

## Why should Vermont communities prepare for hot weather?

Harmful hot weather occurs far less frequently than cold weather in Vermont, but we tend to be much less prepared for hot weather when it does occur. The result is that a similar number of Vermonters visit the emergency room or call 9-1-1 each year for heat-related illnesses as do for cold-related illnesses. Heat-related illnesses kill more people in the US each year than any other type of weather event. Over 1,400 people died during a 2021 heat wave in the Northwestern US and Western Canada, an area with a similar summer climate to Vermont.

Climate change is increasing heat-related health risks in Vermont. Average temperatures in Vermont have already risen by 3 °F since 1900<sup>1</sup>, resulting in more days each year when heat may impact health. At the Burlington International Airport, hot days (exceeding 90 °F) and warm nights (above 70 °F) have occurred more than twice as often since 2010, as compared to the previous 60 years<sup>2</sup>. Average temperatures in Vermont are projected to increase by an additional 3 to 12 °F by 2100<sup>1</sup>, suggesting that we can expect more frequent and harmful hot weather in the future.

Vermont communities can enhance their emergency planning efforts for the growing threat of harmful hot weather. This guide provides information on who is most affected by hot weather, an overview of recommended actions to consider including in local emergency plans, and a template for hot weather emergency planning.

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<sup>1</sup> <https://statesummaries.ncics.org/chapter/vt/>

<sup>2</sup> <https://www.ncdc.noaa.gov/cdo-web/search>

## Hot weather and health impacts in Vermont

Vermont data indicate that Vermont residents experience heat-related illnesses at temperatures lower than in many other parts of the country. This is likely related to how infrequently hot weather occurs in Vermont, which has several impacts:

- We do not experience enough hot weather for people’s bodies to adapt to hotter conditions,
- Many homes in Vermont are not adequately weatherized and do not have air conditioning,
- At a state and community level, we have not developed plans and policies needed to be prepared for hot weather,
- At an individual level, it can be hard to adapt behaviors to stay safe during hot weather, and
- Vermont has a large population of older adults, who are at more risk for heat-related illnesses.

Between 2009 and 2019, there were an average of 104 heat-related emergency department (ED) visits per year and 12 total heat-related deaths across the state. Heat-related ED visits have trended up over that period by more than 2 additional ED visits each year. 2018 was the deadliest year in recent record, with 173 heat-related ED visits and 5 heat-related deaths in total, including 90 ED visits and 4 deaths during a 6-day heat wave in early July. These numbers only include ED visits and deaths specifically attributed to heat in a hospital or death record. See Vermont’s [Environmental Public Health Tracking portal](#) for county-level ED data.

It is widely known that heat-related ED visits and deaths are undercounted, possibly by as much as a factor of 10, as heat is known to worsen a variety of chronic medical conditions, including diabetes, kidney, cardiovascular, respiratory, and cerebrovascular diseases.

Heat-related illnesses mainly occur between May and September. It takes time for our bodies to adjust to warmer weather, so unseasonably hot days early in the year can be particularly harmful.

	May	June	July	August	September
<b>Average daily high heat index* (° F), Burlington Airport</b>	68°	75°	83°	81°	72°
<b>Heat-related ED visits, statewide total, per month (2009-2019)</b>	14	19	47	17	7

\* “Heat index” estimates what it feels like after accounting for both air temperature and humidity.

The risk for heat-related illnesses and deaths increases substantially when the heat index reaches 90° F or above in Burlington, which is equivalent to about 85° F in cooler places like Newport. All ED visits and deaths (related to any cause) increase as the heat index rises, as many chronic physical and mental health conditions are worsened by heat exposure. In addition to health impacts, hot weather also results in reduced productivity, sleep difficulties, and increased aggression.

Max heat index (° F), Burlington Airport	Days per year*	Heat-related ED visits, per day*	Heat-related deaths, total*	All ED visits, per day*	All deaths, per day*
<b>Less than 80°</b>	97	0.2	2	742	12.9
<b>80° - 89°</b>	46	1	2	778	13.3
<b>90° - 94°</b>	6	3	2	789	14.1
<b>95° or hotter</b>	3	7	6	795	14.2

\* Heat-related data are reported for May-September, 2009-2019. ED visits and deaths are statewide totals.

## Who is at highest risk during hot weather?

Although all Vermonters can be affected by hot weather, there are specific factors that can increase an individual's risk for experiencing heat-related health impacts. The risk for heat illnesses tends to be greater for the following groups of people:

- **People with more exposure to hot conditions** – people without access to air conditioning, outdoor workers and hobbyists, people experiencing homelessness, and urban residents
- **People that are particularly sensitive to heat exposure** – 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** – 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

The most severe heat-related impacts in Vermont have been experienced by **older adults**. Ten of the 12 people that died in Vermont from a heat-related cause between 2009 and 2019 were over the age of 50. All ten of those heat-related deaths occurred at the decedent's home, and many of the decedents lived alone. This underscores the compounding nature of the risk factors described above – people most likely to die during hot weather in Vermont tend to be particularly sensitive to heat (older adults), AND exposed to hot conditions (housing without air conditioning), AND lack adaptation resources (living alone).

