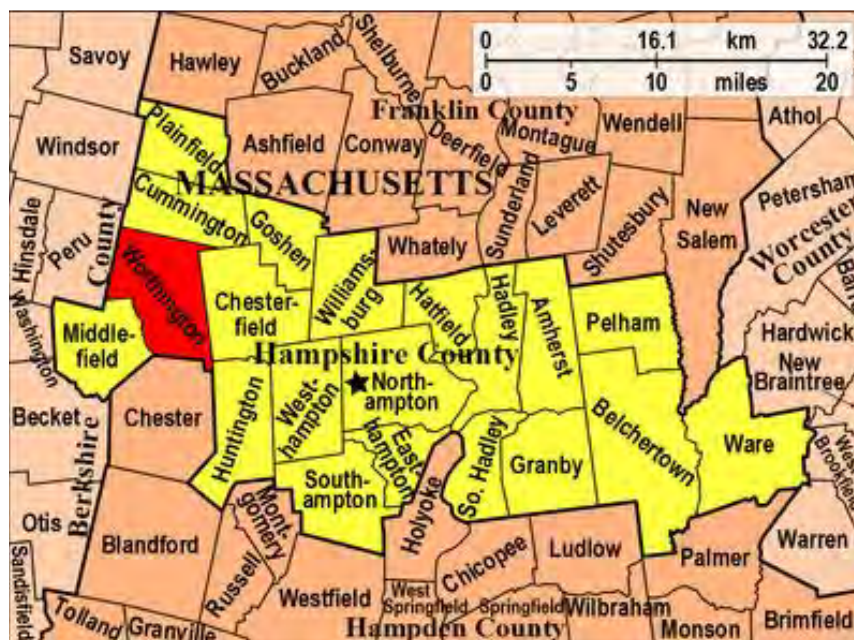


## WRHSAC Equity Data Project – Hampshire County, Massachusetts

Berkshire Regional Planning Commission, Matt Gilbert



### Overview

This is an assessment of the readily available data for individuals who are likely to be at higher risk in emergencies in Hampshire County, Massachusetts where there is no county government. Hampshire County has a population of 162,308 with twenty independent municipalities ranging in size from a few hundred residents to almost 30,000. The county is known for its five prestigious colleges, and is split by a major river, creating what are known locally as rural East Hampshire and the more populated West Hampshire. Although 82.8% of residents are non-Hispanic White, there are significant minority populations as well, especially in the larger cities and towns.

Hampshire County has a significant number of people living with a disability or who do not speak English as a first language. It also has a large elderly population. These individuals are at higher risk in emergencies as compared to the general population. There are also local concerns about public transportation and areas with limited cell service. These risk factors may be compounded by individuals' physical and mental health and access to social and financial resources.

Hazards in Hampshire County that could impact emergency preparedness primarily include the threat of increased ice storms and flooding. Proximity to the Connecticut and Mill Rivers make those areas and their residents susceptible to flooding, which could impact potential evacuation

and food access; issues that are likely to fall hardest on lower-income and at-risk populations. Additionally, there are ongoing concerns with flu and COVID-19 levels in the county, along with lower vaccination rates and healthcare infrastructure difficulties. County responders also expressed concerns with risks created by alternative electrical sources such as photovoltaics, batteries, and private power generators during weather events.

## Hampshire County Specific Equity Concerns

According to the [Robert Wood Johnson Foundation's County Health Rankings](#), Hampshire County residents, as compared to the rest of the state, are slightly more likely to drink excessively or smoke and three times as likely to have limited access to healthy foods due to low income or not living near a grocery store. Although Hampshire County ranks fifth out of Massachusetts' 14 counties in overall health outcomes, putting it in the higher middle range for outcomes and among the healthiest for health factors, there are significant health equity concerns that could disproportionately impact certain groups or individuals in an emergency.

- **Disabilities:** At least 17,000 individuals in the county have one or more disabilities, which can impact their physical or mental ability to respond appropriately to an emergency or evacuation orders. The most common are cognitive and ambulatory difficulties.
- **Transportation:** Individuals with mobility disabilities, the elderly, and those without a personal vehicle are at greater risk during emergency evacuations or the need to access services such as vaccinations.
- **Health:** Hampshire County, in particular Northampton, experiences high rates of mental health hospitalizations and overdose concerns, which have been compounded by the pandemic and ongoing opioid crisis.
- **Socioeconomic Status:** Most of Hampshire County's households have a median household income at or above the state median, but there are ongoing concerns with homelessness, as well as people who are rent overburdened or worried they may be forced to leave their homes. Other equity concerns related to socioeconomic status include single parent households possibly needing additional assistance in an emergency, and food deserts in East Hampshire where residents may already experience food insecurity without any emergency.
- **Other Concerns:** While Hampshire County has many of the tools necessary for an emergency, communication remains a concern with cell service being inadequate in large portions of the county. Cellular communication during an emergency is not always tailored to individuals who are elderly or those who have English as a second language. In addition, there is a risk of civil unrest, especially near the five colleges where police staffing may already be inadequate.

## Hampshire County Specific Hazards, Threats, Concerns, and Vulnerabilities

The following are specific risk hazards and threats that have impacted Hampshire County in the past or have the potential to impact the county. according to data sources and interviews.

- **Climate:** Hampshire County is at risk of increased storms and flooding. The Connecticut River is a major waterway that bisects the county, affecting significant numbers of areas during floods, making many roads impassable and impacting evacuations. Increased precipitation could damage many buildings and lead to decreased affordable housing options. Additionally, though the county's drought risk is relatively low compared to the rest of the United States, prolonged drought conditions could lead to fires. Droughts can also create additional concerns like lack of safe drinking water. According to interviews, ice storms and winter storms are more of a concern in centers like Amherst and Hadley. Weather events such as ice storms can also lead to power outages that would especially impact homebound people, older people, or those relying on electrically powered medical equipment such as ventilators or oxygen generators.
- **Infectious diseases:** Ongoing concerns with COVID-19 and influenza have affected the county, and rates of vector and foodborne diseases are likely to increase as the climate grows wetter and warmer.
- **Environmental hazards:** Hampshire County has risks associated with where some waste disposal sites are located, and significant brownfield and pollution sites that could become a risk if high winds floods were to spread contaminants to nearby residents.
- **Electricity concerns:** Interviewees have expressed fire concerns from photovoltaics and lithium-ion batteries. Additionally, there are many people who are medically dependent on electricity and would be impacted during a power outage.
- **Cybersecurity:** According to interviews, concerns related to phishing are likely to affect older people in rural Eastern Hampshire as well as impact community servicers.
- **Food sources:** Climate-related events are likely to lead to more foodborne diseases and lower crop yields in the near and long term. This may especially impact individuals already living in food deserts in Eastern Hampshire.

Sources:

[Emergency Preparedness Planning Tool \(region1hmcc.org\)](https://region1hmcc.org/emergency-preparedness-planning-tool/)  
[Reg-1-HMCC-HVA-Final-June-2022.pdf \(region1hmcc.org\)](https://region1hmcc.org/reg-1-hmcc-hva-final-june-2022.pdf)

## Emergency Preparedness Recommendations from County Responders

- Fire chiefs would like to receive diving equipment, fire suppression systems, and sprinklers.
- Police officers want upgraded, coordinated radios for civil unrest and enhanced outgoing 911 systems.
- Hampshire County's hill towns require increased cybersecurity resources.
- There is a need for regional cooperation against natural hazards, in addition to improved coordination with the Commonwealth.
- Councils on Aging may be able to assist with engaging with the older adults for better communications and need to be better integrated into the local response systems.
- A unified communications plan for older adults, non-English speakers, and other vulnerable groups would be helpful.
- Partnerships should be made with the utility companies in order to collaborate regarding concerns about generators and blackouts.
- EMS staff should be trained to communicate with populations with various needs and more effective ways to provide assistance to them in an emergency.

- Improved system-level infrastructures are needed to address patient navigation and affordable housing concerns.
- Efforts should be made to ensure transportation needs are met, especially for older adults and those with disabilities in Eastern Hampshire.

