

Project #1: Cumulative Impact Research in Support of the Interagency Environmental Justice Committee and the Environmental Justice Advisory Council

Partners: Maggie Gendron, Deputy Secretary and Kim Greenwood, Chief Operations Officer, Vermont Agency of Natural Resources

Background Context

The VT legislature passed the [Environmental Justice Bill](#) (Act 154) in the 2022 legislative session, which requires 10 state agencies to develop community engagement plans, consider cumulative environmental impacts in decision making, and track the distribution of environmental benefits investments with a goal of proportionally investing in environmental justice focus populations. The Bill also creates a community-informed Environmental Justice Advisory Council and Interagency Environmental Justice Committee and requires ANR to develop an Environmental Justice Mapping Tool.

The notion of cumulative environmental impacts is addressed in the Bill in several ways. First, one of the key Bill findings states that, *“The cumulative impacts of environmental harms disproportionately and adversely impact the health of BIPOC and communities with low income, with climate change functioning as a threat multiplier. These disproportionate adverse impacts are exacerbated by lack of access to affordable energy, healthy food, green spaces, and other environmental benefits.”*

Second, it requires all covered agencies to *“consider cumulative environmental impacts, and access to environmental benefits, when making decisions about the environment, energy, climate, and public health projects; facilities and infrastructure; and associated funding.”*

Lastly, the ANR (in consultation with the Advisory Council and Interagency Committee) need to:

- *“define cumulative environmental impacts;*
- *implement consideration of cumulative environmental impacts within the Agency of Natural Resources; and*
- *inform how the public and the covered agencies implement the consideration of cumulative environmental impacts and use the environmental justice mapping tool.”*

Research Need

This project team will conduct research in support of the Agency of Natural Resources, the Environmental Justice Advisory Council, and the Interagency Environmental Justice Committee as they work to understand, define, and apply cumulative environmental impact to decision making as set forth in Act 154.

There are three key goals for your research:

- 1) Conduct a series of interviews with ANR, Vermont Department of Health, and Vermont Agency of Transportation staff to develop a picture of the current internal knowledge and understanding of this concept, which vary widely based on the areas of focus of different arms of state government. Preparation for this interview work should include conversations with:
 - a. The Department of Environmental Conservation Environmental Justice subcommittee
 - b. Karla Raimundi, Director of Civil Rights and Justice, Vermont Agency of Natural Resources
 - c. The Agency of Natural Resources’ legal research team

- d. The legislators who crafted this bill, including Senator Ram-Hinsdale and Senator Bray and Representative Dolan
- 2) Develop a series of case studies on 3-4 states across the country working to either develop or apply environmental justice laws to highlight best practices, successes, and challenges related to defining, implementing, and applying the concept of cumulative impacts. These case studies will help illuminate best practices and strategies that you can recommend for Vermont decision making.
 - a. Tentative list of states your partners are interested in include: WA (what can you learn from their struggles with stakeholder engagement?), MA (what can you learn from their legislative challenges?), NJ (how have they linked environment justice directly to permitting approvals and denials?) and ME (no EJ bill yet in place, but much to learn from how they are thinking about developing this work).
 - 3) Through a synthesis of your research and interviews, identify potential instances for Vermont's context where special attention will need to be paid as this work moves forward. Where will additional thought, time, and relationship-building be needed? How can these conversations be conducted in ways that honor all perspectives, but don't stall or weigh down the process? What recommendations can you provide for how to address these needs? One area of tension your partners have already identified is how to / can you disentangle environmental justice from the broader social justice environment as well as the framing of climate justice utilized by indigenous partners in this work.
 - a. One starting point for tackling this large but incredibly important question is talking with the Just Transitions Subcommittee of the Climate Council. After these initial conversations, your partners are most interested in having you engage with environmental justice communities to share back with the Agency how the range of people that they are committed to supporting and serving consider these terms.

The format for your final products will include sharing the results of your research through a written report and a culminating presentation to the Council and Committee. As your schedules allow, this team may also have the opportunity to attend and observe Council and Committee meetings during the semester.

Project #2: Language Access Planning to Ensure Meaningful Access to Social Services

Primary Partners: Addie Chris, Annual Fund and Communications Manager, Champlain Valley Office of Economic Opportunity; Jason Rouse, Director of Philanthropy and Communications, Champlain Valley Office of Economic Opportunity

Secondary Partners: Mark Demers, Associate Director of Addison Community Action; Stephanie Davison, Director of Quality Improvement & Organizational Development, Champlain Valley Office of Economic Opportunity; Virginie Diambou, Racial Equity Director, Champlain Valley Office of Economic Opportunity

Background Context

As noted in Project Statement #1, The VT legislature passed the [Environmental Justice Bill](#) (Act 154) in the 2022 legislative session, which requires 10 state agencies to develop community engagement plans, consider cumulative environmental burdens in decision making, and track the distribution of environmental benefits investments with a goal of proportionally investing in environmental justice focus populations.

