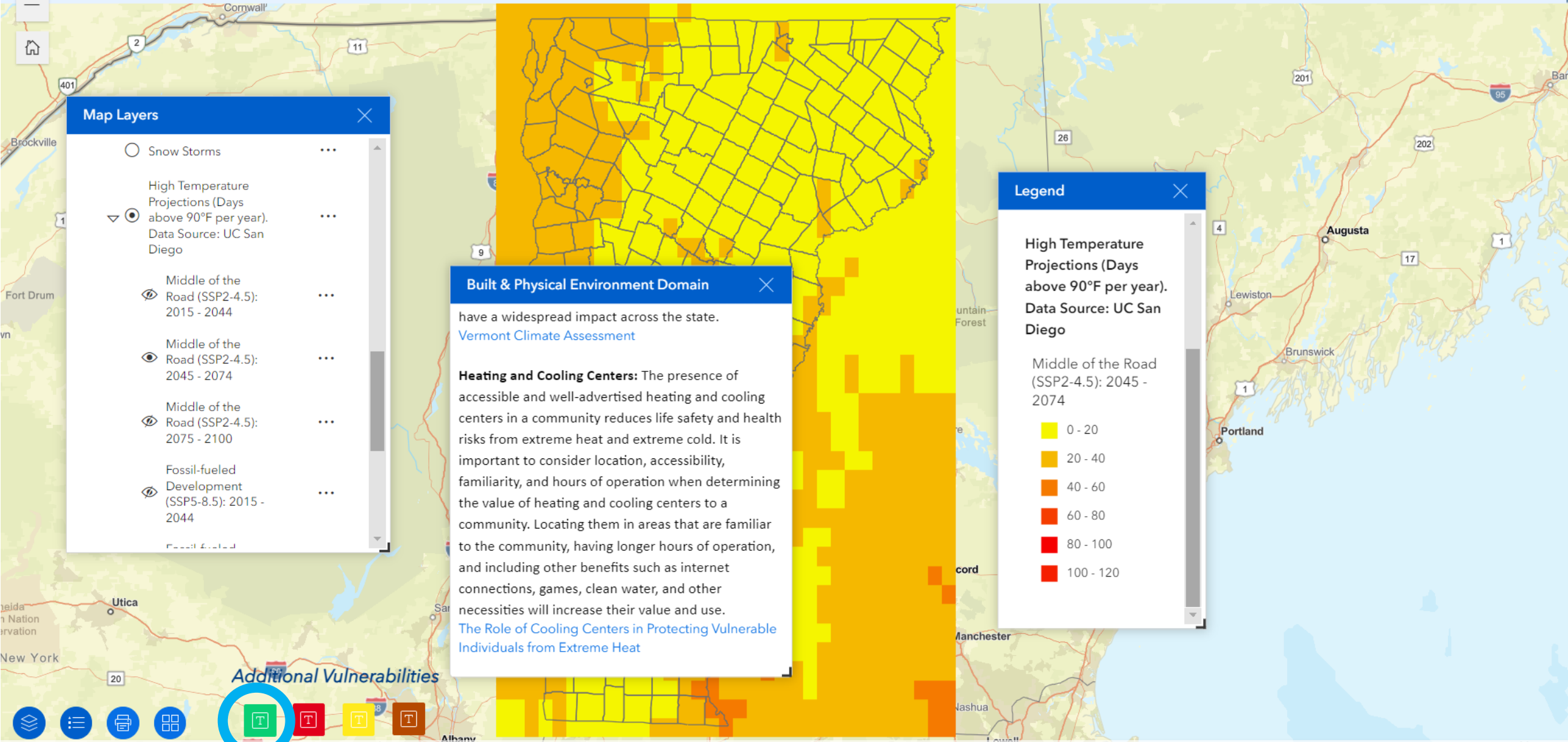


Chittenden County RPC VCGI Esri TomTom Garmin SafeGraph GeoTechnologies Inc METI/NASA USGS EPA NPS US Census Bureau USDA ISEWS HADS VTANR GIS VCGI



Vermont Municipal Vulnerability Index

Find address or place



Map Layers

- Snow Storms
- High Temperature Projections (Days above 90°F per year). Data Source: UC San Diego
- Middle of the Road (SSP2-4.5): 2015 - 2044
- Middle of the Road (SSP2-4.5): 2045 - 2074
- Middle of the Road (SSP2-4.5): 2075 - 2100
- Fossil-fueled Development (SSP5-8.5): 2015 - 2044

Built & Physical Environment Domain

have a widespread impact across the state. [Vermont Climate Assessment](#)

Heating and Cooling Centers: The presence of accessible and well-advertised heating and cooling centers in a community reduces life safety and health risks from extreme heat and extreme cold. It is important to consider location, accessibility, familiarity, and hours of operation when determining the value of heating and cooling centers to a community. Locating them in areas that are familiar to the community, having longer hours of operation, and including other benefits such as internet connections, games, clean water, and other necessities will increase their value and use. [The Role of Cooling Centers in Protecting Vulnerable Individuals from Extreme Heat](#)

Legend

High Temperature Projections (Days above 90°F per year). Data Source: UC San Diego

Middle of the Road (SSP2-4.5): 2045 - 2074

- 0 - 20
- 20 - 40
- 40 - 60
- 60 - 80
- 80 - 100
- 100 - 120



Next Steps

- Implementation of Regional Planning Commission Grant
 - RPC and Municipal Training
 - MVI Municipal Guide
- Incorporation of Act 154 maps and other resources as they become available
- Future tool updates if this was to be used for criteria for the Community Resilience and Disaster Mitigation Fund:
 - Develop phase II of the MIV that would compile factors in the tool into a list of municipalities most at risk to climate stressors.
 - Use it in conjunction with other tools such as the transportation resilience planning tool. Previous iterations of the bill referenced numerous other tools and could be revisited.

Marian Wolz
Resilience and Adaptation Coordinator
ANR Climate Action Office
marian.wolz@vermont.gov