## Research Data and Sources

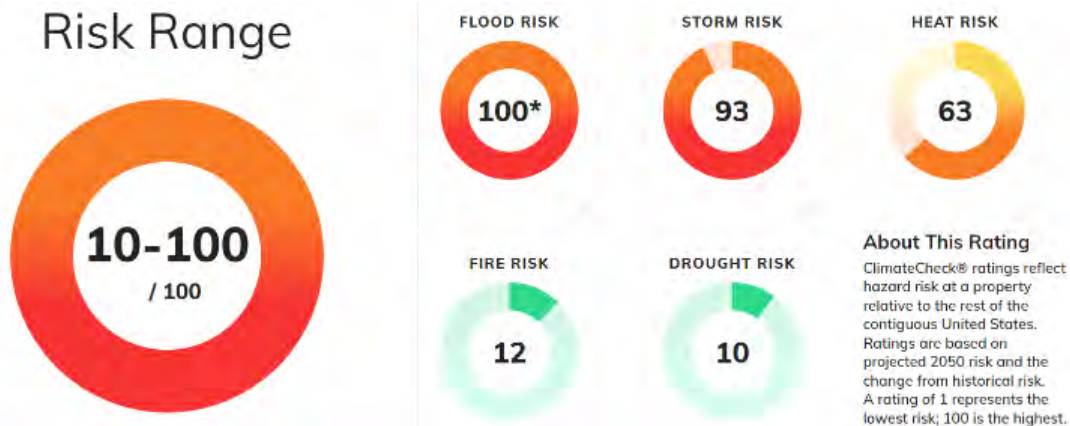
### Climate

At present, there is moderate risk of flooding for more than 10% of Hampshire homes, but that number is expected to increase to as many as 17% of homes as the occurrences of storms and heavy precipitation increases. Flooding would also impact more than 20% of roads, more than a quarter of business or commercial facilities, a third of critical infrastructure operations such as hospitals and wastewater treatment facilities, and a little over 20% of community services facilities such as schools and government buildings. Damage to roads, businesses and community services could impact required evacuations. Based on past floods, damage costs can range from non-existent to hundreds of thousands of dollars and are more likely to affect areas closer to the Connecticut River, such as Northampton. Of the past 34 flood events, 10 have resulted in significant property damage.

Hampshire County has recently seen three days over 100 degrees Fahrenheit. Over the next 30 years, extreme heat days are expected to increase to at least seven days a year which may cause damage to infrastructure and strain power sources due to increased electrical use. While electrical usage is a major concern during high heat days, human health is also likely to be impacted due to heat exhaustion and dehydration.

Although not as frequent as floods in the past, ice storms in Hampshire County have caused more damage, ranging from tens of thousands to millions of dollars in property damages. The increased rates of precipitation are expected to contribute to the increased risk of ice storms. Both Western and Eastern Hampshire face this issue.

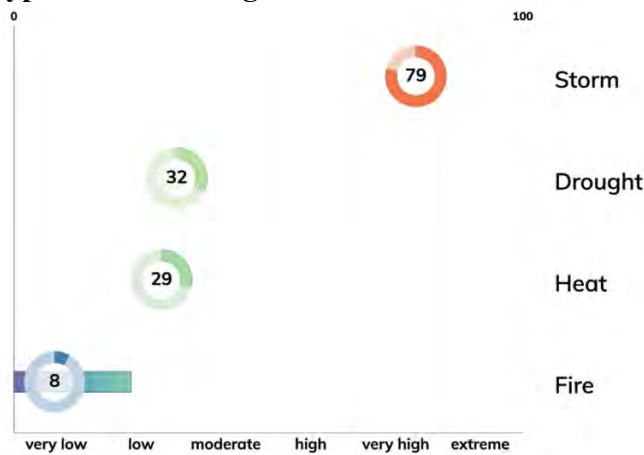
**Figure 1. Weather-related Risks**



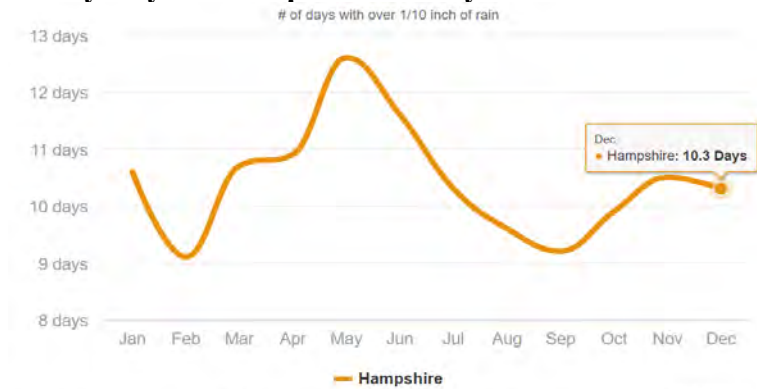
**Figure 2. Potential Impacts of Flooding in Hampshire County**

Residential <b>Moderate Risk</b> 4,098 out of 39,303 homes
Road <b>Major Risk</b> 582 out of 2,335 miles of roads
Commercial <b>Major Risk</b> 594 out of 2,113 commercial properties
Critical Infrastructure <b>Moderate Risk</b> 26 out of 94 infrastructure facilities
Social Facilities <b>Moderate Risk</b> 40 out of 194 social facilities

**Figure 3. Typical Risk Rating for Massachusetts**



**Figure 4. Rainy Days in Hampshire County**



May is the rainiest month in Hampshire County with 12.6 days of rain, and February is the driest month with only 9.1 rainy days. There are 125.2 rainy days annually in Hampshire County, which is about average compared to other places in Massachusetts. The rainiest season is Summer when it rains 27% of the time and the driest is Winter with only a 24% chance of a rainy day.



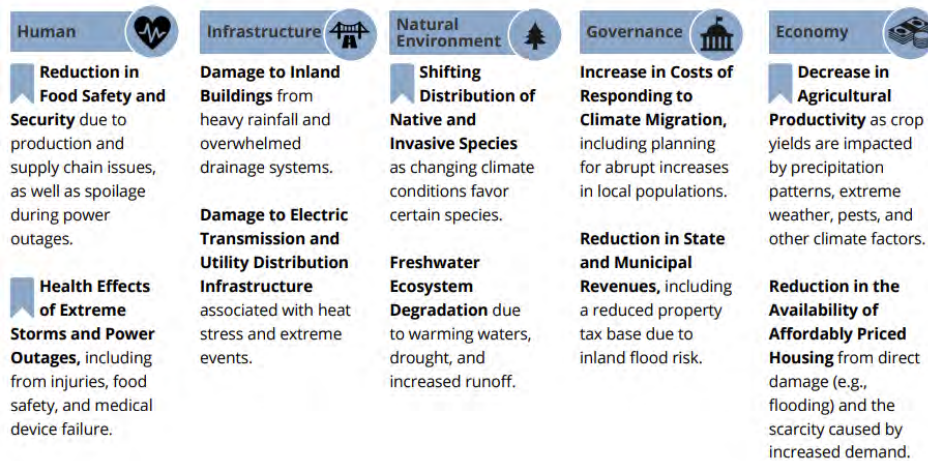
**Figure 5. Regional Climate Outlook**

2030	2050	2070	2090
<p><b>NEAR TERM</b> The summer mean temperature could increase by 3.6°F from the historical period (1950-2013), causing impacts to local crop yields and food security.</p>	<p><b>MID-CENTURY</b> The 1 percent annual chance river flood could be three times more likely to occur, increasing Connecticut River and other area flood risk.</p>	<p><b>MID-LATE CENTURY</b> There could be 65 fewer days below freezing, increasing the chance of ticks overwintering and reducing winter recreation opportunities.</p>	<p><b>END OF CENTURY</b> The historical 10 percent annual chance daily rainfall event (2.6 to 4 inches) could occur four times more frequently.</p>

2022 MASSACHUSETTS CLIMATE CHANGE ASSESSMENT

**Figure 6. Most Urgent Impacts by Sector for the Greater Connecticut River Valley Region**

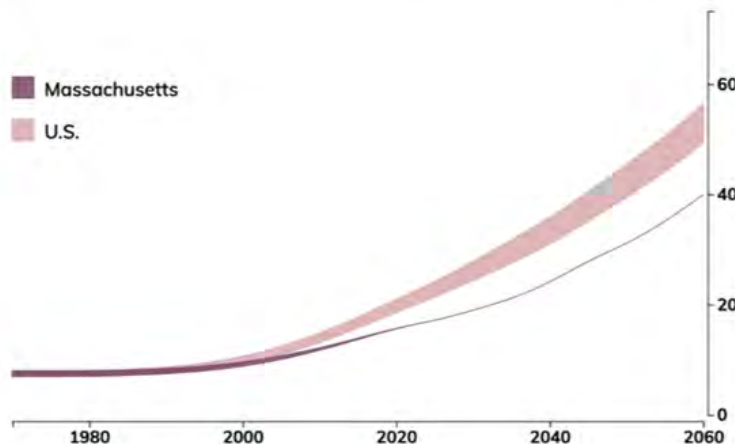
Centered around the Connecticut River, this region includes rural towns and urban centers. Many of the most urgent climate impacts are already large concerns in the region (e.g., food security, agriculture, and housing). Below are the top two impacts per sector. The bookmark icons identify unique regional priorities, meaning for each sector, impacts that are not a top three most urgent impact statewide but are a top two impact regionally.



**Figure 7. Extremely Hot Days Per Year**

The frequency of very hot days is increasing. On average, someone in Massachusetts will experience about **31 extremely hot days in 2050**.

A typical person in the U.S. will experience about 43 extremely hot days in 2050.



**Figure 8. Temperature Extremes in Hampshire County**

TO 
DIFFERENCE FROM AVERAGE
TEMPERATURE IN °F

When has Hampshire County, Massachusetts experienced extreme high or low temperatures?