Further, Act 154 includes the development and implementation of a Language Access Plan (LAP). This plan—vetted through a series of public comment periods and finalized in December of 2022—will guide state agencies on how they deliver information and services to persons with limited English proficiency (LEP) and persons with varying levels of hearing, sight, or speech loss and other communication needs.

Since a core goal of the LAP is to identify and support persons with limited English proficiency and ensure that they are provided with meaningful access to offered programs, services, and activities, a range of non-governmental social service organizations in our region are also giving attention to how they can address and support the language access aspect—as well as other aspects—of Act 154. One of the more prominent entities engaging with this work is the [Champlain Valley Office of Economic Opportunity](#) (CVOEO) whose mission is to, “address fundamental issues of economic, social, racial, and environmental justice and work with people to achieve economic independence.” Through an impressive array of distinct yet interconnected programs, they work to, “provide individuals and families with the basic needs of food, fuel and housing support in times of crisis, and help them acquire the necessary education, financial skills and assets to build a stable future in which they thrive.” Structurally, their programs primarily operate in four counties in Northwest Vermont: Addison, Chittenden, Franklin, and Grand Isle. Three regional community action offices lead program implementation including Addison County Community Action located here in Middlebury. In addition, their Housing Advocacy Programs serve residents statewide and their Office of Racial Equity provides advocacy, support and technical assistance throughout Vermont.

Research Need

As an organization, CVOEO already has a focus on language access and racial equity in an effort to dissolve barriers to those seeking to utilize services. This includes a focus on providing materials in the 9 languages represented in their service areas, though this is a complex process given their range of programs and application forms associated with each program. Further, they utilize Google Translate functionality for part of their webpages.

However, there remains work to be done and your partners at CVOEO in their Philanthropy and Communications team agree that there is a critical need for ensuring that information about their services is accessible and adequately reaching the populations they seek to serve and support.

Research goals for this team include:

- Produce an English-Spanish translation project of CVOEO's current program brochure. This will allow you to develop a baseline understanding of CVOEO's services and will inform the desired assessment aspects of this project detailed below.
- Conduct an assessment—through surveys and/or direct interview work—of how non-English speaking populations, with a specific focus on Spanish-speaking populations, in Addison County understand (or do not) CVOEO program offerings to assess the accessibility of program information and gauge the successes and challenges of current information sharing. This information will be used to propose/generate content to share with the Addison County community and larger CVOEO populations.
- Through the process of your survey and interview work (inclusive of survey/interview instrument development), determine what would be most generative for content development and amplifying stories. Develop draft content (e.g., written stories, social media posts, content copy) for external audiences to share with the CVOEO Philanthropy and Communications team to potentially be leveraged for communication efforts.
- Informed by your survey and interview results, prepare suggestions for future and ongoing assessment work beyond your initial scope, detail recommendations for ongoing effective program communication, and share ideas for future creative content development.

As your time allows, some additional needs in the translation space include:

- One of CVOEO's program areas focuses on food access and they have a close working relationship with ACORN and their [Farmacy Program](#). ACORN would value translated materials for this aspect of their web page.
- This team could also assist in laying the groundwork for an ongoing collaboration with summer language programs for brochure and program translation in additional needed languages.

Project #3: Residential Decarbonization

Partner: Jean Terwilliger, AIA Architect and Board Member of Climate Economy Action Center of Addison County

Resource Contacts: Other members of CEAC Board and Maddison Shropshire, Addison County Regional Planning Commission Energy Planner

Background Context

The [Climate Economy Action Center of Addison County](#) is committed to “promoting a healthy economy through deep reductions in greenhouse gas emissions in Addison County.” Informed through almost two years of community engagement and the development of a county-wide GHG inventory, CEAC developed and published a [Climate Action Plan](#) (CAP) for the county in June of 2022 in order to chart a pathway for Addison County do its part in achieving the GHG reductions stipulated in Vermont’s Global Warming Solutions Act. The overall strategies for GHG reductions focus on three sectors: Buildings & Energy, Transportation & Equipment, and Agriculture and Forestry. CEAC seeks to move from the planning to implementation phase through the establishment and support of locally-led “Climate Action Teams.” This project group will support the work of one of the first teams to get underway with a focus on residential electrification and decarbonization.

