



Long Range Planning Committee

Tuesday, June 14, 2022

7:00 pm

Remote Access ONLY Meeting via Zoom

Please join the meeting by clicking: <https://us02web.zoom.us/j/85855909618>

For those who would prefer to join by phone or those without a microphone on your computer, please dial in using your phone. (For supported devices, tap a one-touch number below to join instantly.)

Dial: +1 646 876 9923; Meeting ID: 858 5590 9618

For supported devices, tap a one-touch number join instantly: +16468769923,,85855909618#

Agenda

1. **Welcome**
2. **Approval of May 10, 2022 Minutes*** (*page 2 of the packet*)
3. **Review the DRAFT Energy & Climate Change*** (*page 14 of the packet*)
 - a. Staff overview of this topic and explanation of the organization of the draft document
 - b. Goal & Key Issues
 - c. Indicators
 - d. Strategy & Actions
4. **Future Meeting Dates and Times** – Discussion
5. **Adjourn**

Next Meeting: August - TBD

Note – Pg. 2 of the agenda includes links to the existing 2018 ECOS Plan for reference



2018 ECOS Plan Resources for the Long Range Planning Committee:

- [Summary: 2018 ECOS Plan »](#)
This summary document provides a simplified overview of the ECOS Plan, as well as the three main sections updated in 2018: energy, economy, and transportation. Please note that this overview does not reflect the overall content within the Plan, but seeks to summarize some of the main components and updates.
- [2018 ECOS Plan: Main Document »](#)
This main section includes the vision, goals and collective strategies and actions to address the region's concerns, including CCRPC's top 10 actions for the coming five years.
- [Supplement 1: Process »](#)
Process and public engagement.
- [Supplement 2: Regional Analysis »](#)
Regional analysis, culminating in a list of 31 high-priority concerns.
- [Supplement 3: Regional Plan »](#)
Regional Plan, including a description of the maps, planning areas, Act 250/Section 248 role, and compatibility with municipal and surrounding regional plans.
- [Supplement 4: Comprehensive Economic Development Strategy »](#)
Comprehensive Economic Development Strategy (CEDS) including a strengths / weaknesses / opportunities / threats analysis and project list of the region's utility and facility needs.
- [Supplement 5: Metropolitan Transportation Plan »](#)
Metropolitan Transportation Plan (MTP) including the 2050 scenario, financial plan and the region's transportation project list.
- [Supplement 6: Energy Analysis, Targets, & Methodology »](#)
Enhanced Energy Planning methodology and data guide.
- The [ECOS Scorecard](#) is where we house the indicators.
- [Annual Reports](#)
- [ECOS online map](#)

1 CHITTENDEN COUNTY REGIONAL PLANNING COMMISSION
2 LONG RANGE PLANNING COMMITTEE - MINUTES
3

4 DATE: Tuesday, May 10, 2022
5 TIME: 6:00 p.m. to 7:00 p.m.
6 PLACE: Virtual Meeting via Zoom with link as published on the agenda
7

Members Present:

Bob Henneberger, TAC Rep
Eric Vorwald, PAC Rep from Winooski
Dana Hanley, Board Rep from Charlotte
Annie Costandi, CWAC Rep
Abby Bleything, Board Rep, Alt. Winooski

Staff:

Regina Mahony, Planning Program Manager
Christine Forde, Senior Transportation Planner

8
9
10 **1. Welcome and Introductions**

11 Regina Mahony welcomed everyone at 6:03pm.

12
13 **2. Approve April 12, 2022 Minutes**

14 Dana Hanley made a motion, seconded by Bob Henneberger to approve the April 12, 2022 minutes. No further
15 discussion. MOTION PASSED.

16 **3. Review the DRAFT Public Health & Safety Section**

17 Regina Mahony explained that the Burlington District of the VT Department of Health is the author of the Public
18 Health section and the strategy and actions. Regina Mahony added that we are still working with those folks to
19 decide what indicators to use. As these can be streamlined quite a bit, and we can reference other dashboards they are
20 maintaining.

21
22 Regina Mahony also stated that the Safety Section is largely from the draft All Hazards Mitigation Plan. It also reads
23 a bit like an encyclopedia. Staff will do our best to try to edit that down and/or provide more context.

24
25 **See attached draft with comments provided by the LRPC in the margins.**

26
27 **4. Adjourn**

28 The next meeting is set for June 14, 2022, and the topic will be Energy and Climate Change. The meeting adjourned
29 at 6:51pm.

30
31 Respectfully submitted, Regina Mahony
32

PEOPLE: Promote the skills, resources, and assurances needed for all community members to participate in the workforce and in their family, civic and cultural lives, within and among their neighborhoods, and in the larger community.

X. HEALTH

Health Goal: All Chittenden County residents are healthy.

[Data for this section drawn from [State Health Improvement Plan](#) and [Healthy Vermonters 2020](#), unless noted otherwise]

Health Equity

- [Health equity](#) exists when all people have the same chance to be healthy. To achieve health equity, more attention must be focused on those with the most barriers to health. This includes people who have faced social and financial barriers, long-term injustice, and other barriers that are beyond their individual control. For generations, racism and other systems of oppression have prevented some communities more than others from accessing safety and health. Chittenden County can change this and achieve health equity through policies, social and physical infrastructure, and other investments.
- Health starts where we live, learn, work, play, and worship. Health behaviors are influenced, supported, or undermined by how we design our communities. Examples of living conditions that impact health behaviors include housing, transportation, income, education, and the experience of prejudice and isolation. Public health practitioners, land use and transportation planners, economic developers, and [city-municipal](#) leaders must work together with the communities they serve to design communities that support health.

Healthy Communities

- It is essential that communities are built to support physical activity, safe walking and biking, use of [public transportation](#), and easy access to [fresh foods](#). [Three behaviors](#) (tobacco use, lack of physical activity, and poor nutrition), lead to four chronic diseases (cancer, heart disease and stroke, type 2 diabetes, and lung disease) that result in more than 50% of all deaths in Vermont. The Health Department's [3-4-50](#) campaign explains the impact of chronic disease in Vermont.
 - In Chittenden County, 37% of adults do not get the recommended amount of exercise and 73% do not eat the recommended amount of fruits and vegetables. Inactivity affects people with disabilities and people with low socioeconomic status at a higher rate than other populations.
 - [10% of Vermont adults smoke cigarettes](#). In the U.S., [Big Tobacco](#) has a long history of targeting Black Americans with advertisements and products like menthol cigarettes. Thus, Black Americans continue to be burdened with a higher tobacco use rate than white non-Hispanic Americans.
 - Improving living conditions for people facing the most barriers to health is an effective way to decrease chronic disease rates.
- Mental health and substance misuse also have a large impact on health. Poor [mental health and alcohol misuse](#) affect....
- The [2022 Community Health Needs Assessment](#) identifies the following health priorities for Chittenden and Grand Isle Counties: housing; cultural humility and inclusive healthcare; and mental health and well-being.

Commented [RM1]: Mentally, emotionally, physically, etc. Too broad. What does it mean.

Commented [RM2]: Indicators on how we are doing on these two things. Food deserts, public transit access to groceries, etc. SSTA get folks to grocery store/food bank? Meals on wheels.