Sep 1961

**LARGEST DIFFERENCE:**  
**6°F WARMER**  
 Temperature: 67°F  
 September average: 61°F

Dec 1989

**LARGEST DIFFERENCE:**  
**-13°F COOLER**  
 Temperature: 13°F  
 December average: 27°F

In the most recent month, October 2022, the average temperature in Hampshire County was 51°F, which is 1°F warmer than average when compared to all Octobers since 1985.

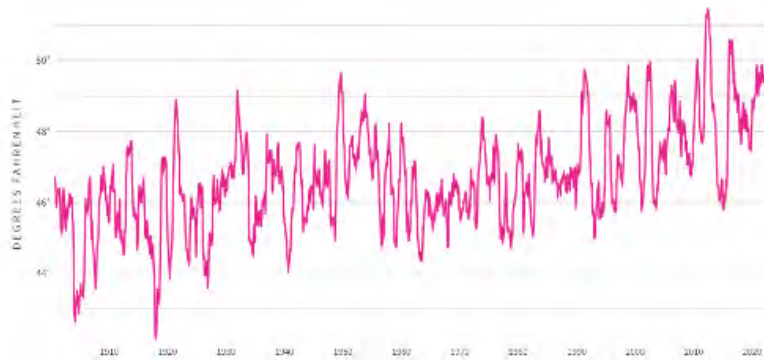
**Figure 9. Temperature Trend in Hampshire County**

What is the yearly temperature trend in Hampshire County, Massachusetts?

51.5°F  
SEP 2011 - AUG 2012  
Warmest 12-month average
42.2°F  
MAR 1917 - FEB 1918  
Coldest 12-month average

The 12-month average temperature increased 2.3°F from November 1900 to October 2022. From November 1900 to October 2022, the 12 month average temperature was 46.7°F.

Source: [National Centers for Environmental Information](#)



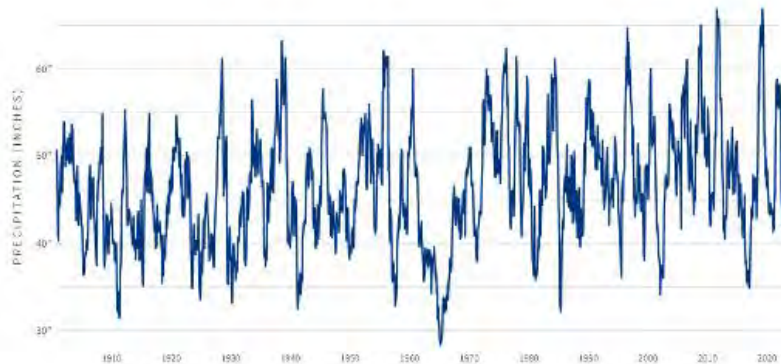
**Figure 10. Precipitation Trend in Hampshire County**

What is the yearly precipitation trend in Hampshire County, Massachusetts?

66.9 inches  
JUNE 2018 - MAY 2019  
Wettest 12-month average
28.4 inches  
MAY 1964 - APR 1965  
Driest 12-month average

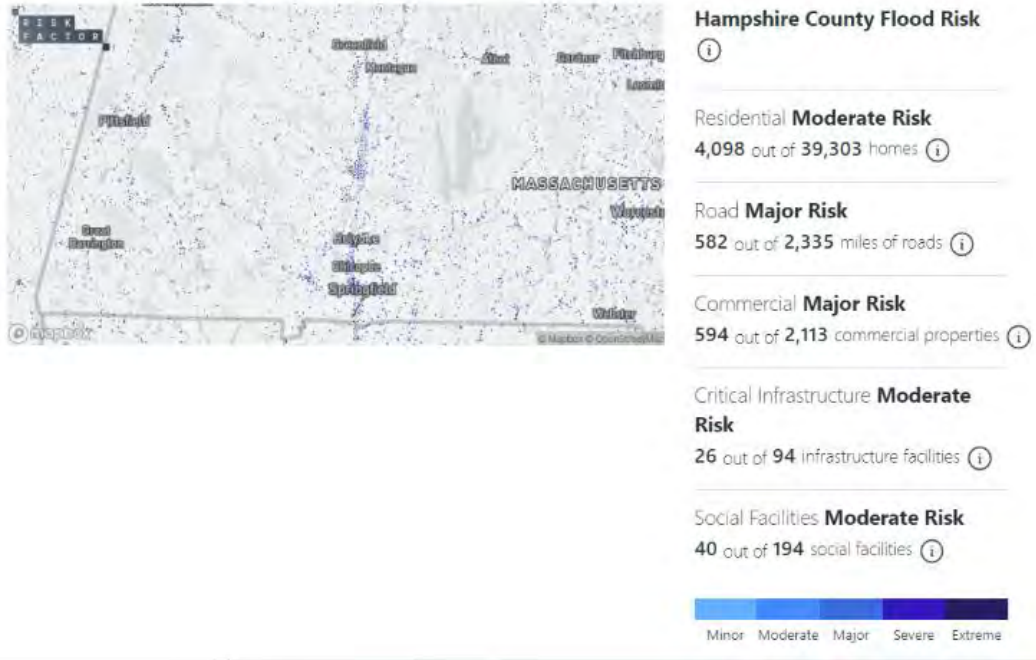
The 12-month total precipitation decreased 7.9 inches from November 1900 to October 2022. From November 1900 to October 2022, the average 12-month total precipitation was 46.4 inches.

Source: [National Centers for Environmental Information](#)





**Figure 11. Hampshire County Flood Risk**



**Figure 12. Previous Floods in Hampshire County**

<a href="#">EASTERN HAMPSHIRE (ZONE)</a>	EASTERN HAMPSHIRE (ZONE)	MA	10/15/2005	01:16	EST	Flood	0	0	250.00K	0.00K
<a href="#">NORTHAMPTON</a>	HAMPSHIRE CO.	MA	05/13/2006	03:30	EST	Flood	0	0	5.00K	0.00K
<a href="#">NORTHAMPTON</a>	HAMPSHIRE CO.	MA	04/16/2007	11:50	EST-5	Flood	0	0	1.500M	0.00K
<a href="#">NORTHAMPTON</a>	HAMPSHIRE CO.	MA	02/13/2008	16:30	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">BELCHERTOWN</a>	HAMPSHIRE CO.	MA	03/08/2008	17:00	EST-5	Flood	0	0	20.00K	0.00K
<a href="#">BONDSVILLE</a>	HAMPSHIRE CO.	MA	08/23/2009	18:30	EST-5	Flood	0	0	5.00K	0.00K
<a href="#">NORTHAMPTON</a>	HAMPSHIRE CO.	MA	01/25/2010	15:00	EST-5	Flood	0	0	150.00K	0.00K
<a href="#">NORTHAMPTON</a>	HAMPSHIRE CO.	MA	08/28/2011	08:52	EST-5	Flood	0	0	400.00K	0.00K
<a href="#">BAY STATE</a>	HAMPSHIRE CO.	MA	08/28/2011	10:30	EST-5	Flood	0	0	150.00K	0.00K
<a href="#">SOUTH HADLEY FALLS</a>	HAMPSHIRE CO.	MA	08/28/2011	14:22	EST-5	Flood	0	0	50.00K	0.00K
<a href="#">WESTHAMPTON</a>	HAMPSHIRE CO.	MA	08/28/2011	15:11	EST-5	Flood	0	0	50.00K	0.00K
<a href="#">WEST WARE</a>	HAMPSHIRE CO.	MA	09/08/2011	03:28	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">COOKS CORNER</a>	HAMPSHIRE CO.	MA	07/28/2012	15:10	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">HAYDENVILLE</a>	HAMPSHIRE CO.	MA	09/30/2015	07:50	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">BUZZARDS BAY</a>	HAMPSHIRE CO.	MA	09/30/2015	08:15	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">BAY STATE</a>	HAMPSHIRE CO.	MA	02/25/2016	05:37	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">WARE</a>	HAMPSHIRE CO.	MA	08/13/2016	21:30	EST-5	Flood	0	0	5.00K	0.00K
<a href="#">BAY STATE</a>	HAMPSHIRE CO.	MA	08/05/2017	14:14	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">NORTHAMPTON</a>	HAMPSHIRE CO.	MA	10/24/2017	21:14	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">GRANBY</a>	HAMPSHIRE CO.	MA	10/24/2017	23:17	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">WARE</a>	HAMPSHIRE CO.	MA	01/13/2018	10:18	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">WARE</a>	HAMPSHIRE CO.	MA	07/06/2019	16:08	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">EASTHAMPTON</a>	HAMPSHIRE CO.	MA	07/06/2020	19:15	EST-5	Flood	0	0	0.00K	0.00K
<a href="#">COLD SPG</a>	HAMPSHIRE CO.	MA	07/18/2021	03:54	EST-5	Flood	0	0	4.00K	0.00K
<a href="#">BONDSVILLE</a>	HAMPSHIRE CO.	MA	07/18/2021	05:43	EST-5	Flood	0	0	0.00K	0.00K
<b>Totals:</b>							0	0	3.589M	0.00K