**Teens and young adults that are active outdoors** have also experienced severe heat-related impacts in Vermont. Although most people in these age groups are not particularly sensitive to heat exposure, they tend to be very active working and playing outside. The highest rate of heat-related ED visits from 2009 to 2019 was experienced by teens and adults between 15 and 24 years of age, closely followed by adults between 25 and 44. Two of the 12 people that died in Vermont from a heat-related cause during this period were adults between 25 and 44.

Heat-related illnesses and deaths have disproportionately affected **people living in urban areas**<sup>3</sup> in Vermont. Only about one-third of Vermonters live in urban areas, but 10 of the 12 heat-related deaths from 2009-2019 occurred in municipalities that are at least partially urban. Urban heat risk data collected by Health Department volunteers in 2020<sup>4</sup> were used to estimate that on a hot day, the heat index can be as much as 15 °F hotter in the most urban locations in Vermont compared to largely undeveloped and wooded locations. Urban areas also take longer to cool off at night.

Municipal heat risk data can be found in the [Vermont Heat Vulnerability Index](#). The index includes 17 risk factors grouped into six different themes: population, socioeconomic, health, environmental, climate acclimation, and historic heat illness. This information can be helpful as a starting point for local preparedness planning but should be supplemented by local information about specific individuals, risk factors, and resource availability.

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<sup>3</sup> The 2010 US Census identified [22 urban areas in Vermont](#) with at least 2,500 population surrounding a dense core of at least 1,000 people per square mile

<sup>4</sup> <https://www.healthvermont.gov/environment/climate/urban-heat-islands-and-health>

## Planning for hot weather events

Throughout this guidance, we assume that the most likely place for communities to address hot weather emergencies is through their [Local Emergency Management Plan](#) (LEMP). Hot weather plans could either be considered in the all-hazards body of the LEMP or addressed in an “Incident Action Plan” annex specifically focused on heat emergencies.

While the LEMP is used to guide a short-term operational response during an emergency, a **Local Hazard Mitigation Plan** is used to identify policies and actions that can be implemented over a longer-term to reduce the risk and impact of hazards. Hazard Mitigation Planning will be addressed on page 18.

Developing a hot weather response plan involves the following steps, with public engagement opportunities at every step in the process:

### Step 1: Pre-planning

Before getting started on writing or updating a plan, your municipality should consider the following:

#### Do any relevant plans already exist?

Do existing plans already address hot weather, either as part of an all-hazards approach or specifically focused on the threat of hot weather? If so, how are these plans working, and how can they be improved? If not, how could hot weather be addressed within local planning structures?

#### Who should be involved in the planning process?

Soliciting broad public input will be critical to identifying effective strategies, particularly from community members at highest risk during hot weather and anyone typically under-represented in community planning processes. Planning and implementation partners should likely include representatives from:

- Emergency services
- Municipal staff and officials
- Organizations that provide emergency assistance or other charitable aid
- Businesses/organizations serving clients, staff, or students at high risk during hot weather
- Businesses/organizations that could offer cooling facilities to the public during hot weather
- Local energy committees and energy efficiency or weatherization organizations
- Animal shelters, boarders, hospitals, or others that could shelter pets in an emergency

#### Who is at highest risk in your community?

Consider the risk groups identified on page 3 and other contextual factors in your community to help guide the highest priority populations and strategies to focus on during your planning process.

#### What resources are available to your community?

Inventory resources that could be used for a heat emergency response in your community, such as:

- People, including emergency response personnel, support partners, volunteers, etc.
- Facilities, including cooling centers/shelters and emergency medical facilities
- Communication systems for public outreach and response coordination
- Financial resources that could be used to purchase emergency cooling equipment or water

**Step 2: Action planning**

The core of the hot weather emergency response plan should address:

- **Actions** to take before and during periods of hot weather,
- **Responsible party(ies)** for taking each action, and
- **Trigger points** for when each action should be taken.

Actions should be developed in consultation with affected residents and partner organizations. Hot weather response plans often include the following actions, which are described in further detail on subsequent pages:

Action	Page reference
<b>Public outreach</b> about heat warnings and actions to take to protect health	Page 6 (top)
<b>Activate or direct residents to a call line</b> to address questions about hot weather	Page 6 (bottom)
<b>Open cooling facilities</b> for people without access to air conditioning	Page 7
<b>Mobilize support networks</b> to check in on and assist older adults, people experiencing homelessness, and other people at high risk	Page 8
<b>Modify or cancel outdoor activities</b> related to work, school, athletic, or recreational events	Page 9
<b>Mobilize extra emergency response</b> and medical personnel	Page 10 (top)
<b>Coordinate with utilities</b> to ensure continuous service throughout a heat event	Page 10 (bottom)

Action triggers can be based on National Weather Service (NWS) thresholds or tailored to specific local conditions and needs. Lower action thresholds may be appropriate in colder parts of the state. For example, 90° F in Newport results in a similar level of local risk as does 95° F in Burlington. Trigger points can vary by specific action, as certain actions may only be necessary during the most severe events (see template example on page 14). Current NWS thresholds for Vermont are:

Risk category	Forecasted heat index (°F)	Advisory/warnings triggered
<b>Low Risk</b>	Less than 80°	None
<b>Limited Risk</b>	80° - 89°	None
<b>Elevated Risk</b>	90° - 94°	None
<b>Significant Risk</b>	95° - 104°	Heat Advisory
<b>Extreme Risk</b>	105° or hotter	Excessive Heat Warning

**Step 3: Plan development, review, and approval**

Follow your standard local process for writing, reviewing, revising, and approving an official plan.