Commented [RM3]: Youth smoking – can we add this too? Tobacco use instead of just smoke cigarettes. “Big Tobacco”...less slant language.

Commented [FA4]: Add main takeaways and health disparity data that comes out in the statewide BRSS report in June. Also check if there is an opioid and oral health measure that should be mentioned.

Commented [RM5R4]: Opioid funding from pharmaceutical companies. How can we use this money?

Commented [FA6]: CHNA report is in draft form and should be finalized around June. Update this section with final information.

COVID-19

- Before COVID-19, not everyone in our community had equal access to power and resources, which are key building blocks to good health and a high quality of life. The pandemic made this worse and meant that some populations were more impacted by COVID-19 than others.
- Populations who experience discrimination and have been historically under-resourced are more likely to live in social and physical environments that put them at higher risk for COVID-19. The [Vermont Department of Health COVID-19 dashboard and reports](#) describe how BIPOC Vermonters were more affected by the pandemic.
 - During the first months of the pandemic ([March-October 2020](#)), BIPOC Vermonters represented 6% of the State’s population but 18% of COVID-19 cases. Chittenden County had the highest rate of COVID-19 among BIPOC communities, and it was significantly higher than the Vermont rate. BIPOC Vermonters with COVID-19 also had much higher hospitalization and chronic disease rates relative to white non-Hispanic Vermonters.
 - [A report from April 2022](#), shows disparities in up to date vaccination rates. Pacific Islander (16%) and Native American, Indigenous, or First Nation Vermonters (14%) experienced lower up to date vaccination rates than white (59%), Black (43%), Asian (52%) and multiracial (62%) Vermonters.
- Before COVID-19, almost 10% of Vermont households experienced food insecurity. Accessing and affording food became more difficult during the pandemic. [A University of Vermont study](#) found that people experiencing food insecurity were more likely to be people of color, female, live in households with children, and live in larger households. In addition, most people experiencing food insecurity said they could not afford to eat balanced meals.
- [The Vermont Tobacco Control Program 2021 Annual Report](#) highlights data showing the impact of the pandemic on mental health and tobacco use in Vermont. A study found that over 60% of youth and young adults reported negative effects of COVID-19 on their wellbeing. In addition, in the United States the rates of cigarette and e-cigarette sales increased and use of tobacco cessation resources like [quitlines](#) dropped.

Commented [RM7]: COVID-19 resilience? How to be better prepared in the future?

Commented [RM8]: Eliminate “power” unless we can describe more about what we are talking about.

Key Indicators

Chittenden County Adult Physical Activity and Nutrition Measures

Measure	Percent
Do NOT get the recommended amount of physical activity ^	37%
Sexual Orientation/Gender Identity	
Non-LGBT	39%
LGBT (Lesbian, Gay, Bisexual, Transgender)	35%
Disability Status	
No Disability	33%
Any Disability	54%*
Socioeconomic Status (SES)*	

Commented [RM9]: Better define, and keep language consistent (increase and decrease, not dropped).

Commented [FA10]: Some data tables/source info are falling onto separate pages. Once the text section is finalized and the tables are in final positions within the document, we will address this issue.

Low	65%*
Middle	37%
High	29%
Race/Ethnicity	
Black, Indigenous and People of Color (BIPOC)	42%
White, non-Hispanic (WNH)	37%
Do NOT eat 5+ servings of fruits & vegetables per day ^	73%
Sexual Orientation/Gender Identity	
Non-LGBT	73%
LGBT	72%
Disability Status	
No Disability	72%
Any Disability	80%
Socioeconomic Status (SES)†	
Low	77%
Middle	76%
High	70%
Race/Ethnicity	
BIPOC	69%
WNH	73%

Commented [RM11]: These add up to more than 100%. Can we better explain what these percentages are? It's confusing.

Commented [RM12]: Footnotes out of order from when they appear in the table.

*Indicates a statistically significant difference.

^Data are age-adjusted to the U.S. 2000 population.

†Low SES is defined as adults with a household income less than 250% of the federal poverty level (FPL) and a high school education or less. Middle SES is defined as adults with a household income less than 250% of the FPL and some college education, or greater than 250% of the FPL and up to some college education. High SES is defined as adults with a four-year college degree or more.

Source: Behavioral Risk Factor Surveillance System, 2017/2019

Chittenden County Adult Health Measures

Note: When this report was generated, breakdowns by demographics were not available for the measures below.

Measure	Percent	Data Year
Currently smoke cigarettes^	10%	2019/2020
Always, usually, or sometimes get social and emotional support	94%	2018/2020
Cannabis use in the past 30 days	23%	2019/2020
Driving after using cannabis in the past 30 days, among Vermont adults who currently use cannabis	18%	2017-2020
Diagnosed with cancer†	6%	2019/2020
Diagnosed with cardiovascular disease†	6%	2019/2020

Diagnosed with diabetes	6%	2019/2020
Diagnosed with lung disease[†]	12%	2019/2020

[†]Cancer is defined as a non-skin cancer diagnosis. Cardiovascular disease includes coronary heart disease, myocardial infarction (heart attack), or stroke. Lung disease includes chronic obstructive pulmonary disease or asthma.

[^]Data are age-adjusted to the U.S. 2000 population.

Source: Behavioral Risk Factor Surveillance System

Chittenden County Youth Physical Activity and Nutrition Measures

Measure	Percent
Do NOT get the recommended amount of physical activity	82%
Race/Ethnicity	
Students of Color (SOC)	83%
White, non-Hispanic (WnH)	82%
Sexual Orientation/Gender Identity	
HET (Heterosexual/Cisgender)	80%
LGBT (Lesbian, Gay, Bisexual, Transgender)	90%*
Do NOT eat 5+ servings of fruits & vegetables per day	78%
Race/Ethnicity	
SOC	73%
WnH	79%*
Sexual Orientation/Gender Identity	
HET	77%
LGBT	83%*

*Indicates a statistically significant difference.

Source: 2019 Vermont High School Youth Risk Behavior Survey (YRBS)

Chittenden County Youth Mental Health and Wellness Measures

Measure	Percent
Felt sad or hopeless in the past year	28%
Race/Ethnicity	
SOC	32%*
WnH	27%
Sexual Orientation/Gender Identity	
HET	23%
LGBT	59%*
Feel like they matter to people in their community	66%
Race/Ethnicity	
SOC	56%*
WnH	68%
Sexual Orientation/Gender Identity	
HET	70%

LGBT	46%*
------	------

*Indicates a statistically significant difference.
 Source: 2019 Vermont High School Youth Risk Behavior Survey (YRBS)

Chittenden County Youth Substance Misuse Measures

Currently smoke cigarettes or cigars or used smokeless tobacco or electronic vapor products	24%
Race/Ethnicity	
SOC	21%
WnH	25%
Sexual Orientation/Gender Identity	
HET	25%
LGBT	24%
Currently drink alcohol	29%
Race/Ethnicity	
SOC	21%
WnH	30%*
Sexual Orientation/Gender Identity	
HET	29%
LGBT	30%
Currently use cannabis	26%
Race/Ethnicity	
SOC	21%
WnH	25%*
Sexual Orientation/Gender Identity	
HET	27%
LGBT	27%

*Indicates a statistically significant difference.
 Source: 2019 Vermont High School Youth Risk Behavior Survey (YRBS)

Additional key indicators can be found on the [ECOS Scorecard](#).