### Figure 13. Impact of Hampshire County Floods, 1950-2022

34 events were reported between 01/01/1950 and 12/06/2022 (26638 days)

**Summary Info:**

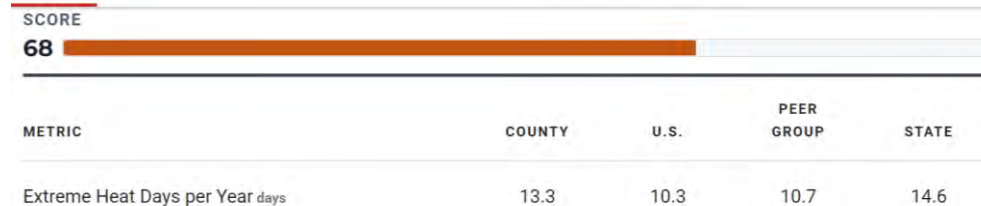
Number of County/Zone areas affected:	3
Number of Days with Event:	28
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	10
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

### Figure 14. Likelihood of Flooding Events

Per riskfactor.com:

Deeper floods from major events, like hurricanes, are less likely to occur, but affect more properties than more shallow flood events, like heavy rains. As Hampshire County feels the effects of a changing environment, however, events of all kinds will affect more properties within the community. If a low-likelihood storm resulting in severe flooding (a 1-in-100 year flood event), occurred today, it could affect **6,810** properties in **Hampshire County**. This type of event has a 26% chance of occurring at least once over the life of a 30 year mortgage. 30 years from now, an event of this same likelihood would affect **7,096** properties due to a changing environment.

### Figure 15. Extreme Heat Days in Hampshire County

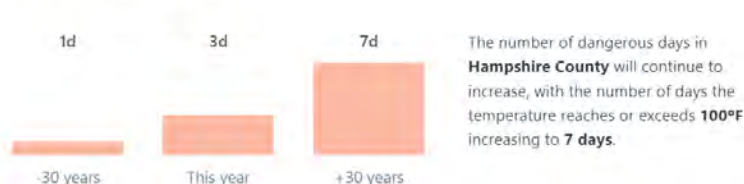


### Figure 16. Dangerous Heat Days in Hampshire County

Dangerous days (100+°F)

Heat causes more deaths per year than any other natural risk. Temperatures become dangerous to spend time in at a "feels like" temperature of 100°F. 30 years ago, the number of days above 100°F in Hampshire County would have been around 1 day. This year approximately 3 days are expected to reach or exceed 100°F.

Days above 100°F per year

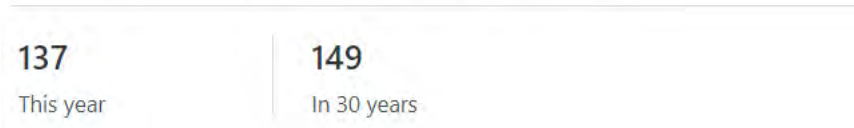


### Figure 17. Heat and Increased Electricity Usage

One of the resulting effects of heat is the increase in energy usage that occurs as homes and businesses make an effort to keep cool indoors. Based on heat projections for this year in **Hampshire County** it is estimated that the use of air conditioning would cause an increase in energy consumption on **137** days annually.

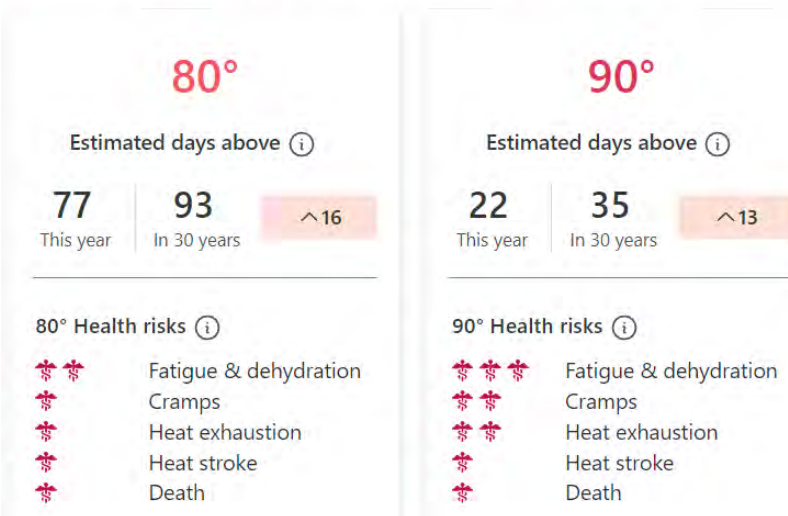
This risk may become even more pronounced in 30 years, as the number of cooling days is expected to increase to **149** days per year. This increase in need for cooling is expected to increase **Hampshire County's** electricity usage for cooling purposes by **21.40%**.

#### Number of cooling days this year vs. in 30 years



### Figure 18. Hampshire County Hot Days and Associated Risks

☹ Low risk    
 ☹☹ Medium risk    
 ☹☹☹ High risk



**Figure 19. Ice Storms in Hampshire County, 2002-2019**

Location	County/Zone	St.	Date	Time	T.Z.	Type	Mag	Dth	Inj	PrD
<b>Totals:</b>								0	0	6.310M
<a href="#">WESTERN HAMPSHIRE (ZONE)</a>	WESTERN HAMPSHIRE (ZONE)	MA	11/16/2002	22:00	EST	Ice Storm		0	0	150.00K
<a href="#">EASTERN HAMPSHIRE (ZONE)</a>	EASTERN HAMPSHIRE (ZONE)	MA	11/16/2002	22:00	EST	Ice Storm		0	0	150.00K
<a href="#">WESTERN HAMPSHIRE (ZONE)</a>	WESTERN HAMPSHIRE (ZONE)	MA	12/11/2008	03:37	EST-5	Ice Storm		0	0	3.000M
<a href="#">EASTERN HAMPSHIRE (ZONE)</a>	EASTERN HAMPSHIRE (ZONE)	MA	12/11/2008	03:41	EST-5	Ice Storm		0	0	3.000M
<a href="#">WESTERN HAMPSHIRE (ZONE)</a>	WESTERN HAMPSHIRE (ZONE)	MA	12/30/2019	06:00	EST-5	Ice Storm		0	0	10.00K
<b>Totals:</b>								0	0	6.310M

Sources:

- [Hampshire County, MA Housing Market: House Prices & Trends | Redfin](#)
- [Hampshire County Conditions | Drought.gov](#)
- [Climate Risk Report - Flood, Fire, Storm, Heat and Drought / ClimateCheck](#)
- [Hampshire County, Massachusetts Flood Factor® | Risk Factor](#)
- [2022 Massachusetts Climate Change Assessment: Regional Reports](#)
- [Massachusetts Top Climate Change Risks: Storm, Coastal Flood, Heat / ClimateCheck](#)
- [Climate in Hampshire County, Massachusetts \(bestplaces.net\)](#)
- [Climate in Hampshire County, Massachusetts | USAFacts](#)
- [Storm Events Database - Search Results | National Centers for Environmental Information \(noaa.gov\)](#)

### Infectious Diseases

Western Massachusetts’ primary concern with infectious disease lies with emerging or novel diseases and increased rates of influenza and other respiratory illnesses. Also, as the risk of floods and greater heat days increases over the next decades, foodborne diseases that hotter, wetter days such as cholera and Lyme disease are likely to be issues as well.

Emerging diseases are mentioned by many emergency planners as one of the biggest threats in Western Massachusetts, second only to extreme heat and weather events. Populations with chronic diseases and those living in denser urban centers are at greater risk. Hospitals systems indicated during interviews that they were in need of more equipment and assistance to manage the increased loads. Many hospital systems are operating at over 90% capacity for prolonged periods of time.

Although Cooley Dickinson has some equipment necessary to deal with the ongoing “triple-demic” of COVID-19, influenza, and respiratory syncytial virus (RSV), there are concerns expressed in interviews that there is a need for additional pumps, drugs, and ventilators, along with an improved health infrastructure to help navigate patients to proper care, especially individuals who are homeless, elderly, do not speak English as a first language, or have ambulatory difficulties.

The COVID-19 pandemic, which was declared both an emergency and major disaster in 2020, has had significant impacts across the globe. Although the risks have decreased, Hampshire County’s vaccination rates appear to be relatively low, especially among Black, Hispanic/Latino, Asian, Multiracial, and American Indian/Alaska Native residents. This concern is compounded by the potential for ongoing new Covid variants. According to interviews, the rates for COVID-19 vaccinations are undercounted for Black and Hispanic/Latino residents, but specific data is difficult to obtain for those populations.