**Step 4: Implementation, training, evaluation, and maintenance**

Additional implementation steps may be needed to prepare outreach templates, formalize partnerships, or to update municipal policies and protocols, such as those that relate to employees, events, or use of municipal buildings and parks. Key personnel should be trained to enact plan actions. The plan should be reviewed and updated on at least an annual basis, informed by evaluation findings from exercises or emergencies. See page 11 for further guidance.

## Heat safety outreach

Municipalities play an important role in raising awareness in their community about forecasted hot weather, how to stay safe, asking residents to check in on people that may need extra assistance, and providing information about cooling centers or other local resources to help people stay cool. It is important to develop a basic communication plan in advance of hot weather that includes:

1. Templates for hot weather messages that can be quickly customized,
2. Who is responsible for customizing and sending out messages,
3. What media will be used for outreach (for example, post on municipal Facebook site),
4. The conditions for sending out messages (for example, when NWS issues a Heat Advisory).

The Vermont Department of Health maintains a [Hot Weather Media Toolkit](#) that includes example social media posts, a Front Porch Forum post, and other key messages that can be used in local communications. Other key resources that may be worth sharing are listed below.

General information about heat safety and preparedness for individuals, businesses, and communities can be found in the following locations:

- **Vermont Department of Health:** <https://www.healthvermont.gov/climate/heat>
- **National Weather Service (NWS):** <https://www.weather.gov/safety/heat>
- **Ready.gov:** <https://www.ready.gov/heat>

Follow weather forecasts and alerts from the National Weather Service and other news and weather media outlets. Resources that may be particularly helpful include:

- **Vermont Alert:** <https://vem.vermont.gov/vtalert>. Sign up for Vermont Alert to receive notifications by text, phone, or email when the National Weather Service issues a heat-related weather advisory. Please make sure to select heat alerts from the list of subscription options.
- **Dept of Public Safety weather alerts:** <https://list.vermont.gov/mailman/listinfo/dps.wxalerts>. Subscribe to weather alerts from the Vermont Department of Public Safety.
- **NWS Hazardous Weather Outlook:** <https://www.weather.gov/btv/ehwo>. Provides a seven-day forecast map for Vermont for heat and many other weather hazards.

Statewide social media resources that may be useful for residents include:

- Follow **#VTHeatSafety**
- Vermont Department of Health: **@healthvermont**
- Vermont Emergency Management: **@vemvt**
- National Weather Service: **@NWSBurlington**, **@NWSAlbany**

## Activate or direct residents to a call line to address questions about hot weather

Most Vermonters should call **2-1-1** for non-emergency assistance during hot weather, such as suggestions of where to go to find air conditioning. Communities can consider activating their own help line if they would like to provide additional assistance to residents, such as heat safety tips or non-emergency health guidance. Anyone needing emergency assistance should call **9-1-1**.

## Community cooling sites

Community cooling sites can be an essential resource for community members that do not have access to air-conditioning and need extra assistance to stay safe during hot weather. To be most effective, cooling site locations should be identified and advertised before hot weather occurs. A map of known cooling sites in Vermont can be found at [healthvermont.gov/climate/heat](https://healthvermont.gov/climate/heat).

Community cooling sites can include any of the following types of public places:

- **Cool place** – A building with air-conditioning operating as usual during normal hours, such as a library, town hall, or senior center.
- **Cooling center** – A “cool place” or other building specifically advertised for cooling that offers extra amenities during periods of hot weather, such as extended operating hours or the provision of water, food, transportation services and/or medical services.
- **Cooling shelter** – An air-conditioned building providing overnight accommodations.
- **Outdoor cooling site** – A beach, pool, spray pad, shaded park, or other outdoor location providing shade, swimming/spray water, and/or drinking water.

Below are common characteristics for indoor cooling facilities. Some communities may not have any buildings that meet the minimum recommendations - we encourage communities to offer what they are able, including outdoor spaces, basements, fans, or other creative resources. Another option is to partner with a business or organization that could open cooled space to the public.

Minimum recommendations	Encouraged amenities
Air-conditioned	Public transit or personal transportation assistance
Free entry	Activities available for guests
Convenient for community to access	Separate room for families and children
American Disabilities Act compliant	Access to wi-fi and power for personal devices
Access to restrooms	Food/snacks provided
Access to water	Provisions for pets
Electricity for medical equipment	Back-up generator available
Refrigeration for medications	Extended hours as needed
Seating available for all guests	On-site health and social services
Widely advertised throughout community	Law enforcement or other site safety officer

Consider ways to reduce barriers for residents to use community cooling sites. For example, by making beach/pool fees optional on dangerously hot days or providing indoor pet accommodations. In locations without convenient access to cooling resources, consider providing tents or other shade structures, hose/misting stations, and drinks or other cool treats.

If you think you might need help with staffing a cooling facility, please contact your local [Medical Reserve Corps](#) unit or [health office](#) to discuss how to request volunteer assistance.