Commented [RM13]: Throughout these tables spell out the acronyms. And some of them change b/n youth and adults so it would help to spell them out.

X. PUBLIC SAFETY, CRIMINAL JUSTICE & HAZARD MITIGATION

Public Safety, Criminal Justice Goal: Improve the safety of the public including the loss of life and property from natural and manmade hazards.

Key Issues/Trends/Insights

[Data for this section is drawn from the Draft [2022 Chittenden County Multijurisdictional All Hazards Mitigation Plan](#). More information can be found on the [Flood Ready Vermont](#) website.]

- Safety and perceptions of safety feature highly in people's view of their living environment, their sense of well-being and quality of life. As evidenced in the [2020 ECOS Annual Report](#), a report focused on disparities and impacts from the COVID-19 pandemic and systemic racism in our nation and community, not all members of our community are **equally safe**.
- Municipal emergency response and law enforcement services are challenged by a lack of staff (both paid and volunteer) and the cost of services. There are significant staff vacancies on municipal and state police departments; a ramification of Vermont's overall workforce shortage and likely some relation to police reform efforts. While Burlington and South Burlington have full-time paid fire departments, some towns use a blend of paid and volunteer firefighters, and most fire departments are completely reliant on volunteers. The lack of volunteers for volunteer fire departments and EMS is causing concerns about the ability and timeliness of response and is resulting in the need to hire firefighters and EMTs especially for weekday daytime shifts. Another challenge with emergency response is the cost and inefficiency of current dispatch operations. The [Chittenden County Public Safety Authority](#) was established to improve dispatch services in the County. The plan is to begin operations in July 2024 once funding is secured.
- As identified by the 2022 *Chittenden County Multi-Jurisdictional All Hazards Mitigation Plan (AHMP)*, the three highest ranked county-wide hazards for various sectors : for Natural Hazards – Severe Rainstorm, Severe Winter Storm and Human Infectious Disease; for Technological Hazards – Power Loss, Water Pollution and Hazardous Materials Incident and for Societal Hazards – Crime, Civil Disturbance and Economic Recession
- Flooding and fluvial erosion can damage or destroy homes, businesses and transportation infrastructure. In Chittenden County there are 297 insurance policies participating in the National Flood Insurance Program. Since 1978 a total of 196 claims have been covered paying out just over \$2,561,700 (in 1978 dollars) with 42 of those claims coming from properties damaged more than one time in a 10-year period. Currently, there are XXX structures (X.X% of total County structures) located in mapped Special Flood Hazard Areas (aka the 100-year flood zone) as identified in detail in the AHMP and municipal Annexes.
- In recent decades, Chittenden County has experienced damage from numerous incidents including FEMA-Declared Natural Disasters primarily Severe Storms, Flooding, Hurricanes/Tropical Storms, Snow/Ice storms as follows: 1990-1999: seven (7) declaration; 2000-2009: two (2) declarations, and 2010-2019 eleven (11) declaration Since 2020 two declarations have been made related to COVID and most recently in August 2021 a declaration was made for Tropical Storm Henri.
- Severe rainstorms, flooding, fluvial erosion and possibly epidemics may be made worse by projected climate changes. The 2021 Vermont Climate Assessment notes that

Commented [RM14]: We don't really talk about this piece, and then the only indicator is about incarceration. Is there someplace where this would be a better fit? And if we are going to include it, what are we saying about it? Community Justice Centers, etc. Better fit under community health?

Commented [RM15]: Clean this up. Burlington and South Burlington aren't the only paid fire departments.

Commented [RM16]: The percentage within the sfha (+30 ft buffer) is 1.3%. There are 759 structures (residential, commercial, industrial, institutional and Mass assembly) within the SFHA plus 30ft. There are a total of 58,550 structures in the county.

“Vermont is becoming wetter. Precipitation has increased 21 percent since 1900. Vermont now experiences 2.4 more days of heavy precipitation than in the 1960s, mostly in the summer. With flooding expected to increase, improved stormwater infrastructure and planning is required to reduce damage to homes, roads, bridges, and farm fields. Heavier rainstorms will impact farm and forestry operations.” Additionally, the Assessment states “Floods and droughts are now Vermont’s most likely natural disasters. Both are expected to increase due to growing variability of rain and changing water tables. As a result, irrigation infrastructure will remain crucial for farms and gardens.”

- Regarding Human Infectious Disease, the 2022 AHMP noted events such as the 1918 Spanish Influenza, the 2009-2010 H1N1 Influenza and the 2020 COVID-19 (coronavirus) Pandemic. The Plan states that “(b)ased on the historical occurrence of human infectious disease outbreaks of a pandemic level in Vermont and Chittenden County, it can be estimated that the recurrence interval is 34 years¹⁰, indicating that, on average, a human infectious disease event will occur within that time period.”
- Emergency Management Planning is needed to best be able to respond, recover, and mitigate disasters. As of 2022, regional coordination and support of all-hazards emergency planning and preparedness activities is now conducted through the Chittenden County Regional Emergency Management Committee (CCREMC). The CCREMC is made up of membership from municipal Emergency Management Directors and public safety officials.
- Each municipality prepares, and updates annually, a Local Emergency Management Plan (LEMP) that provides local information as to how the municipality would respond to a disaster. The format of the LEMP is consistent with the National Incident Management System (NIMS) and a standardized, on-scene, all-risk incident management concept, known as ICS – Incident Command System. ICS allows its users to adopt an integrated organizational structure to match the complexities and demands of single or multiple incidents without being hindered by jurisdictional boundaries. The LEMP details local contacts, local and state equipment and resources, shelters, and locations of vulnerable populations.
- The State has incentivized flood resilience planning through the Emergency Relief and Assistance Funds (ERAF) program. There are several steps a municipality can take to improve the local match requirement for FEMA post-disaster relief funds. Generally, in the event of a Federal-disaster declaration FEMA covers 75% of the cost of “Public Assistance” projects, typically repairs to roads and culverts and debris cleanup. The remaining 25% must be matched by the State and municipal government. Four requirements are needed for the State to provide half of that requirement, 12.5% match assistance. As of Spring 2022, nearly all of Chittenden County’s municipalities have met these four benchmarks as follows:
 - adopt Local Emergency Operation Plans annually – 19 or 100% of Chittenden County municipalities have adopted these.
 - adopt the Town Road and Bridge Standards that meet or exceed the VTrans 2019 standards – 19 or 100% of Chittenden County municipalities have adopted these;
 - participate in the National Flood Insurance Program – 18 or 95% of Chittenden County municipalities participate. Buel’s Gore has no mapped floodplain; and

Commented [RM17]: What is this reference? It didn't carry forward into this document.