The core strategies in the Buildings and Energy sector of the CAP relevant to this project include:

- Increase the proportion of existing residential and commercial and industrial buildings that are 100% electrified (with no on-site fossil fuel combustion except as emergency backup) to 50% by 2030
- Reduce the share of Addison County’s low-income population spending more than 6% of household income on energy from 30% in 2017 to 15% in 2030, through conservation and energy efficiency renovations and equipment updates
- Decrease annual energy consumption by all buildings (residential, commercial, and industrial, including energy used for industrial processes) by 25% by 2030
- Increase the percentage of new residential and commercial buildings that are net zero ready to 100% by 2030

Core equity considerations guiding this work (see Efficiency Vermont’s work on [Energy Burden](#) for additional details):

- Often, families that live in properties that are not energy efficient are also those that can least afford high-cost utility bills. These households may lack the ability to pay for energy efficiency improvements or access renewable energy options.
- Renters of both single-family homes as well as multi-family housing usually do not have the ability to implement energy efficiency measures to the buildings they live in to gain the benefits of energy efficiency.
- Families with fewer resources must dedicate a disproportionately larger share of their income towards energy costs, which exacerbates other vulnerabilities such as food insecurity, inability to pay rent, and over exposure to heat and extreme cold.

Research Need

This project team will focus on the first GHG reduction strategy detailed above for residential buildings, i.e., *“Increase the proportion of existing residential buildings that are 100% electrified to 50% by 2030.”* The scale of work needed to truly meet this goal is daunting – over 5000 weatherization efforts and over 7000 heat-pump installations, ideally paired with and guided by hundreds of energy audits increasing exponentially as we near 2030.

In service of assessing current capacity, prioritizing work, and addressing gaps, this team will:

- Create a database of relevant Addison County contractors and suppliers (building upon a starting list your partner has developed)
- Develop and conduct surveys and/or interviews with these contractors to understand 1) how / if they are introducing to customers the ideas of energy efficiency, electrification, and decarbonization and 2) current capacity barriers and ideas for overcoming these barriers. Themes to explore here include needed contractor trainings, increasing the number of energy auditors, effectively targeting outreach at “end-of-life” equipment replacement, and how best to coordinate the timing of work amongst plumbers, electricians, re-siding contractors etc. to ensure optimal cost-effectiveness.
- Contractors represent one category of stakeholders for this work with homeowners representing another. CEAC knows that they will need to conduct extensive outreach across communities in our county to persuade residents of the values and benefits associated with electrification and decarbonization. With a focus on the equity considerations detailed above and in consultation with state and regional social services providers, provide a spatially organized assessment of where communications and outreach efforts should be prioritized for the early phases of this work to ensure benefits can be realized by those who are most in need.
- Share your recommendations for bridging the gaps identified through your contractor outreach and the equity-based needs identified in your spatial assessment to guide the next steps of this Climate Action Team.
 - This could include, based on the interests and backgrounds of students in this team, the development of estimates of per-home costs for this retrofit work in Vermont given recent inflation of material and labor costs (your contractor outreach could inform these costs). This would allow the Climate Action team to 1) most effectively connect homeowners with the financial resources and incentives being aggregated by Efficiency Vermont, Addison County Regional Planning Commission, and entities such as [Rewiring America](#) that detail new IRA funding streams and 2) identify deficiencies in per-home funding caps or limits based on percentages of median income.
 - Another area of opportunity could be researching effective messages for homeowner outreach and developing a mailer and other messaging for Addison County residents.

Project #4: Unhoused Individuals Experiences with Extreme Heat: Storytelling to Advance Health Equity

Community Partners: Jared Ulmer, Climate & Health Program Manager, Vermont Department of Health; Amy Redman, Health Equity Team Lead, Environmental Health, Vermont Department of Health

Resource Contact: Beate Ankjaer-Jensen, Public Health Specialist – Emergency Preparedness, Vermont Department of Health Middlebury Office

Background / Context

Based on Vermont's most current (2018) Hazard Mitigation Plan's [Extreme Heat Section](#), "the primary impact of extreme heat or prolonged periods of hot weather is to human life. Hot conditions, especially when combined with sun and high humidity, can limit the body's ability to thermoregulate properly. Prolonged exposure to hot conditions can lead to heat cramps, heat exhaustion, heat stroke, or exacerbate other pre-existing medical conditions. Some of these impacts require medical attention and can be fatal if left untreated."