**Figure 20. Percent of Individuals Fully Vaccinated within Each Race/Ethnic Group Within Each County, as of 9/12/22**

	American Indian/Alaska Native	Asian	Black	Hispanic/Latino(a)	Multi	Native Hawaiian/Pacific Islander	White	Total**
Berkshire	56%	71%	63%	62%	36%	*	75%	74%
Franklin	51%	78%	65%	54%	31%	*	74%	74%
Hampden	58%	70%	59%	50%	49%	>95%	70%	67%
Hampshire	52%	49%	52%	48%	38%	>95%	73%	71%
Massachusetts	53%	76%	73%	66%	60%	>95%	77%	78%

Notes: \* Vaccination figures are suppressed where less than 30 persons are included for privacy. Doses without address records are not included. Percentage is calculated as cumulative first doses of Moderna and Pfizer administered and reported plus the cumulative doses of Janssen/Johnson & Johnson doses administered, divided by the population in the county and the race/ethnicity category

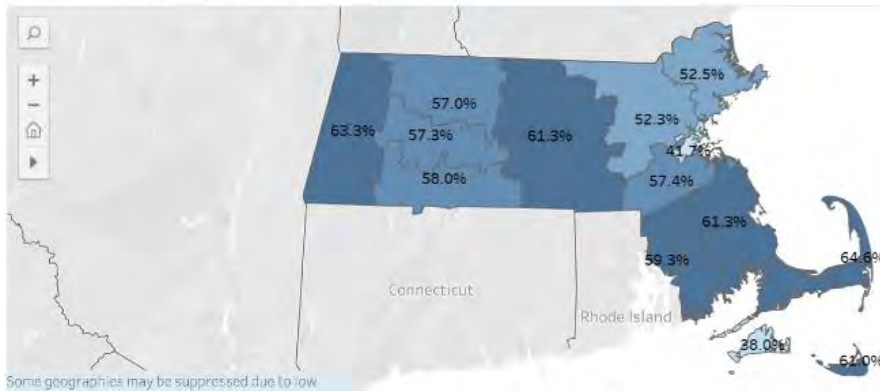
\*\* The total percentage of people vaccinated in each county and statewide includes a percentage of individuals whose race/ethnicity is unknown or does not fit into the listed categories that ranges from 5-6% in the counties of western MA. This includes responses that do not fit into the listed categories, nonresponses, "prefer not to say", and records from selected providers whose software does not allow them to collect race and ethnicity data.

Source: Weekly COVID-19 Municipality Vaccination Report – September 15, 2022 [https://www.mass.gov/info-details/massachusetts-covid-19-vaccination-data-and-](https://www.mass.gov/info-details/massachusetts-covid-19-vaccination-data-and)

**Figure 21. COVID-19 Testing**

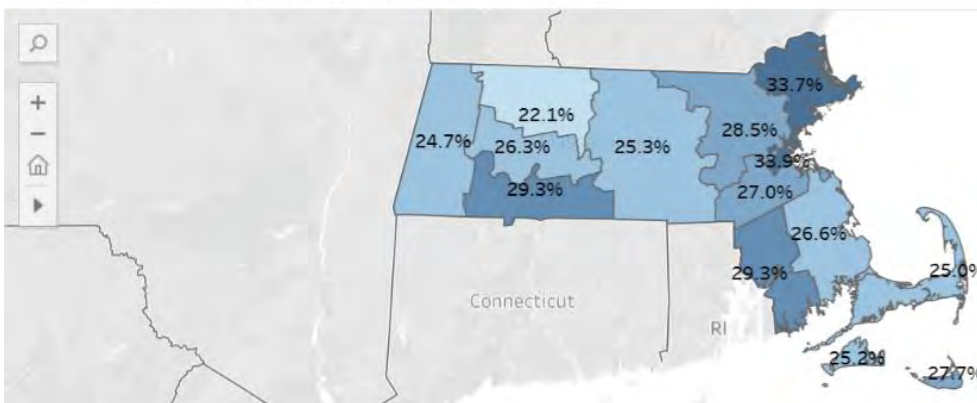
COVID-19: Did you ever get tested for COVID-19?

Percent Answering "No" by County



**Figure 22. Individuals Worried About COVID**

Percent Answering "Very worried" by County



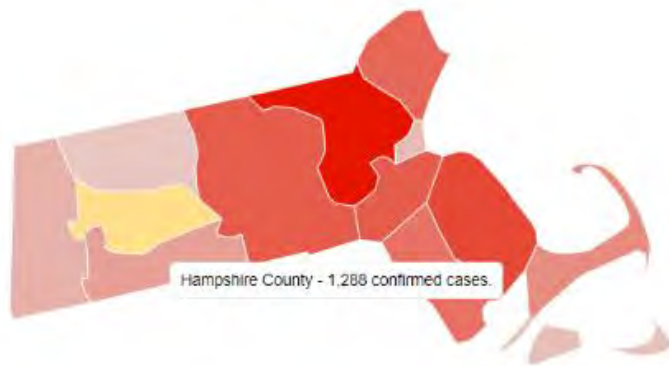
Despite media warnings of an influenza surge Hampshire County's 2021 influenza vaccination rate of 48% was lower than Massachusetts' almost 57% rate. In addition, there were lower

COVID-19 vaccination rates among minority groups, indicating that more resources will likely be required to increase vaccinations during future outbreaks.

**Figure 23. Adult Flu Vaccination Rate**

METRIC	COUNTY	U.S.	PEER GROUP	STATE
Adult Flu Vaccination Rate	48.0%	42.0%	44.1%	56.8%

**Figure 24. Reports of Lyme Disease in Hampshire County**



1,288

Total cases of Lyme disease confirmed in Hampshire County (2000 to 2018)

**Figure 25. Yearly Breakdown of Lyme Cases in Hampshire County**



Sources:

[Reg-1-HMCC-HVA-Final-June-2022.pdf \(region1hmcc.org\)](#)

[Emergency Preparedness Planning Tool \(region1hmcc.org\)](#)

[Hampshire County COVID-19 Data :: Public Health Institute of Western MA \(publichealthwm.org\)](#)

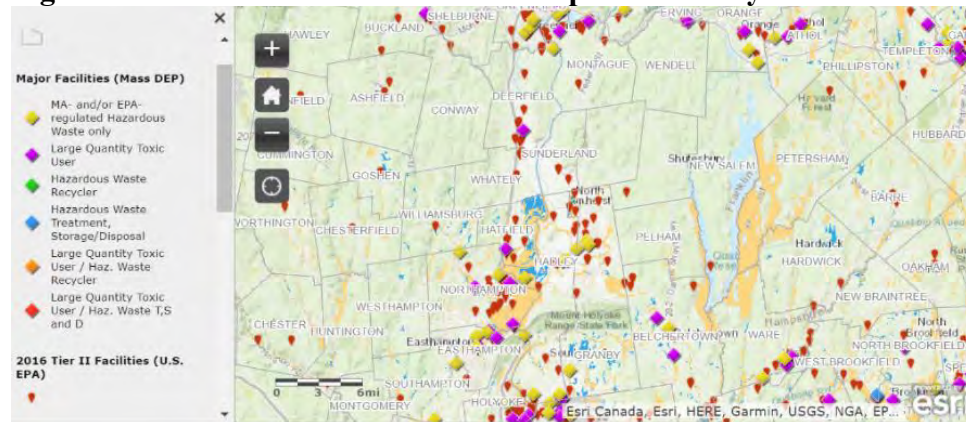
[How Healthy Is Hampshire County, Massachusetts? | US News Healthiest Communities](#)

## Environmental Hazards

Although there appears to be an even distribution of Tier II facilities throughout Hampshire County, most hazardous waste disposal areas are located within the more urbanized areas of the county. Most toxic substance users and storage areas are located in Easthampton, Northampton, Amherst, and Hadley. Most of Hampshire County has one Tier II facility, but only Eastampton, Northampton, Amherst, and Hadley appear to have hazardous waste recyclers, and large quantity toxic users. In the event of increased weather events, the hazardous materials may spread, especially as a result of flooding or high winds, and impact the health of people who live or work nearby.

Hampshire County also has a significant number of brownfields and polluters, some of which are located near the Connecticut River. If a major storm were to occur, there is a risk the Connecticut and Mill Rivers could be contaminated from these environmental hazards.