After identifying community cooling facilities, it is important to also have a plan for communicating information about these facilities to community members (see outreach suggestions on page 6). We encourage communities to [submit cooling facility information](#) to the Vermont Department of Health so that cooling locations can be displayed on the [Vermont Community Cooling Site map](#). This information is shared with Vermont 2-1-1 and media outlets during hot weather events.

## Identify and assist people needing extra assistance

Hot weather plans should place extra emphasis on documenting strategies to:

1. Identify people at highest risk for experiencing heat-related health impacts, and
2. Check in on and provide aid to those needing extra assistance to stay safe during hot weather.

As indicated on page 3, people with health vulnerabilities due to age, disability, underlying health conditions, or other factors tend to be at highest risk during hot weather. Extra assistance may be needed for high-risk individuals that cannot keep their home at a safe temperature, are experiencing homelessness, cannot stay adequately hydrated, are socially isolated, and/or are homebound.

Some examples of identification and assistance strategies are provided below but will likely need to be tailored to fit local needs, resources, and constraints:

**Collaborating with health and human service organizations** already operating in each community is a good place to start. Examples include Community Action Agencies, Voluntary Organizations Active in Disasters (VOADs), Area Agencies on Aging, Support and Services at Home (SASH), Visiting Nurses Association, senior centers, emergency medical service providers, housing and shelter service providers, faith-based organizations, or other local charitable service providers. These types of organizations are already providing services to many people that would be considered at high risk during hot weather and may need extra assistance. They may already have mechanisms in place that could be used to identify individuals at high risk and provide safety checks or other aid as needed.

Additional mechanisms will likely be needed for identifying and assisting people that are not served by any formal organization. One statewide system that can be used in any community is the **Citizens Assistance Registry for Emergencies, CARE** (<https://e911.vermont.gov/care>). Anyone can register in CARE, and it is the responsibility of the local Emergency Management Director to request the CARE database for their municipality as needed. Some communities develop their own local registry by soliciting input from key community members/organizations or by asking residents to register themselves and/or others that they provide care for.

Some communities encourage more grassroots systems such as identifying **block or rural captains** to take responsibility for a small number of households in close proximity. Others simply encourage people more generally to check-in on neighbors and loved ones during emergencies, though it tends to be much more effective to specifically identify in advance who needs assistance and who is responsible for checking on them.

After identifying people needing extra assistance, there also needs to be a **plan for how to check on each individual and provide assistance** as needed. Local organizations, block captains, or other volunteers can be solicited to provide safety checks by phone, text, or in-person. They will also need a protocol for providing assistance as needed, which could include anything from providing assistance in their home with comfort and hydration, to arranging transportation to a cooling center, to calling 9-1-1 for emergency medical assistance.



## Establish and encourage policies for modifying or canceling activities

For municipal-sanctioned work or recreational activities, it is important to adopt policies and standards to govern activity modification or cancellation. Several relevant policies, procedures, and resources already apply in Vermont:

- [Vermont Department of Labor](#) provides resources and links to workplace heat safety guidance and Occupational Safety and Health Administration (OSHA) regulations.
- The Vermont Principals' Association has a [heat policy](#) to guide modification or cancellation of school athletic activities.
- Vermont [Child Care Licensing Regulations](#) require that classrooms temperatures do not exceed 85 °F measured at one foot above floor level and provides standards to ensure adequate ventilation and safe use of cooling equipment. (see Section 5.10.1.5 Ventilation, Heating and Cooling)

In general, considerations for outdoor activities include:

- Acclimating to hot weather requires gradually building up the duration and intensity of outdoor activities over a period of 7-14 days.
- Ensure that managers or organizers are prepared to provide:
  - Water,
  - Rest breaks,
  - Access to outdoor shade and/or indoor air conditioning,
  - Monitoring of workers and participants for heat illness symptoms, and
  - Medical attention, if needed.
- Establish thresholds that would trigger shortening, modifying, or cancelling activities.
- Provide standby medical personnel at high-risk activities.
- Raise awareness about heat safety, symptoms of heat illnesses, and basic first aid responses.

Considerations for indoor activities include:

- Use fans and window shades to help people stay comfortable.
- Turn off lights, electronic equipment, and other heat-generating equipment if practical.
- If possible, keep windows open overnight to help cool the building.
- If indoor temperatures reach uncomfortable levels, consider relocating occupants to a basement or other cooler part of the building or outside to a shaded location.
- Establish a threshold for closing buildings until temperatures drop.

## Mobilize extra emergency response and medical personnel

To supplement normal emergency response staffing, communities can consider activating additional personnel and assigning additional duties during hot weather. Consider what resources are typically actively staffing or available on-call in your community, including emergency medical services, fire, police, Community Emergency Response Teams (CERTs), Medical Reserve Corps units, hospital and other health care workers, or other paid or voluntary personnel that could contribute during a hot weather emergency.

Additional emergency response and medical personnel can enhance a hot weather emergency response in several ways:

- **Surge medical response capacity** may be needed during a major emergency.
- **Standby personnel** can be deployed to high-risk events or activities, such as an outdoor athletic event on a hot day.
- **Proactive safety checks** can be provided to high-risk residents.
- **Staff support** for cooling centers/shelters, water bottle distribution, etc.