- adopt a FEMA-approved Local Hazard Mitigation Plan – 19 or 100% of Chittenden County municipalities have an adopted Plan.
- There is an opportunity for the State to provide an additional 5% (for a total of 17.5%) towards the required 25% non-Federal match. , if the municipality protects river corridors. There are two options to permanently obtain the extra 5%: receive FEMA’s Community Rating System (CRS) designation and prohibit structures in Flood Hazard Areas; or Adopt River Corridor Bylaws (with the 50’ buffer) regulations for streams draining over 2 square miles, As of June 2022 Colchester is the only municipality with CRS designation while St. George and South Burlington have adopted River Corridor Bylaws. Additionally, DEC is temporarily granting an “early adopter” recognition (and allowing for the 5% bonus). Currently 12 of our municipalities have received early adopter recognition for river corridor protection due to having strong municipal water quality buffers and floodplain regulations. This early adopter status is currently in place, but the State has indicated that eventually they will phase out this early adopter mechanism and towns would have to adopt the State’s model River Corridor Bylaw if they wish to receive the extra match. The municipalities of Burlington, Huntington and Underhill still allow some conditional uses in the floodplain and thus do not receive “early adopter” status and would receive a match of 12.5% from the State while Buel’s Gore has not joined the NFIP and thus would receive only 7.5%.
- Transportation safety is discussed in Supplement 5.

Key Indicators

- **Incarceration rates by race compared to general population** (Source: Dept. of Corrections). “The largest proportion of both male and female inmates were prosecuted in the largest District Court (Chittenden county) with the fewest inmates from the smallest counties. But on a per capita basis, Chittenden was close to average in its use of incarceration bed space; only Bennington (176%) significantly exceeded expectations for use of prison/jail based on its population” (Source: DOC Fact and Figures FY2011, Page 38). “Although the residents of Vermont are predominantly characterized by race as “white”, on a per capita basis, the utilization of DOC services by “black” residents is about 7 times higher for incarceration and 2.5 times higher utilization of DOC services by “black” residents for field supervision. Native Americans and Asians use DOC resources at about half the rate of “whites”” (Source: DOC Fact and Figures FY2011, Page 38).

Commented [MN18]: The intern said the previous report for this data doesn’t exist anymore. Let’s reach out to DOC.

Additional Indicators can be found on the ECOS Scorecard.

Indicator	Location
Violent Crime Rate per Capita	Scorecard
Property Crime rate per 1,000 Chittenden County Residents	Scorecard
Emergency Service Calls	Scorecard

Commented [MN19]: Intern updated this data.

Fire Calls	Scorecard
Number of Structures in Special Flood Hazard Areas and Fluvial Erosion Hazard Areas	Scorecard
Percent of Children (Age 6 mo-8 yrs.) Immunized Against Influenza	Scorecard
Percent of Adults (65+) Immunized Against Influenza	Scorecard
Number of Vehicle Crashes Per Million Annual Vehicle Miles Traveled	Scorecard
Number of reported vehicle crashes involving bicycles or pedestrians	Scorecard

Strategy

5. INCREASE OPPORTUNITY FOR EVERY PERSON IN OUR COMMUNITY TO ACHIEVE OPTIMAL HEALTH AND PERSONAL SAFETY.

Actions

1. **Invest in living conditions** – Investment in the living conditions of citizens is the key to improving overall health and wellness. Provide the basic needs of all people through access to healthy food, safe shelter, education, jobs, affordable housing, and public transportation. Ensure that resources, like healthcare and affordable food, are in places that are easily accessible for everyone. Focus investment in communities that have been historically excluded from community power and resources.
2. **Apply Health in All Policies approach to decision making-** [Health in All Policies \(HiAP\)](#) is a collaborative approach to improving the health of all people by including health considerations in all decision-making processes. By showing how all policies affect health, sectors work together to ensure Vermont continues to be one of the healthiest places in the U.S. to live, learn, work, and play.
3. **Conduct Health Impact Assessments-** [Health Impact Assessment \(HIA\)](#) is a process that helps evaluate the potential health effects of a plan, project, or policy before it is built or implemented. For example, a HIA could identify potential positive and negative public health impacts of new transportation and land use projects. A HIA provides practical recommendations to increase positive health effects and minimize negative health effects.
4. **Create policies that protect against addiction and substance misuse** – Reduce youth access and exposure to adult-only products (tobacco, alcohol, cannabis) by passing evidenced-based policies such as restricting retail promotion, preventing retail locations near schools, and

designating substance-free outdoor public spaces. Support people in recovery and youth by normalizing and promoting substance-free events. Promote upstream approaches by working with communities to impact [risk and protective factors](#) and prevent substance use disorder.

5. **Create policies and environmental supports that increase access to active transportation, active recreation, and healthy foods-** The physical design of a community affects residents' health every time they step out their front door. Through [Healthy Community Design](#), communities can be planned and developed in a way that increases access to sidewalks, parks, and healthy, affordable food. Improving air and water quality and minimizing the effects of climate change further support population health. Communities can develop in ways that make fitness easy to access, which is also supporting mental health by providing an outlet to reduce stress and encourage socialization and human connection.
6. **Assure that older adults and people with disabilities are well cared for-** Support family members who are caregivers (or provide care). Ensure that older adults and people with disabilities who need formal care in their daily living, have access (including transportation) to the appropriate services.
7. **Increase opportunities for residents to come together, interact, and network-** Support organizations and businesses that bring diverse people together around myriad themes: arts and cultural events, recreational and leisure activities, civic engagement initiatives, educational workshops, family events, or any other activity that brings people together with a common interest. Encourage organizations offer and/or support free arts and leisure opportunities so that everyone, regardless of location or social/economic status, can experience the benefits of cultural events and participate in civic engagement.
8. **Assure that all municipalities and social service organizations have well-developed emergency preparedness plans-** Take an all-hazards approach that can be used in weather emergencies as well as biological, chemical, radiological and terrorist emergencies. Address the needs of their residents/clients with access, functional, and translation needs. Promote health equity by identifying the most vulnerable communities, assessing their needs, and incorporating them into emergency plans. Include action steps that municipalities would take in the case of a major emergency event where Chittenden residents become refugees or where people seek refuge in the Chittenden County area. Encourage collaboration and coordination in preparedness and response. ~~Train Chittenden County employers on the development, practice, and regular review of Businesses Continuity Plans and Business Recovery Plans.~~ Develop systems that monitor for impacts of climate-change that would affect human health or safety. Build climate resiliency into all systems and agencies.

Commented [RM20]: Encourage livable communities and aging in place within communities as this is an important factor.

Commented [RM21]: A lot in here. Might break this out. Also this is more broad than what CCRPC will do. Is that okay?

Commented [RM22R21]: Pandemic resilience...

Commented [RM23R21]: UVM-MC emergency preparedness plan. Kate. She may have some good insight into this bullet.

PLACE: Make public and private investments in the built environment to minimize environmental impact, maximize financial efficiency, optimize social equity and benefits, and improve public health. AND Design and maintain a strategically planned and managed green infrastructure network composed of natural lands, working landscapes, and open spaces that conserve ecosystem values and functions, and provide associated benefits to our community.

XX. CLIMATE

Climate Change Goal: Reduce greenhouse gas emissions contributing to climate change and adapt to become more resilient to a changing climate.