Addressing these and many other climate-related health impacts is the primary focus of the Vermont Department of Health's [Climate and Health Program](#) – work that is unfortunately increasingly necessary given Vermont's trend toward warmer and wetter weather. The northeast region of the country is the fastest-warming area in the United States and is warming at a rate 50% greater than the global average. Climate change models for Vermont predict that by the end of the century, the number of days where temperatures reach 87°F or warmer are expected to increase from about six per year currently to more than 20 per year.¹

While the health effects of climate change affect all Vermonters, the Health Department has identified populations that are disproportionately affected. Populations at highest risk of experiencing a heat-related illness include:²

- People with more exposure to hot conditions, including people without access to air conditioning, outdoor workers and hobbyists, people experiencing homelessness, and urban residents
- People that are particularly sensitive to heat exposure, including anyone not acclimated to hot weather, older adults and young children, pregnant women, people that are overweight or have a chronic medical condition, people using drugs, alcohol or some prescription medications, and people who experienced a prior heat illness
- People with limited adaptation resources, including people who live alone, have limited transportation options, are unable to purchase or use an air conditioner, or are unable to access community cooling resources

Research Description

Your partner has identified a key goal for this team's work: *to learn more about how hot weather affects Vermonters experiencing homelessness and what strategies or resources are needed to support this population during hot weather.*

Here are some statistics that underscore the importance of this work. Based on the annual [Point in Time Count of Homelessness in Vermont](#) (a must read for this team):

¹ https://www.healthvermont.gov/sites/default/files/documents/pdf/ENV_CH_HeatReport.pdf

² <https://www.healthvermont.gov/health-environment/climate-health/vulnerable-populations>

- “January 2022 found a 7.3% increase in persons experiencing homelessness in Vermont compared to the prior year, from 2,591 individuals to 2,780. This comes on the heels of a 133% increase from 2020 (pre-pandemic) to 2021.
- The number of persons experiencing homelessness in a household with children increased by 36% in compared to 2021; there was a 5% increase of people in households with adults only over the same time period.
- BIPOC (Black, Indigenous, and People of Color) Vermonters disproportionately experienced homelessness in 2022 compared to the general population in both Chittenden County and Statewide.”

Building on [work from a ENVS0401 team from last semester](#) this team’s efforts will focus on using qualitative research methods to contextualize and humanize this issue—a critical and timely approach for advancing health equity.

This team’s research will aim to answer these questions:

- How do unhoused Vermonters experience health or quality-of-life impacts related to increasingly hot weather in Vermont?
- What resources do unhoused Vermonters currently use to help stay safe during hot weather? What additional resources are needed?
- Have unhoused Vermonters been increasingly impacted by corresponding heat-related issues such as increased tick and mosquito-borne illnesses, water quality issues, and others?

Your partner has identified the following strategies to address these questions:

- To ground your work, review the literature regarding why/how qualitative work and storytelling in particular are critical for health equity.
- Interview unhoused individuals residing in Vermont to learn about what heat-related impacts they have experienced, and what resources they need to stay safe during hot weather. Interviewees could be a mix of individuals currently utilizing shelter services and people who aren’t. A range of social services providers may be able to connect you with the latter.
- Expand upon interviews with homeless shelter directors, human service providers, police/EMS, or others to learn more about the heat-related impacts they have observed, as well as their plans, actions, and needed resources for supporting clients during hot weather (i.e. with the distribution of “cooling kits” or setting up misting/cooling tents)?

This team’s final products should be in the format of multi-media stories that can be shared via the Vermont Department of Health’s web page, i.e., a photo essay, podcasts, short documentary video, or interview audio clips. This should be paired with a brief technical report summarizing project activities and methods, key takeaway themes, and recommendation for next steps.

Suggested background reading and references

- [Hot weather and health impacts](#) (Vermont Department of Health)
- [Homeless in the heat: How heat waves impact Vermont's most vulnerable residents](#) (Burlington Free Press)
- [‘All I have left’: The struggle of seeking shelter with pets](#) (VT Digger)
- [Extreme heat can be deadly for people who are homeless](#) (PBS News Hour)

Suggested community interview partners

- [Charter House Coalition](#) (Middlebury)
- [John Graham Housing & Services](#) (Vergennes)
- [Helping Overcome Poverty's Effects](#) (Middlebury)
- [ANEW Place](#) (Burlington)
- [Committee on Temporary Shelter](#) (Burlington)
- [Spectrum Youth & Family](#) (Burlington)
- [Champlain Valley Office of Economic Opportunity](#) (Addison & Chittenden Counties)
- [United Way of Addison County](#)
- [Economic Services Division](#) (Vermont Department for Children and Families)