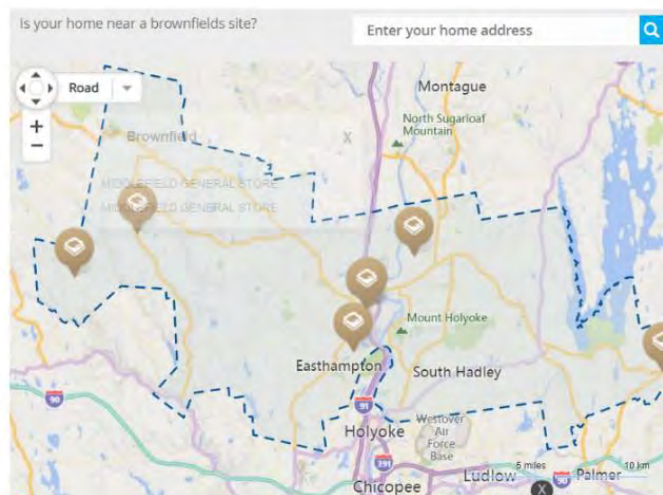
**Figure 26. Toxic Waste Facilities in Hampshire County**



**Figure 27. Brownfields in Hampshire County**

16 Brownfields found in the Hampshire County, MA

- Former Dpw Yards
- Former Dpw Yards
- Former Factory Facility
- Former Factory Facility
- Middlefield General Store
- Middlefield General Store
- Ferry Street Site
- Ferry Street Site
- Former Path Of The Mill River
- Former Path Of The Mill River
- Albert Farms Site
- Albert Farms Site
- Historic Mill River/round House
- Historic Mill River/round House
- Former Mill And Tank
- Former Mill And Tank
- Zatyrka Park
- Zatyrka Park
- Ware Gas Company
- Ware Gas Company





## Figure 28. Polluters in Hampshire County

28 Polluters found in the Hampshire County, MA

**Warren Pumps Llc**  
82 Bridges Ave  
Warren, MA 01083

**Warren Laundry Inc**  
29 Old W Brookfield Rd  
Warren, MA 01083

**Ufp Belchertown Lic**  
155 Bay Rd  
Belchertown, MA 01007

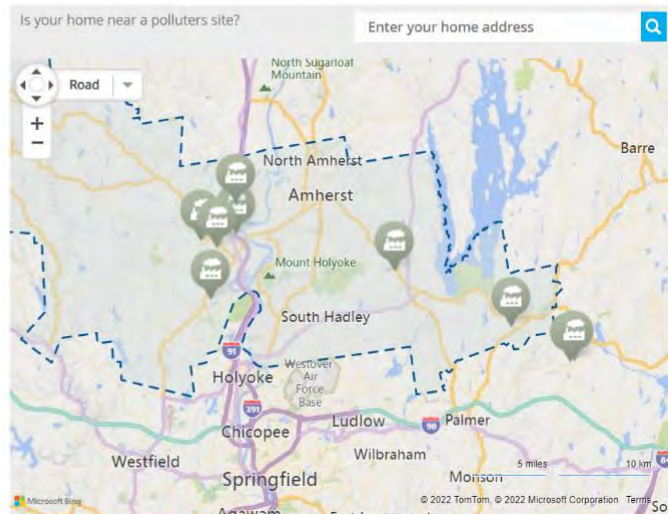
**Turf Care Supply Hatfield Plant**  
59 Dwight St  
Hatfield, MA 01038

**Techalloy Co Northampton Wire Plant**  
122 Federal St  
Northampton, MA 01060

**Summit Corp Pro Div**  
296 Nonotuck St  
Northampton, MA 01060

**Stanhome Inc**  
116 Pleasant St  
Easthampton, MA 01027

**Saint Gobain Ceramic Materials**



Sources:

[Massachusetts Toxics Users and Climate Vulnerability Factors gen 1 \(arcgis.com\)](https://www.arcgis.com)

[Hampshire County, MA Air & Water Pollution Sites \(homefacts.com\)](https://homefacts.com)

### Electrical Concerns

Hampshire County businesses, residences and electrical providers have been transitioning to solar power. Only 21% of Hampshire County's power is produced by natural gas. Solar and gas may be impacted by increased precipitation, storms, and heat days in the coming decades. According to interviews, power outages remain a significant concern throughout the county, and could disproportionately impact individuals that are homebound, elderly, or rely on medical equipment such as ventilators or oxygen generators. Over 1,000 individuals in this area are dependent on electricity for their medical equipment.

Northampton has a large National Grid site that provides electricity to the hill towns. Were this electrical hub to be damaged, areas in the hill towns and Northampton would be left without power. This is likely to be exacerbated by weather events that could put a strain on energy infrastructure in the coming decades. One notable example of this was during recent blackouts, which according to interviews, was an issue because residents did not have backup generators.

Interviews reveal that efforts to mitigate these problems are done by working with the utility companies, though these relationships could be strengthened. According to interviews, the increased usage of photovoltaic cells for electricity carries the increased risk of fires. There is also a concern with the usage of lithium-ion batteries in homes and electric vehicles, which carry the same risk. Solar panels and large backup batteries must now be registered with the local fire department.

Source: <https://findenergy.com/ma/hampshire-county-electricity/#production>

**Figure 29. Electricity-Dependent Medicare Beneficiaries**

Geographic Area	Beneficiaries	Electricity-Dependent Beneficiaries
Hampshire	36,741	1,000

Sources: <https://empowerprogram.hhs.gov/empowermap>  
 Hampshire County, MA: Electricity Rates, Providers & More (findenergy.com)

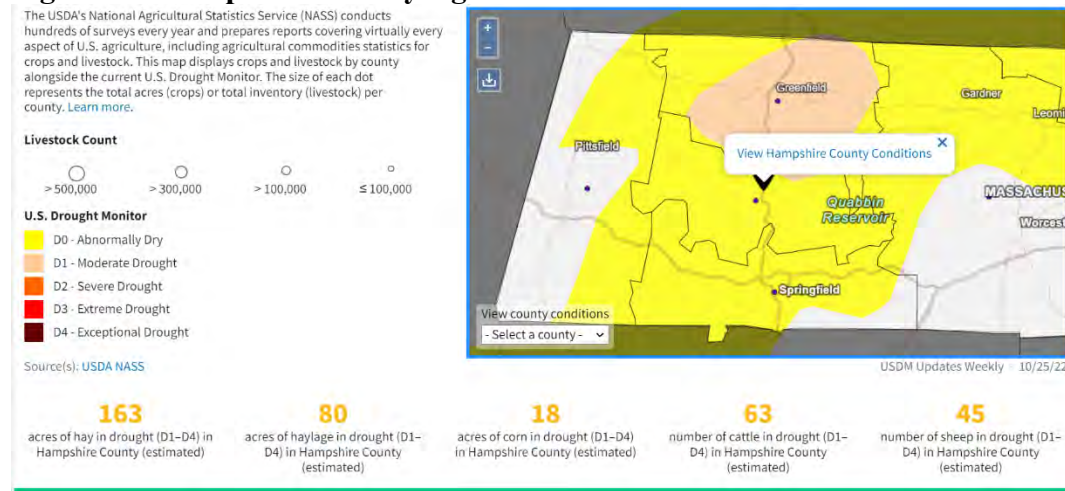
**Cyber Security**

Many officials are concerned with cybersecurity, though interviews reveal it is only a moderate priority as compared to natural hazards. The biggest problem is that smaller hill towns in Eastern Hampshire hit with ransomware would not have the infrastructure to deal with this threat. In addition, while there are some tech gurus, there are not enough, and they are expensive. Interviewees told us there is not a full-time cybersecurity officer within the county. Also according to interviews, older adults and those with cognitive difficulties may be at a higher risk of cybersecurity-based phishing scams.

**Food Sources**

Hampshire County’s crops are at risk of damage from high heat, pests or flooding. This may contribute to increased food insecurity in the coming decades. Flooded crops will at best be no longer safe to eat but could also carry the risk of harboring infectious diseases, and contaminated foods may cause foodborne illness outbreaks and lead to food shortages in an emergency. The areas that may be most affected are the hill towns near the rivers. At present, the different crops of Hampshire County, ranging from hay, haylage, to corn, are all within the D0 point of the drought monitor, meaning they are abnormally dry and at risk of affecting crop failures. Climate change will only increase this risk.

**Figure 30. Hampshire County Agriculture Conditions**



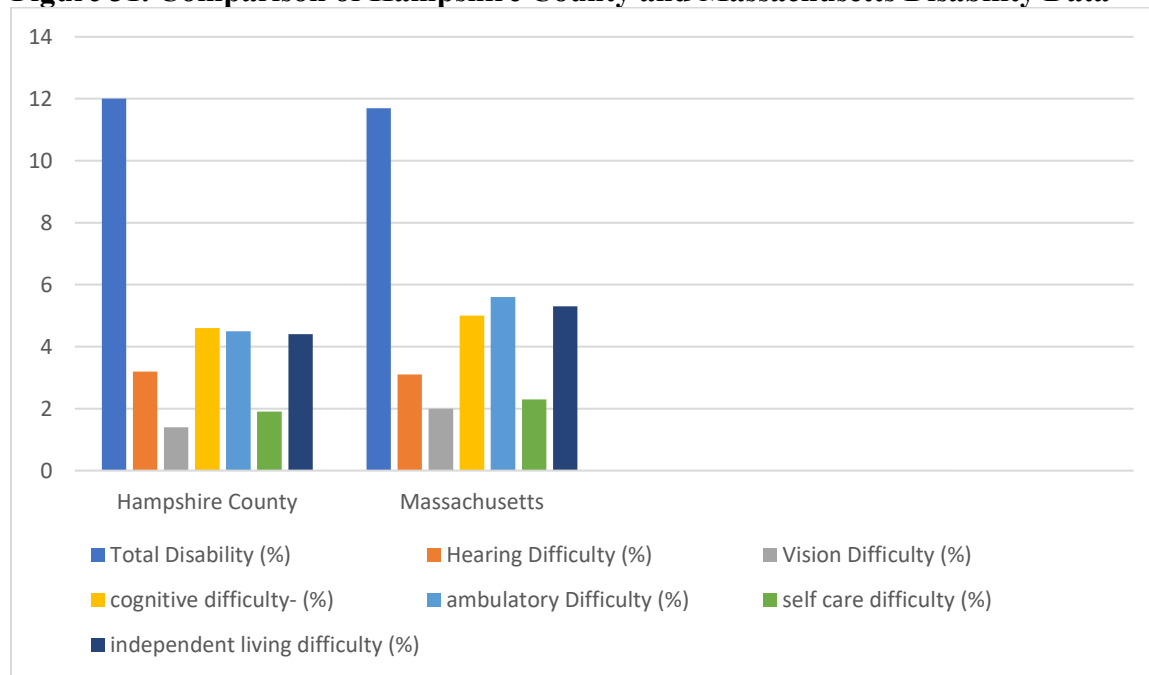
Source: [Hampshire County Conditions | Drought.gov](https://www.drought.gov/hampshire-county-conditions)