Medical Reserve Corps (MRC) units are community-based groups of volunteers that can help supplement local resources during an emergency response. MRC volunteers can be requested to help with staffing a cooling facility and potentially for additional duties. Please contact your local [Medical Reserve Corps](#) unit or [health office](#) to discuss how to request volunteer assistance.

## Coordinate with utilities to ensure continuous service throughout a heat event

To avoid restricting access to life-saving heating and cooling systems, some utilities have policies for restoring previously disconnected service or avoid disconnecting service during periods of extreme weather. The Vermont Public Utility Commission has a [rule prohibiting disconnection](#) of gas, electric, and water service during winter months when temperatures are below a certain level. Although there is not a similar rule for hot weather, at any time of the year, a ratepayer can request that a disconnection be delayed by submitting a physician's note stating that the disconnection will create a health hazard.

Some utilities may have their own policies governing disconnections or may be open to adopting policies that help protect the health and safety of ratepayers. Contact your local electric utility(ies) to learn more about their policies and how to avoid service disconnections during hot weather. Find your local electric utilities using the Department of Public Service [Electric Utility Map](#).

## Exercising the plan

Simulating an emergency exercise can be an effective way to train response personnel to enact the plan, and to identify and correct any planning deficiencies before an actual emergency occurs. Exercises can be as simple as a tabletop discussion of an emergency scenario or as complex as a simulated scenario in your community. In either case, post-exercise evaluation should be a key component, with findings used to improve the plan, as discussed further in the next section. [Ready.gov](https://www.ready.gov) provides basic guidance on exercising emergency plans.

## Evaluating success and improving plans

Hot weather plans should be reviewed and updated on an annual basis, or as needed to improve their effectiveness. Collecting basic evaluation data can help identify new opportunities or strategies that aren't working as well as expected.

Below are some potential evaluation strategies to consider along with templates and examples:

- After each hot weather event, conduct a “hot wash” immediately following the event with key response personnel to discuss the event, what went well, and what didn't go well. Then summarize findings in an after-action report that describes the event, response actions taken, known impacts, and provides recommendations for changes to the plan, preparedness, training, or other aspects of the emergency response.
  - The Minnesota Department of Health provide [guidance and templates](#) for conducting a hot wash and completing an After-Action Report.
  - Oregon: [After Action Review of the June 2021 Excessive Heat Event](#).
- Count and keep a log of cooling facility visitors. If possible, collect basic information about who uses cooling facilities and why. If cooling facilities are not well-used or do not seem to attract high risk populations that would seemingly benefit from the cooling facility, consider surveying residents more broadly to learn why people do not use cooling facilities.
  - Maricopa County, Arizona: [cooling facility visitor survey and evaluation report](#).
  - Vermont [community cooling site feedback survey](#).
- Collect data from local emergency responders that describe who needed assistance due to impacts from excessive heat exposure and what conditions contributed to the impacts.
- Reach out to organizations or individuals that represent high risk populations to determine how they were affected, what needs they had, and if they had adequate resources for addressing those needs.

Evaluation findings should be used to inform plan updates, any needed policy or operational changes, and to identify additional resources that may be needed in advance of future hot weather events.

### Template for hot weather emergency response planning

This template is designed to guide hot weather emergency response planning. The template is used to describe key actions to take during a hot weather event, when to take them, and who is responsible for each action. The completed template can be adopted as an annex to the Local Emergency Management Plan.

Consider how all-hazards strategies and resources already documented in your Local Emergency Management Plan may apply to a heat emergency, and what additional strategies and resources may be needed to respond specifically to a heat emergency.

This template can be modified as needed for each community. The template can be completed with as much or as little detail as is helpful for supporting an effective local response.

A blank template is provided below, followed by a filled-in example.

#### Overall responsibility / incident manager

	Incident Manager	Deputy Incident Manager
Name		
Title		
Primary contact info		
Secondary contact info		

#### Overview of actions, triggers, and responsibilities

Action	Trigger	Responsibility

#### Communications plan

Source(s) for example outreach messages (or attach example messages to this plan)	
Who is responsible for customizing and sending outreach?	
How will outreach be sent to the community?	
When should messages be sent?	
Other communications notes	

**Community cooling facilities**

	Locations	Conditions for activating	Additional notes
Cool places			
Cooling centers			
Cooling shelters			
Outdoor cooling sites			

**Response plan for people needing extra assistance**

Resource	Activation plan	Response plan

**Activity modification/cancellation plans**

Trigger	Modification/cancellation plans

**Emergency personnel mobilization plans**

Resource	Mobilization plan

**Coordinate with utilities**

Action:	
Utility	Contact info

**Training, evaluation, and maintenance**

Activity	Details

An example of a completed planning template is provided below:

**Overall responsibility / incident manager**

	Incident Manager	Deputy Incident Manager
<b>Name</b>	Sally	Matt
<b>Title</b>	Emergency Management Director	Emergency Management Coordinator
<b>Primary contact info</b>	802-123-4567	802-987-6543
<b>Secondary contact info</b>	<a href="mailto:emd@town.gov">emd@town.gov</a>	<a href="mailto:emc@town.gov">emc@town.gov</a>