Key Issues/Trends/Insights

[Data for this section drawn from [The 2021 Vermont Climate Assessment](#)]

Climate Change is Here

- Vermont is becoming warmer (average annual temperature is about 2°F warmer since 1900) and Vermont's winters are becoming warmer more quickly (winter temperatures have warmed 2.5x more quickly than average annual temperature since 1960). On average, lakes and ponds across Vermont are icing-out one to three days earlier per decade since the 1970s and 1980s Vermont is also becoming wetter (average annual precipitation has increased by 21% or 7.5 inches since 1900). Extreme weather events such as droughts and floods are expected to continue to increase with climate change. Vermont experiences 2.4 more days of heavy precipitation than in the 1960s, most often in summer. However, Vermont still experiences prolonged droughts because of shifts in the water cycle and different regions of Vermont can experience different climate impacts. (2021 Vermont Climate Assessment)
- Scientists overwhelmingly agree that changes in climate worldwide are a result of human activities with the main cause identified as the burning of fossil fuels. Climate model forecasts for the Northeast US predict that during this century temperatures will continue to increase. So too will extreme heat days and heat waves. More total precipitation, and extreme precipitation events, are expected although short-term summer droughts may also become more frequent.

Climate Change Impacts

- Current and predicted changes in climate have broad implications for our region.
 - Environmental Quality - Summer air quality will deteriorate as warmer temperatures promote the formation of smog. More intense rainfall will increase storm water runoff and the potential for flooding. Increased rain and runoff will wash pollutants into our waterways. Warmer waters and nutrients will encourage growth of bacteria and blue-green algae.
 - Natural Communities - Cold-water aquatic species, such as brook trout, will struggle to survive in warmer waters and in competition with better-adapted species. Our forests will change: maple, beech and birch trees will gradually be replaced by oak and hickory trees that are better adapted to warmer, wetter conditions. Invasive species, like the hemlock wooly adelgid and the emerald ash borer, will further affect change in forest composition.

- Public Health - Warmer temperatures allow the spread of insect-borne diseases, such as West Nile virus and Lyme disease. Air pollution and higher pollen production will increase problems for people with allergies, chronic respiratory diseases and asthma. High temperatures and heat waves will increase the risk of heat stress for the elderly, very young children and other vulnerable populations.
- Built Environment – Flooding will put homes, businesses and public infrastructure in flood-prone areas at risk. Flooding may impact the safety of the water supply; droughts will also threaten water supplies. Although warmer winters will require less fuel for heating, hotter summers will increase electricity demands for cooling. Urban trees will be increasingly important as urban trees reduce the urban heat island effect through shading and reducing stormwater runoff.
- Agriculture and Food Systems – While warmer temperatures will hurt maple sugar production, milder temperatures will extend the growing season and allow new crops not previously viable in Vermont to be grown here. However, growing conditions will be tougher because of greater variability in temperatures and precipitation. Farmers can expect declining yields for cool-weather crops and depressed milk production from heat-stressed dairy cows.
- Recreation and Tourism-Trees may be negatively affected by warmer temperatures and recreation activities that depend on trees, like leaf peeping and apple picking, may be less viable. The 2021 VT Climate assessment indicates that the Vermont ski season will be shortened by one month (under a high emissions scenario) or by two weeks (under a low emissions scenario) by 2080. With snowmaking, the downhill skiing sector can likely remain viable in Vermont up until approximately 2050.

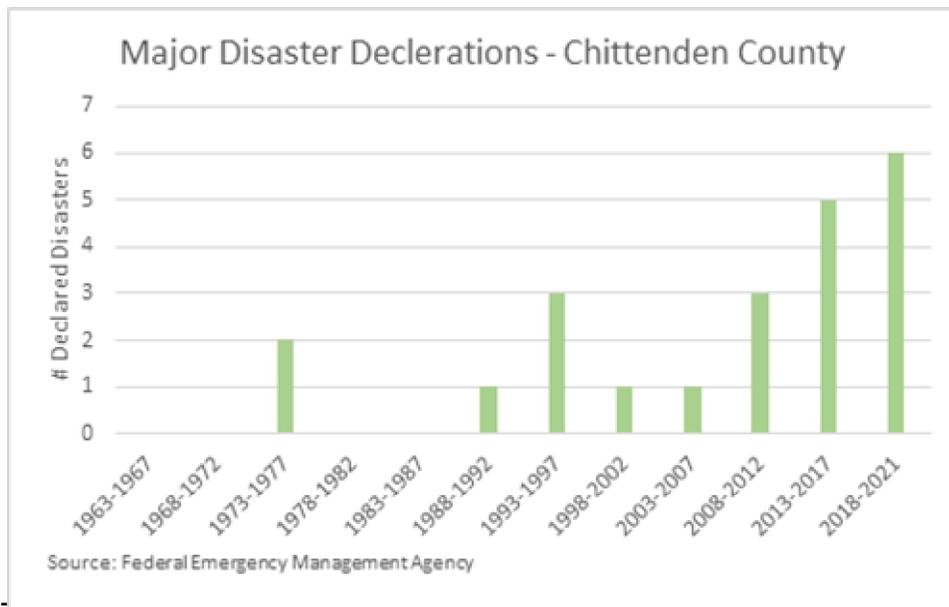
Climate Change Response

- We can respond to climate change in two different ways.
 - **Climate mitigation** strategies will reduce the region’s contribution of greenhouse gases. Although Chittenden County is a small part of global greenhouse gas emissions, it is important that Chittenden County do its part to help solve the problem. Specifically, Chittenden County should help the State reach the goals of reducing 40% of greenhouse gas emissions from the 1990 baseline by 2030 and 80% of greenhouse gas emissions from the 1990 baseline by 2050.
 - **Climate adaptation** strategies help individuals, businesses and communities be able to withstand and bounce back from – or even take advantage of – the impacts of climate change.

Key Indicators

- **Major Disaster Declarations** - Major disaster declarations are made for natural events causing damage so severe that it is beyond the combined capabilities of state and local governments to respond.