## Equity Concerns

### Disabilities

According to the Census, 12% of Hampshire County residents have a disability, which is comparable to the rate in Massachusetts. The largest disability category in Hampshire County is cognitive difficulties among 4.6% of residents. If individuals can't process emergency information and take appropriate actions to stay safe, they will need additional assistance in all types of emergencies. According to interviews, persons with disabilities (PwDs) are likely to have higher equity concerns during increased weather-related emergencies.

**Figure 31. Comparison of Hampshire County and Massachusetts Disability Data**



Sources:

- [Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Massachusetts - Census Bureau Profile](#)
- [Amherst Town city, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Belchertown town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Chesterfield town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Cummington town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Easthampton Town city, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Goshen town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Granby town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Hadley town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Hatfield town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Huntington town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Middlefield town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Northampton city, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Pelham town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Plainfield town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [South Hadley town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Southampton town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Ware town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Westhampton town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Williamsburg town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Worthington town, Hampshire County, Massachusetts - Census Bureau Profile](#)



## Transportation

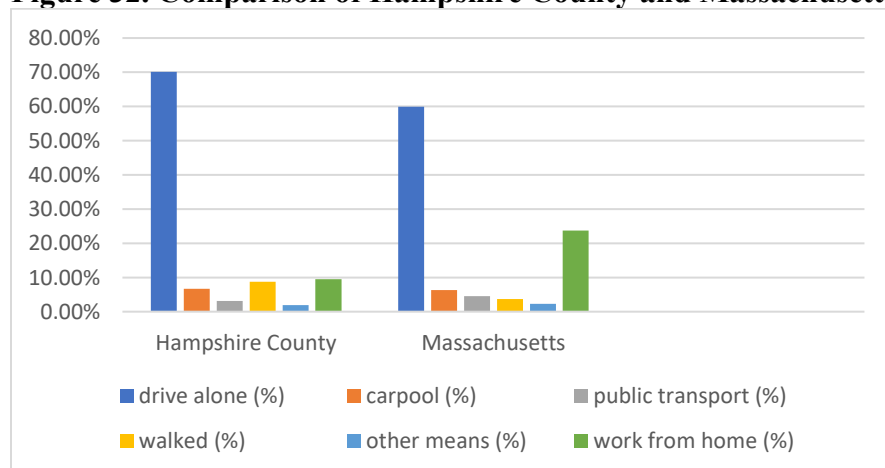
According to the Census, 70.1% of Hampshire County residents drive to work and only 3.1% rely on public transport. Using public transportation in a rural areas requires up to half a day of transfers and travel to get to centralized services. For those without private vehicles, transportation difficulties may be a significant barrier in evacuating, getting to a shelter, or obtaining necessities in the event of an emergency. According to Cooley-Dickinson’s CHNA, these effects are most likely to be felt in Amherst and Northampton due to higher rates of public transportation use. Based on the interviews, older adults and individuals with mobility difficulties would be disproportionately affected in the event of an evacuation. Cooley Dickinson’s 2019 CHNA elaborates on this:

“While many senior centers have van service, it must be scheduled in advance and is often only available for medical appointments. Pre-scheduled trips can make unplanned stops—for example, a stop to pick up medication—difficult or impossible. MassHealth also provides transportation for people with disabilities, but focus group participants spoke of how this system was unreliable and how drivers often were disrespectful and/or unable to provide needed assistance with mobility.”

Of the county’s highways and routes, Massachusetts’ highway I-91 is at greatest risk because of its proximity to the Connecticut River. If the highway near Amherst were to be flooded, transportation would be difficult for an evacuation.

In addition to students attending one of Hampshire County’s five colleges, residents who rely on public transportation or who live with a disability that prevents them from driving would be designated as Critical Transportation Needs (CTN) evacuees, which, according to Massachusetts CTN Operations Index, are defined as a “segment of the population that lacks personal transportation and requires government-provided transportation assistance to evacuate out of an at-risk area to a designated shelter.”

**Figure 32. Comparison of Hampshire County and Massachusetts Transportation to Work**



**Figure 33. Public Transit and Commute Data**

METRIC	COUNTY	U.S.	PEER GROUP	STATE
Distance to Public Transit <sup>①</sup>	515.0	573.4	563.3	438.6
Households With No Vehicle	7.6%	5.5%	4.9%	12.2%
Workers Commuting 60 Minutes or More	4.8%	6.8%	6.2%	12.9%

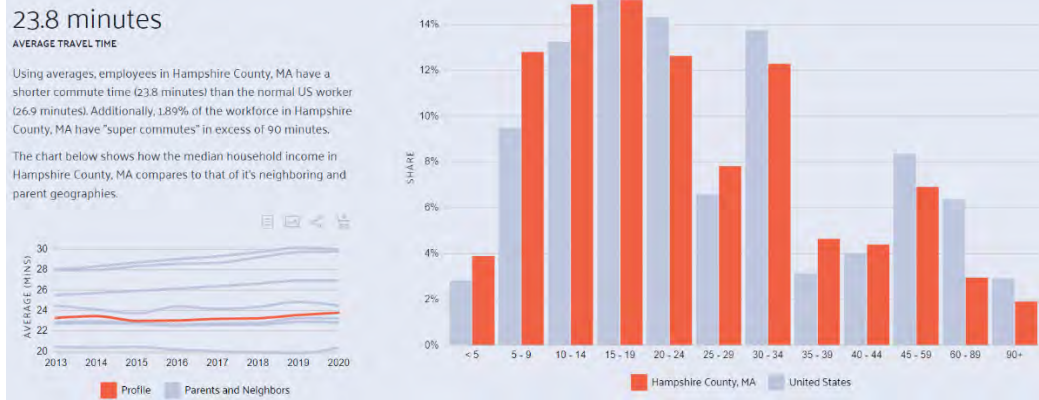
**Figure 34. Massachusetts Highways**



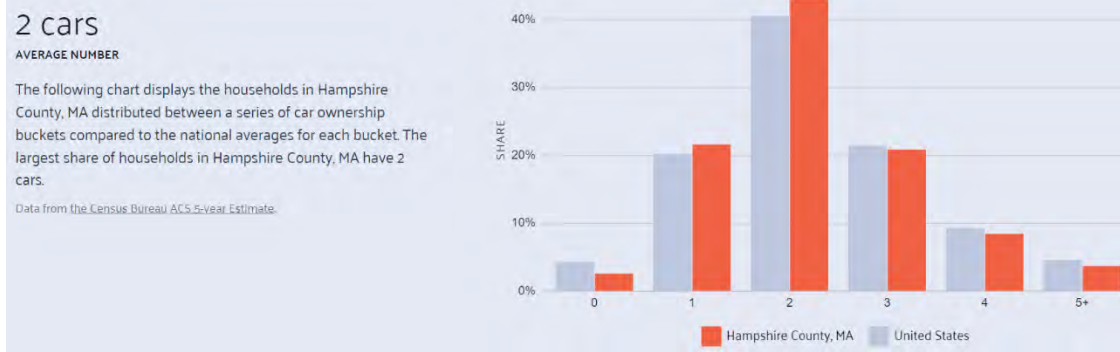
**Figure 35. Massachusetts Highways**



**Figure 36. Average Commute Times**



**Figure 37. Car Ownership**



Sources:

- [Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Massachusetts - Census Bureau Profile](#)
- [Amherst Town city, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Belchertown town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Chesterfield town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Cummington town, Hampshire County, Massachusetts - Census Bureau Profile](#)
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- [Westhampton town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Williamsburg town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Worthington town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [https://www.mass.gov/doc/critical-transportation-need-evacuation-operations-plan/download-2019-CDHC-CHNA-9.18.19-Sept-cover.pdf \(cooleydickinson.org\)](https://www.mass.gov/doc/critical-transportation-need-evacuation-operations-plan/download-2019-CDHC-CHNA-9.18.19-Sept-cover.pdf)
- [Massachusetts \(MA\) Road and Highway Map \(Free & Printable\) \(mapsofusa.net\)](#)
- [Hampshire County, MA | Data USA](#)