**Overview of actions, triggers, and responsibilities**

Action	Trigger*	Responsibility
Public outreach (seasonal awareness)	First forecasted heat index of 90°F+ each year	Deputy Incident Manager
Public outreach (advisory)	Heat Advisory	Deputy Incident Manager
Activate most cooling facilities	Heat Advisory	Incident Manager
Mobilize support networks	Heat Advisory	Deputy Incident Manager, Fire Chief, Senior Center Director
Consider activity modifications	Heat Advisory	Incident Manager
Coordinate with utilities	Heat Advisory	Deputy Incident Manager
Mobilize emergency personnel	Heat Warning	Deputy Incident Manager, Fire Chief
Activity modifications	Heat Warning	Incident Manager
Activate cooling shelter	Heat Warning for 2 or more consecutive days	Incident Manager

\*Triggers are meant to be advisory. Actions and triggers should be modified based on the expected or actual severity of each hot weather event.

**Communications plan**

<b>Source(s) for example outreach messages (or attach example messages to this plan)</b>	<a href="#">Hot Weather Media Toolkit</a> , Front Porch Forum post and social media posts
<b>Who is responsible for customizing and sending outreach?</b>	Deputy Incident Manager

<b>How will outreach be sent to the community?</b>	Town Facebook site and Front Porch Forum
<b>When should messages be sent?</b>	<p>Awareness messaging: 1-2 days prior to the first day of the year with a forecasted heat index of at least 90°F.</p> <p>Advisory messaging: Within 2 hours of NWS issuing a Heat Advisory or Warning, send the Front Porch Forum post and the Hot Weather Forecast post on Facebook. Send additional Facebook posts using other Toolkit messages around 8am and again around 2pm each day until the Advisory/Warning expires.</p>
<b>Other communications notes</b>	<p>Key points to emphasize in outreach:</p> <ul style="list-style-type: none"> <li>• Community cooling facility location and hours</li> <li>• Importance of checking on neighbors</li> <li>• Non-emergency number to call if needing extra assistance</li> <li>• Emergency number to call if needing immediate help</li> </ul>

**Community cooling facilities**

	<b>Locations</b>	<b>Conditions for activating</b>	<b>Additional notes</b>
<b>Cool places</b>	Library, senior center	Heat advisory, regular hours (consider extending hours as needed)	Consider offering water, snacks, or activities during Heat Advisory or Warning
<b>Cooling centers</b>	Town hall	Heat Advisory or Warning, 9am-9pm	Offer water and cold snacks; request Medical Reserve Corps staffing
<b>Cooling shelters</b>	Town school (gymnasium)	Multiday Heat Warning when school is not in session	Request Medical Reserve Corps staffing; arrange for safety officer to be present
<b>Outdoor cooling sites</b>	Town beach, town pool	Heat advisory, regular hours (consider extending hours as needed)	Make entry fee optional during Heat Advisory or Warning

**Response plan for people needing extra assistance**

Resource	Activation plan	Response plan
Senior Center	If Heat Advisory or Warning is issued, Senior Center Director will activate staff and volunteers for safety checks	Staff and volunteers will call and/or visit each contact in Town Emergency Registry at least once each Advisory/ Warning day to provide a safety check. If in-person aid is needed, contact emergency services.
CARE Registry	If Heat Warning is issued, Fire Chief will follow <a href="#">CARE process</a> to request emergency contact data	Standby emergency personnel will call and/or visit each CARE contact at least once each Warning day to provide a safety check and aid as needed.

**Activity modification/cancellation plans**

Trigger	Modification/cancellation plans
Heat Advisory	Ensure sufficient water, shade, and rest breaks are provided for any town-sanctioned outdoor activities. Consider shortening, modifying, or cancelling activities as needed.
Heat Warning	Cancel town-sanctioned outdoor work, recreational, and afterschool activities, unless sufficient water, shade, and rest breaks in a nearby air-conditioned facility can be provided.

**Emergency personnel mobilization plans**

Resource	Mobilization plan
Fire & Rescue	Fire Chief to call additional standby staff and volunteers to station. Personnel will call and/or visit CARE contacts, deploy to outdoor events, or standby for deployment as needed.
Medical Reserve Corps	Deputy Incident Manager to <a href="#">request Medical Reserve Corps volunteers</a> for cooling facility staffing, emergency registry safety checks, or other deployment as needed.

**Coordinate with utilities**

<b>Action:</b> Contact each utility to request restoration of disconnected service and delay new service disconnections for at least 48 hours following expiration of the Heat Advisory or Warning.	
Utility	Contact info
Vermont Electric Co-Op	802-635-2331
Green Mountain Power	888-835-4672



**Training, evaluation, and maintenance**

Activity	Details
Classroom training	Key response personnel will be provided a hot weather response training at least once every two years, beginning in 2022.
Tabletop exercise	Key response personnel will be invited to participate in a hot weather response tabletop exercise at least once every two years, beginning in 2023.
Evaluation	Complete a hot wash and after-action report following every exercise or plan activation.
Maintenance	The plan will be reviewed and revised (if needed) at least once per year as part of the annual LEMP update process.