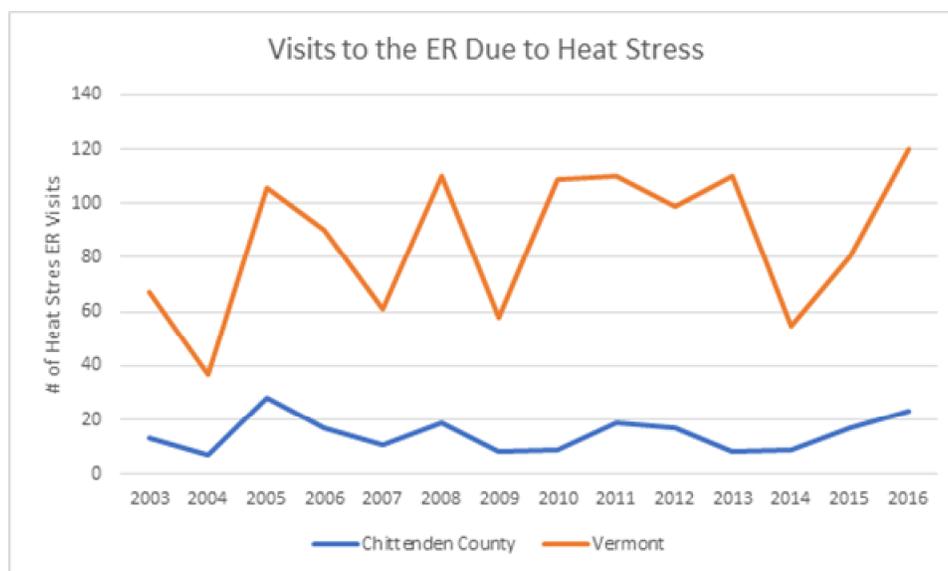
FIGURE 14 - MAJOR DISASTER DECLARATIONS, CHITTENDEN COUNTY



➤ **Climate-Related Infectious Diseases.** Increased transmission of vector-borne diseases is a key supporting indicator associated with climate change. The Health Department tracks the number of new Lyme disease, West Nile virus (WNV) and Eastern Equine Encephalitis (EEE) cases each year. Twelve cases of WNV and two cases of EEE have been reported since 2011 (Vermont Department of Health). See scorecard for Number of Confirmed Lyme Disease Cases Reported to be Exposed in Chittenden County.

➤ **Heat Stress Hospitalizations**

FIGURE 4 - HEAT STRESS HOSPITALIZATIONS See scorecard for updated data



Indicator	Location
Greenhouse Gas Emissions, 2010	Scorecard
Carbon Sequestration from Vegetated Landscapes, 2001	Scorecard
Major Disaster Declarations, 1997-2016	Scorecard
9	Scorecard
Number of Confirmed Lyme Disease Cases Reported to be Exposed in Chittenden County, 2005-2016	Scorecard

Additional indicators can be found on the ECOS Scorecard.

X. ENERGY

Energy Goal: Move Chittenden County’s energy system toward cleaner, more efficient and renewable sources that benefit health, economic development, and the local/global climate by working towards the State’s Comprehensive Energy Plan goals.

Key Issues/Trends/Insights

[Data for this section drawn from: Energy Analysis, Targets & Methodology in Supplement 6 of this Plan, [Energy Analysis Report](#) and associated appendices and [Climate Change Trends and Impacts Report](#)].

Energy Overview

- To meet state energy goals, the region is planning for a major shift away from fossil fuels in the transportation and heating sector to renewable sources of energy, efficiency in all sectors, and an increase in state renewable energy generators.
- Vermont citizens, businesses, and industries spend about \$1.5 billion a year to pay for imported fossil fuels (2021 EAN Annual Report). Much of this money leaves the County and state immediately. This outflow of energy dollars acts as a drain on the local economy.
- The price of energy is forecasted to continue increasing in the future, which will result in an additional burden on the County’s residents and businesses, unless energy consumption can be reduced.
- Fossil fuel combustion increases the atmospheric concentration of carbon dioxide and other greenhouse gases, which are the causes of global climate change. Climate change will have profound impacts on the environment, public health, infrastructure, and economy of Chittenden County.
- Vermont, and the County, relies heavily on gasoline and diesel for transportation. However, gasoline usage for transportation has decreased due to improved fuel economy standards and the inclusion of electric vehicles in the light duty sector.

According to the Energy Information Administration, between 2010 and 2019, motor gasoline consumption decreased by 8.9% or from 7,710 to 7,022 thousand barrels.

- Chittenden County is home to an international airport and a National Guard base. Transportation fuel consumption in the County not only includes gasoline, diesel, and compressed natural gas, but also aviation gasoline and jet fuel.

Weatherization and Energy Efficiency

- Chittenden County has a long history of electrical and natural gas energy efficiency programs, dating back to 1990, which have provided significant energy savings and economic benefits to the state and County. These programs along with improvements in federal standards have led to a reduction in per household and per employee energy consumption of electricity and natural gas. Reduction in energy consumption directly results in a reduction in energy bills. Following the Home Performance with ENERGY STAR® guidelines, and building/renovating to the State's Building Energy Code, are two programs which assist Vermonters with reducing energy consumption from heating and electricity in homes and businesses. See Indicators for data on efficiency gains.
- The 2016 Comprehensive Energy Plan (CEP) included a goal to weatherize 80,000 homes by 2020; according to the 2021 Vermont Energy Action Report, only 10% or 29,289 homes have been weatherized. The 2022 CEP calls for an even more ambitious target to weatherize 120,000 homes by 2030, therefore approximately 90,000 homes need to be weatherized by 2030. To meet this target, the Energy Action Network estimates that Vermont's qualified weatherization workforce needs to grow five-fold in fewer than five years (EAN 2021 Annual Report). To meet the weatherization goal, the State needs to address all the challenges affecting weatherization workforce. These challenges include shortages of skilled workers willing to work in uncomfortable conditions, wage competition with less-strenuous working conditions, fluctuations in funding/incentives for weatherization projects, and affordable housing ([Weatherization Workforce Plan, Efficiency Vermont 2021](#)).
- There is a need for focused study to determine solutions for vermiculite removal as it relates to weatherization, in particular low-income weatherization. Vermiculite was used as an insulator for decades (1960-1990) and was mined with asbestos. Thus, any home with vermiculite is assumed to be contaminated.
- While efficiency programs targeting electricity and natural gas have been largely successful in the commercial and residential sectors, there is an urgent need to fund and develop similar programs and policies for non-regulated thermal fuels to accelerate switching to fuels with less greenhouse gas emissions.
- According to the LEAP analysis, Chittenden County would need to weatherize 14% of homes by 2025 and 70% of homes by 2050.

Fuel Switching and Electrification

- Vermont's energy future includes a transition to beneficial electrification in the heating and transportation sector. Beneficial electrification includes heat pumps, electric vehicles, energy storage and smart appliances. Increased electricity end use coupled with renewable energy generation and storage may create challenges for the electric grid and for homes. A modern electric grid is necessary to maintain reliability and affordability. Homes and businesses may need upgrades to electric service to ensure adequate ampage for increased electrical appliances like EV charging and cold climate heat pumps.. Smart Grid technology coupled with education, behavior change, price signaling (e.g., time of use rates), and load control technologies can help reduce peak demand and defer substation upgrades, which can result in substantial cost saving.

- To prepare for electric / zero-emission vehicles accounting for 100% of light-duty vehicle sales by 2035, electric vehicle charging station equipment (EVSE) should be installed as part of new development or redevelopment to ensure charging is available at homes, businesses, and workplaces as these are the locations where people are most likely to be charging their vehicles given current technology. Retrofitting existing multi-family properties with EVSE and the necessary electric service ampage is imperative to ensure that electric vehicle adoption is equitable, and all drivers have adequate access to charging infrastructure. Multi-unit dwelling (MUD) residents in apartments and condominiums often have more challenges in gaining access to home EV charging due to parking issues and cost. Renters in MUDs have additional barriers to long-term investments in charging infrastructure for shorter-term housing. In addition, policies and pricing structures to encourage off peak charging need to be considered to mitigate grid constraints associated with electric vehicle charging.
- It is necessary to shift the heating sector away from fossil fuel use. Promoting cold climate heat pumps (powered by a renewable electric grid), in addition to sustainably harvested wood/biomass systems, biogas and geothermal heating systems, is key to meeting the Global Warming Solutions Act requirements and the 2022 CEP goals. Currently natural gas prices are not cost competitive with electricity so customers are not likely to save money by replacing existing natural gas heating systems with cold climate heat pumps, except in the summer for cooling. Switching from fuel oil or propane to a heat pump system will save customers money and protect customers from price volatility. Net-zero buildings and cold climate heat pumps as the primary fuel source in new buildings will help the region meet its goal of shifting the heating sector away from fossil fuels.
- VGS's comprehensive strategy for NetZero by 2050, with an immediate goal of reducing GHG emissions for customers by 30% by 2030, is critical to achieving the State's energy and climate goals. Expanding renewable natural gas to make up 20% of the supply mix by 2030 is also part of VGS's strategy.

Transition to Renewable Energy

- In analyzing Chittenden County's ability to meet the 90% renewable energy by 2050 goal the Long-Range Energy Alternatives (LEAP) model was utilized to understand the type and amount of fuel needed to meet the State's energy goals. It is important to note that Chittenden County's LEAP scenario reflects 87% renewable by 2050. Although the level of renewability is not 90%, the ECOS Plan is deemed to be consistent with the State energy goals because the policy statements within this plan are aligned with the framework for advancing state energy goals and Chittenden County is well suited to move in the right direction. See Supplement 6 for more information on LEAP.
- The LEAP model shows a significant reduction in natural gas as one scenario to achieve the ambitious 90% renewable energy by 2050 goal in Chittenden County. This scenario will be challenging because of the region's current reliance on natural gas for heating in significant portions of Chittenden County, recent and planned service area expansions, and the relatively low cost of the fuel source. The natural gas infrastructure in Chittenden County also represents a significant investment on the part of utility companies, and much of the County's dense residential and commercial growth is dependent on this fuel. Therefore, fulfillment of this scenario requires aggressive weatherization of the region's building stock, switching to heat pumps and other renewable heating technologies. The shift to renewable energy sources for heating will also require the involvement of private-sector energy developers, regional and state-wide utilities, and individual energy users; as well as changes to state energy policy implementation. Despite challenges related to

natural gas, CCRPC will work to the best of our ability to meet the 90x2050 goal via the actions discussed in Strategy 2. It is important to note fuel use in the aviation sector was removed from CCRPC's LEAP analysis and modeling of future energy use, as this is a sector the region will have little influence over.

- A transition to renewable energy will drive down carbon emissions. This will require electrifying the heating and transportation sectors and generating more electricity from renewable sources to power these sectors.
- As we transition to more renewables, grid resilience is valued by both residents and business, especially because Vermont's climate makes us vulnerable to grid outages. When storage is coupled with distributed energy generation it can provide a source of backup power and also offer the potential to minimize loads at peak times, thereby reducing energy costs.
- A Vermont statute passed in 2015, Act 56, established a renewable energy standard (RES) which requires Vermont's Electric Utilities to be 55% renewable by 2017, 75% by 2032, and 90% by 2050. Also as part of Act 56, electric utilities need to work with customers to reduce fossil fuel and decrease carbon emissions from transportation and thermal heating by offering new innovative programs and services to their customers. The electric utilities subject to Act 56 are offering innovative products for electrification and incentives to meet the statute and deliver innovation. Green Mountain Power's supply is now 100% carbon free and 68% renewable now and will be 100% renewable by 2030. Burlington Electric Department's portfolio is also 100% renewable. Vermont Electric Co-op plans to meet or exceed its RES obligations by 2030.

Renewable Energy Generation

- Chittenden County has many non-fossil fuel based, renewable energy production sites owned by utilities, private parties, and municipalities. Reliable, cost effective, and environmentally sustainable energy availability is critical to support the economy and natural resources of Chittenden County.
- Vermont's rural nature offers challenges for the transmission and distribution of energy. It is important to maintain and develop an energy production, transmission, and distribution infrastructure in Chittenden County that is efficient, reliable, cost-effective, and environmentally responsible. Current energy distribution projects include: Extension of 3-phase power in south Hinesburg along VT116 by Green Mountain Power; and the City of Burlington and partners are planning to advance a district heating system using McNeil's waste heat for distribution to the University of Vermont Medical Center. See the CEDS Project list in Supplement 4 for cost estimates, funding sources and proposed timelines for these projects.
- The cost of electricity is impacted by the distance it travels. When electricity is transmitted over long distances a significant amount of electricity is lost. Locating distributed generation near electric loads reduces transmission losses and could result in more cost-effective retail electricity rates.
- Every three years, Vermont Electric Power Company (VELCO), the State's transmission utility, completes a Long-range Transmission Plan. This plan identifies transmission-constrained areas and reliability concerns. The plan also identifies potential infrastructure projects that may be needed to address identified concerns. The 2021 Long-range Transmission Plan identifies several projects within Chittenden County, and in areas immediately adjacent to the County, that will likely need to be installed over the next decade due to anticipated growth in electric demand due to mass electrification and due to the State's increasing reliance on distributed generation (See page 38-39:

https://www.velco.com/assets/documents/2021%20VL RTP%20to%20PUC_FINAL.pdf).

Adequate transmission and distribution grids that are able to accommodate the planned increase in electricity use, and reduces energy loss, are necessary to meet the goals of this section.

- CCRPC has undergone a process to look at areas suitable for solar and wind energy generation to determine our ability to meet the 90% renewable by 2050 goal. See the key indicators below for an analysis of existing generation and future generation possibilities.

Energy and Land-Use Planning

- One of the most impactful ways to reduce greenhouse gas emissions is to enable more compact walkable neighborhoods in areas planned for growth. Chittenden County, perhaps more so than other regions of the State, can achieve great energy efficiency and GHG benefits because of development density and infill development goals. Compact walkable neighborhoods encourage smaller building footprints with lower heating and cooling needs, promotes efficient travel that is less dependent on cars and provides more opportunity for walking, biking, and transit. Compact development also decreases development pressure on Vermont’s working and natural landscapes, preserving land for existing and future carbon sequestration and storage.
- Dense population centers make distributed generation easier, because energy can be produced near significant numbers of customers. Additionally, portions of the county’s dense land use pattern may allow for innovative energy solutions, such as district heating and microgrids.
- In 2016, the Vermont Legislature Enacted Act 174 to improve energy planning and give town and regional plans greater weight or “substantial deference” in Public Service Board proceedings. As of 2022, Burlington, Charlotte, Colchester, Essex Junction, Huntington, Jericho, Richmond, Shelburne, Williston, Winooski, Hinesburg, Underhill, and Westford have adopted enhanced energy plans.

Key Indicators

Additional indicators can be found on the ECOS Scorecard.

Indicators	Location
Annual Natural Gas Consumption	Scorecard
Annual Electricity Consumption	Scorecard
Percent of Electricity Saved	Scorecard
Renewable Energy Capacity Sited in Chittenden County	Scorecard

See Supplement 6 for the complete Act 174 Energy Planning Analysis and Targets

STRATEGY

CLIMATE/ENERGY STRATEGY: Move the Region's energy system to meet the goals of Vermont's energy and greenhouse gas reduction goals while balancing economic vitality and affordability.