## Long-term hot weather adaptation & mitigation

In addition to emergency response planning, it is also important for communities to consider long-term strategies for adapting to increasingly hot weather in Vermont. According to the [Vermont Climate Summary](#), the period from 2010-2020 was the warmest on record for Vermont, and average temperatures are projected to increase by an additional 3 to 12° F by 2100. From 1981-2010, there were fewer than 7 days per year on average when temperatures reached 90° F at the Burlington Airport.<sup>5</sup> Since 2010, that number has increased to nearly 11 days per year. This number is expected to further increase to 15-20 days per year by mid-century and 20-34 by the end of the century.<sup>6</sup> As temperatures continue to warm, heat-related health risks will also increase.

A [Local Hazard Mitigation Plan](#) (LHMP) is the key place to document hot weather risks in your community, along with the policies, actions, and other strategies that can be implemented over the long-term to help mitigate these risks. Municipalities can support long-term hot weather adaptation by adopting LHMP strategies to:

- Raise awareness among residents and local organizations about adaptation strategies,
- Provide incentives for residents and local organizations to pursue adaptation strategies,
- Modify public buildings and landscapes to be better adapted to hot weather, and
- Develop or revise local plans and policies to better support hot weather resilience.

More details on these strategies are provided below. Additional background information on this topic can be found in the [Vermont State Hazard Mitigation Plan](#), Extreme Heat chapter (4-5).

### Long-term planning

LHMP strategies might point to other local plans that need revisions to support long-term hot weather adaptation and mitigation. For example:

- **Planning & development regulations** can be used to support conservation of natural areas, placement and orientation of buildings to maximize shade and ventilation, and planting of shade trees near buildings.
- **Transportation and parking standards** can be used to minimize impervious surfaces, require cool pavements in strategic locations, and encourage shade trees or other green infrastructure along sidewalks, roads, at bus stops, and in/around parking lots.
- **Building design codes** can be used to maximize energy efficiency and ventilation, reduce waste heat, and require cooling equipment to be installed in certain buildings.
- **Health and safety standards** for rental properties can help ensure residential units are adequately weatherized and equipped with cooling equipment or other resources needed for residents to keep safely cool.
- **Park, open space, or community forest plans** can help maximize public access to shade trees or shade structures, splash or spray water, and drinking water.
- **Capital improvement plans** can be used to plan for investments in cooling equipment in municipal buildings, mobile cooling resources, or other heat resilience projects.

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<sup>5</sup> <https://www.ncdc.noaa.gov/cdo-web/search>

<sup>6</sup> [https://www.healthvermont.gov/sites/default/files/documents/pdf/ENV\\_CH\\_HeatReport.pdf](https://www.healthvermont.gov/sites/default/files/documents/pdf/ENV_CH_HeatReport.pdf)

### Building strategies

**Building weatherization**, which includes strategies such as air sealing, increasing insulation, and other energy efficient retrofits, can help keep homes and other buildings from heating up during summer (just as weatherization helps keep homes warmer during winter). This may require significant up-front costs, but these costs are typically recovered over time through savings on energy costs. Several organizations in Vermont provide financial assistance and incentives for building weatherization, including:

- [Vermont Weatherization Assistance Program](#) provides fully subsidized home weatherization services for income-qualifying households.
- [Efficiency Vermont](#) provides rebates for weatherization services, including larger rebates for income-qualifying households. Additional incentives may be available through partnering utilities.
- [NeighborWorks of Western Vermont](#) provides rebates and technical assistance for income-qualifying households.

Installing and using **air conditioning** is an effective and increasingly necessary strategy for reducing heat-related health impacts, especially for older adults and others with chronic health conditions. Installing efficient cooling technology should especially be considered in buildings that provide housing, medical, or social services for populations at higher risk for heat illnesses, and in buildings that could serve as emergency cooling centers or overnight shelters.

Air-source heat pumps, designed for cold weather climates, typically provide more energy-efficient cooling than air conditioning, while also providing efficient heating in winter. [Efficiency Vermont](#) and partnering electric utilities offer incentives for homeowners to install heat pumps and efficient window air conditioning, which can help offset the initial higher costs of these devices and result in saving money over the long-term on heating and cooling.

There are currently no formal programs in Vermont to provide emergency cooling assistance, though some charitable organizations may be able to assist with purchasing and installing an air conditioning unit if an emergency need arises. Vermont 2-1-1 may be able to assist with identifying emergency cooling resources.

Many **other building strategies** can be used to help increase energy efficiency, improve air flow and ventilation, reduce waste heat, and increase shade, including:

- Strategic use of windows, fans, and exhaust vents can help draw cooler air to where it is most needed and exhaust warmer air,
- Install and close [window coverings](#) during the day to help keep heat out,
- Replace incandescent light bulbs with LED bulbs to keep the house cooler and save energy,
- On hot days, avoid or reduce using cooking appliances and other devices that generate heat,
- Plant trees, shrubs, and vines around a building to maximize summer shade and cool breezes,
- Choose energy-efficient options when replacing siding, doors and windows, and
- Use light-colored materials to reflect heat when you replace your roof.
- Learn more about ways to keep your home cool at [Efficiency Vermont](#).

### Urban forestry and other urban heat mitigation strategies

As described on page 3, locations that are covered predominantly by dark, impervious surfaces (rooftops and pavement) and have few shade trees or other vegetation tend to feel hotter than more natural areas. This “urban heat island effect” occurs because dark surfaces and building materials absorb and retain heat, while buildings and vehicles add “waste heat” to these areas. This can even affect relatively small urban areas.

The urban heat effect can be reduced by:

- Using land use and development regulations to minimize dark, impervious surfaces,
- Promoting energy efficiency and active transportation to reduce waste heat from buildings and vehicles,
- Increase tree and vegetative cover, including green roofs, and
- Use of high reflectivity / high emittance materials in roofs, buildings, and pavements.

Trees and other vegetation can lower air and surface temperatures by providing shade and increasing evapotranspiration of water from vegetation to cool the air. Urban trees also provide numerous other ecosystem services, including reducing air pollution, filtering stormwater, sequestering carbon, providing wildlife habitat, and increasing aesthetic value. The Vermont Urban and Community Forestry Program and local tree programs help Vermont communities maintain and increase urban tree cover through a variety of grants, technical assistance, and programs. The [Community Canopy Program](#) provides free trees directly to community members.

### Encourage businesses, schools, and organizations to adopt hot weather plans and policies

In addition to a community hot weather plan, it is also important to encourage businesses, schools, and other organizations to adopt hot weather plans and policies. In addition to the general strategies already addressed in the community plan, these plans should also address:

- Procedures for monitoring and maintaining individual safety and hydration,
- How to provide water, rest, and shade to those engaged in outdoor and strenuous activities,
- Policies for modifying or cancelling outdoor or other strenuous activities,
- Policies for closing facilities when indoor temperatures exceed safe levels,
- Options for relocating building occupants to cooler locations,
- Emergency procedures to provide medical attention in the event of a heat illness.

## Resources and examples

### Background and heat safety

- [Hot Weather and Health Impacts](#) (Vermont Department of Health)
- [Illness and Death due to Hot and Cold Weather](#) (Vermont Department of Health)
- [Heat Safety Tips and Resources](#) (National Weather Service)
- [Extreme Heat](#) (Ready.gov)
- [Climate Change and Extreme Heat](#) (Centers for Disease Control)
- [Warning Signs and Symptoms of Heat-Related Illness](#) (Centers for Disease Control)

### Heat & health data

- [Vermont Heat Vulnerability Index](#) (Vermont Department of Health)
- [Seasonal and yearly heat illness data](#) (Vermont Department of Health)
- [Heat & Health Tracker](#) (Centers for Disease Control)

### Planning for Hot Weather Events

- [Local Emergency Management Plans](#) (Vermont Emergency Management)
- [Heat Response Plans](#) (Centers for Disease Control)
- [Excessive Heat Events Guidebook](#) (Environmental Protection Agency)
- [Heat Alert and Response Systems to Protect Health](#) (Health Canada)

### Heat safety outreach

- [Hot Weather Media Toolkit](#) (Vermont Department of Health)
- [Heat Safety Outreach](#) (National Weather Service)
- [Vermont Alert](#) (Vermont Emergency Management)

### Community cooling facilities

- [Community Cooling Facility Map](#) (Vermont Department of Health)
- [Community Cooling Center Guidance](#) (Vermont Department of Health)
- [The Use of Cooling Centers to Prevent Heat-Related Illness](#) (Centers for Disease Control)

### Identifying and assisting people needing extra assistance

- [Citizens Assistance Registry for Emergencies](#) (Vermont Enhanced 911)
- [Block Captains](#) (Bountiful, Utah)
- [Be a Buddy Program](#) (Hunts Point, New York City)

### Establish and encourage policies for modifying or canceling activities

- [Working in the Heat – What to Know for Workers](#) (Vermont Department of Labor)
- [Procedure for Athletic Participation in the Heat](#) (Vermont Principals' Association)
- [Vermont Child Care Licensing Regulations](#) (Vermont Department of Children and Families)

### Exercising and evaluating the plan

- [Exercises](#) (Ready.gov)
- [Hot wash and after-action review guidance](#) (Minnesota Department of Health)
- [After Action Review of the June 2021 Excessive Heat Event](#) (Oregon)
- [Cooling facility visitor survey and evaluation report](#) (Maricopa County, Arizona)

### Hazard mitigation planning

- [Local Hazard Mitigation Planning](#) (Vermont Emergency Management)
- [Vermont State Hazard Mitigation Plan, Extreme Heat](#) (Vermont Emergency Management)
- [Vermont State Climate Summary](#) (National Oceanic and Atmospheric Association)
- [Vermont Climate Assessment](#) (University of Vermont)

### Long-term adaptations to hot weather

- [Planning for Urban Heat Resilience](#) (American Planning Association)
- [Vermont Weatherization Assistance Program](#) (Vermont Department of Children and Families)
- Weatherization Programs: [Efficiency Vermont](#), [Vermont Gas](#), [NeighborWorks of Western VT](#)
- [Air Conditioning and Heat Pumps](#) (Efficiency Vermont)
- [Community Canopy Program](#) (Vermont Urban & Community Forestry Program)
- [Urban Heat information and mitigation strategies](#) (Environmental Protection Agency)

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