- a. Reduce energy consumption and decrease greenhouse gas emissions, to support the State's energy goals in the 2022 Vermont Comprehensive Energy Plan and the Global Warming Solutions Act as incorporated by reference here:
 - Meet the Global Warming Solutions Act greenhouse gas emissions (GHG) requirements:
 - 26% reduction from 2005 levels by 2025
 - 40% reduction from 1990 levels by 2030
 - 80% reduction from 1990 levels by 2050
 - Weatherize 120,000 Vermont homes by 2030 (relative to the 2008 baseline)
 - Meet 90% of Vermont's energy from renewable sources by 2050
 - Intermediate goals of 25% of energy from renewable sources by 2025 and 45% by 2035.
 - In the transportation sector, 10% of energy needs will be from renewable energy by 2025, and 45% by 2040. Zero-emission vehicles account for 100% of light-duty vehicle sales by 2035.
 - In the thermal sector, 30% of energy needs will be from renewable energy by 2025, and 70% by 2042. Weatherizing 120,000 households by 2030. Achieve net-zero ready construction for newly constructed buildings by 2030.
 - In the electric sector, be 100% decarbonized and at least 75% renewable by 2032.
- i. Continue partnerships with VGS, Burlington Electric Department, Efficiency Vermont and the Champlain Valley Office of Economic Opportunity Weatherization Assistance Program to promote weatherization and energy efficiency programs and incentives for homes and businesses.
- ii. Decrease fossil fuel consumption in the thermal sector by working with partners such as Green Mountain Power, Efficiency Vermont, Burlington Electric Department, and other energy service providers to educate developers, businesses, and homeowners about cold climate heat pumps, heat pump hot water heaters, wood heating, biofuels, and geothermal systems. Reduce fossil fuel consumption in the transportation sector, through transportation demand management (TDM) and electric vehicle promotion strategies outlined in Part 6 of this section and in the Metropolitan Transportation Plan (MTP) included in this plan.
- iii. Collaborate with the State of Vermont and utilities to ensure that state energy policy implementation (i.e. permits for non-renewable fuels) reflect state energy goals and our policies in Section b.
- iv. Encourage the State of Vermont to implement a single building energy code standard for all new development and retrofits that requires enforcement at the state level, accelerates net zero building practices and electric vehicle charging infrastructure installations in a manner that ensures progress is made on the Global Warming Solutions Act requirements.

- v. Provide assistance to municipalities when requested to enhance town plans to be consistent with Act 174 standards for the purpose of enabling municipalities the ability to gain substantial deference in the Certificate of Public Good Section 248 process. This assistance will include working with municipalities to identify natural, cultural, historic, or scenic resources to be protected from all development types, identify preferred locations for renewable energy generation facilities, and encourage municipalities to lead by example with respect to energy efficiency for buildings and transportation and the deployment of renewable energy.
 - vi. Support a wide variety of renewable energy generation types, including storage, sustainable uses of biomass for heating, passive solar building design, bio-digesters for electricity generation, photovoltaic solar, wind turbines, and optimizing the energy potential for existing hydro-electric dams.
 - vii. Work with the utilities on long-range infrastructure capacity planning.
 - viii. Support in-place upgrades of existing facilities, including existing renewable energy generation, storage, transmission lines, distribution lines and substations as needed to reliably serve municipalities and the region.
 - ix. Support changes in federal, state, and local policies to achieve the state of Vermont Comprehensive Energy Plan goals.
 - x. Provide assistance to municipalities on implementing enhanced energy plans.
 - xi. Support investments in distribution and transmission infrastructure upgrades necessary for handling increased electricity loads and renewable energy generation.
 - xii. Advocate for the State, utilities, and workforce/business development organizations to address weatherization workforce challenges identified in the 2021 Weatherization Workforce Report. Promote the expansion of current workforce training programs that are effective, such as ReSOURCE's weatherization and HVAC 101 training programs.
 - xiii. Address barriers and empower multi-unit housing owners to retrofit parking to include electric vehicle charging equipment that is adequate to advance widespread electric vehicle adoption.
 - xiv. Assist municipalities with revising zoning regulations to enable more compact walkable neighborhoods in areas planned for growth.
- b. CCRPC supports the generation of new renewable energy in the County to meet the Vermont Comprehensive Energy Plan's goal of using 90% renewable energy by 2050, in a manner that is cost effective and respects the natural environment. Specifically, Chittenden County needs to generate a total of 756,250 MWh (Megawatt hours) of energy to meet the low target (a 51% increase), or 1,265,134 MWh to meet the high target (a 152% increase). Currently, Chittenden County generates 501,661 MWh of renewable energy. The targets are technology neutral, meaning that they can be met with any mix of technologies. The following statements are CCRPC's renewable energy generation facility siting policies and will inform CCRPC's preferred sites policy.

Constraint Policies: Ground mounted renewable energy generation is constrained in certain areas due to state and local restrictions on development.

- i. Site renewable energy generation to avoid state and local known constraints and to minimize impacts to state and local possible constraints, as defined in Strategy 3, Action 1.f, and Strategy 4, Action 1.f,

and Action 2.e. Renewable energy generation sited on existing structures or parking lots complies with this policy.

- ii. Site ground-mounted solar development in accordance with setback standards as defined in [30 V.S.A. §248\(s\)](#) and municipal screening requirements adopted in accordance with [30 V.S.A. §248\(b\)\(B\)](#).

Suitability Policies: After considering the constraints referenced above and found in Supplement 3, different levels of suitability exist for different scales and types of renewable energy generation depending on location within the County. To determine an appropriate location for a facility, first review the constraints above and then look at the polices below to determine how and where CCRPC encourages renewable energy generation facilities. CCRPC recommends the location of renewable energy generation facilities in accordance with the relevant guidelines below. Inability to meet these guidelines does not necessarily preclude the ability to develop renewable energy generation development.

- i. Locate energy generation proximate to existing distribution and transmission infrastructure with adequate capacity and near areas with high electric load (See Green Mountain Power's [Solar Map](#) and Burlington Electric Department's [Distributed Generation Map](#))
- ii. Locate renewable energy generation in areas designated by a municipality in an adopted plan for such use, including specific preferred sites for solar (state preferred sites are mapped on Map 5).
- iii. Locate solar generation (including but not limited to net metering) on previously impacted areas (such as, parking lots, previously developed sites, brownfields, State regulated landfills with post-closure certification, gravel pits/quarries, or on or near existing structures).
- iv. Locate ground-mounted solar larger than 15 kW AC and wind turbines with a hub height larger than 30 meters (98 ft.) outside of state designated village centers, growth centers, downtowns, new town centers, neighborhood development areas, and historic districts on the State or National Register.
- v. Locate ground-mounted solar generation, and small-scale wind (1 or 2 turbines, up to 50 meters (164 ft.) in Chittenden County's areas planned for growth, while allowing infill development wherever reasonably practical.
- vi. Locate wind generation in areas with high wind potential, such as the prime and base wind potential areas shown on Map 7.