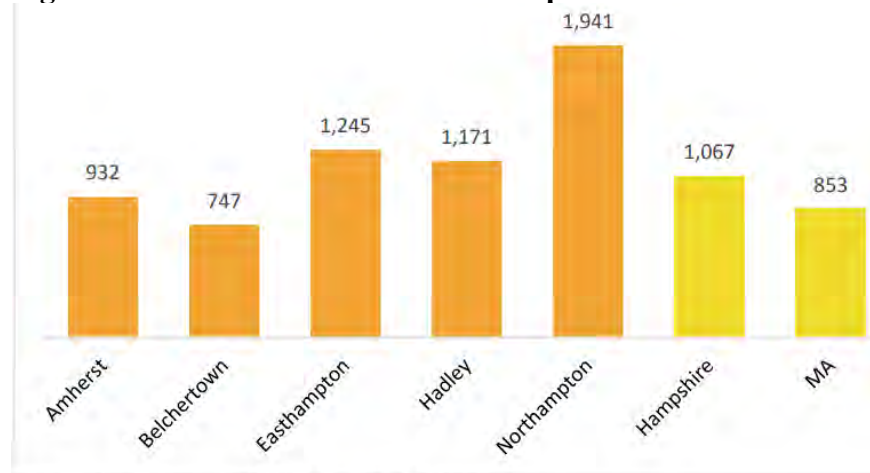


## Health

Although substance use emergency visits are lower in Hampshire County than in the other counties of Western Mass, admissions to treatment programs for heroin have risen. Like other parts of the Commonwealth, Hampshire County has seen an increase in overdose deaths, likely related to the increasing amounts of fentanyl. Effects of the crisis have hit Northampton the hardest in terms of opioid overdose emergency calls.

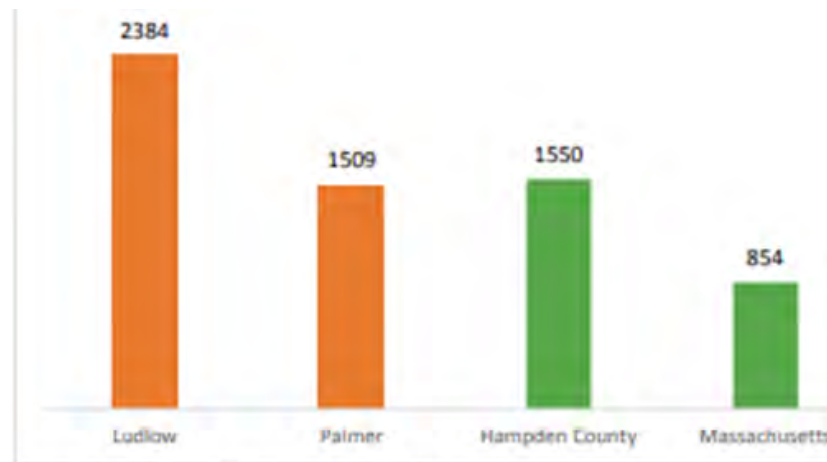
Factors such as smoking and food insecurity lead to an increased likelihood of cardiovascular disease and other health conditions. 14% of Hampshire County residents smoke, and chronic disease conditions may be exacerbated by the fact that Hampshire County has the highest rate of lack of access to healthy foods out of any Massachusetts county. According to Cooley Dickinson, heart disease is the leading cause of deaths in Hampshire County, making residents at increased risk because of the stressors and shocks experienced during an emergency.

**Figure 38. Mental Health Disorder Hospitalization Rates for Select Communities**



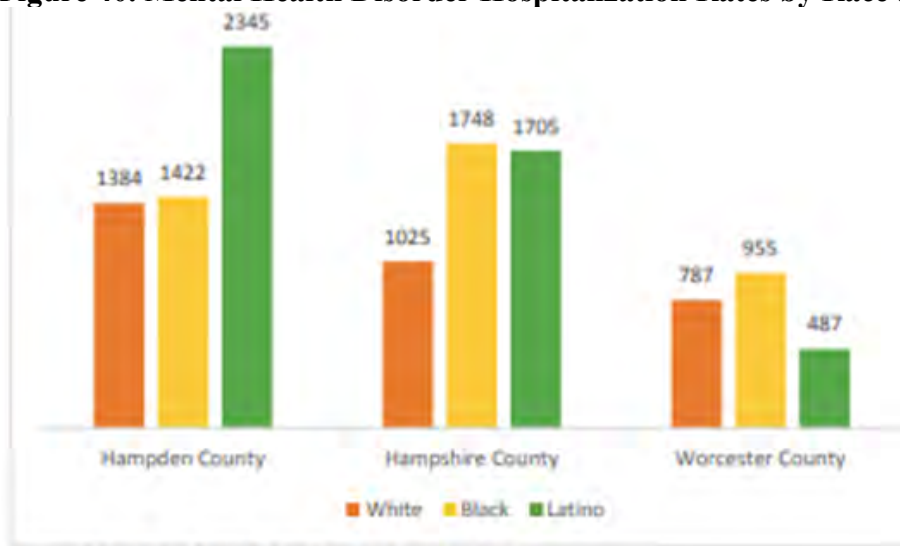
Source: MDPH, 2012 – 2015. Age-adjusted per 100,000

**Figure 39. Mental Health Disorder Hospitalization Rates for Select Communities**



Source: MDPH, 2014. Age-adjusted per 100,000

**Figure 40. Mental Health Disorder Hospitalization Rates by Race and County**

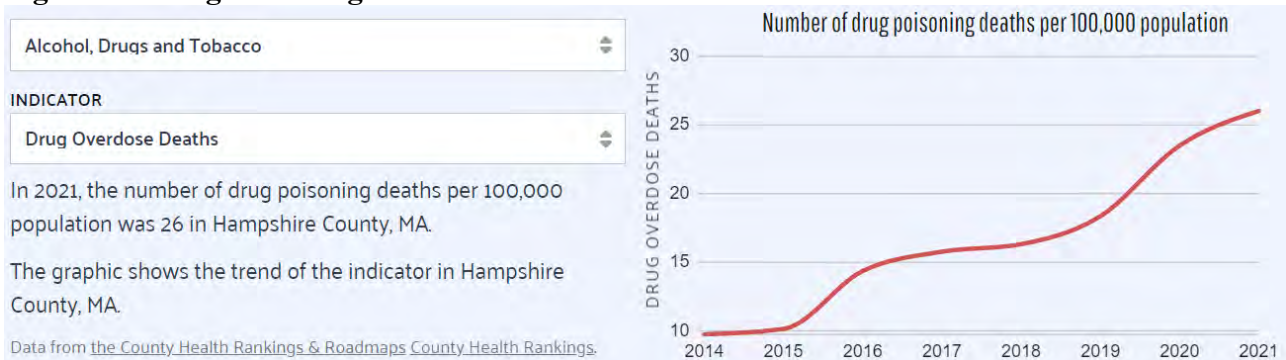


Source: MDPH, 2012-2015. Age-adjusted per 100,000

**Figure 41. Hampshire County Child Mortality Rate**

	Value	Error Margin
<b>Child Mortality Rate</b>	<b>40</b>	<b>30-50</b>
Hispanic	100	50-190
White	30	20-40

**Figure 42. Drug Poisoning Deaths**



**Figure 43. Opioid-Related Overdose Deaths, MA Residents: 2010-2021**

Massachusetts Department of Public Health

POSTED: JUNE 2022

County	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total 2010-2021
Barnstable	20	19	24	43	53	67	81	67	71	73	76	79	673
Berkshire	4	9	16	22	29	32	35	30	40	39	56	62	374
Bristol	78	82	95	115	145	172	243	239	218	260	233	290	2170
Dukes	0	0	0	1	5	7	3	2	4	3	6	5	36
Essex	49	57	93	119	205	235	274	299	273	279	253	289	2425
Franklin	6	6	8	10	11	18	14	9	22	17	20	36	177
Hampden	48	45	59	69	64	98	130	113	208	199	215	211	1459
Hampshire	12	10	11	30	26	16	36	28	38	39	34	44	324
Middlesex	91	130	118	152	273	341	402	348	321	304	300	360	3140
Nantucket	1	0	0	0	1	1	2	3	1	2	1	4	16
Norfolk	58	64	70	82	125	164	213	166	170	129	156	165	1562
Plymouth	38	67	57	86	110	174	190	202	151	176	185	168	1604
Suffolk	63	85	90	110	146	199	241	251	215	218	289	295	2202
Worcester	79	82	91	115	162	222	246	249	281	267	282	282	2358
<b>Total Deaths</b>	<b>547</b>	<b>656</b>	<b>733</b>	<b>954</b>	<b>1,356</b>	<b>1,747</b>	<b>2,110</b>	<b>2,006</b>	<b>2,013</b>	<b>2,005</b>	<b>2,105</b>	<b>2,290</b>	<b>18,522</b>

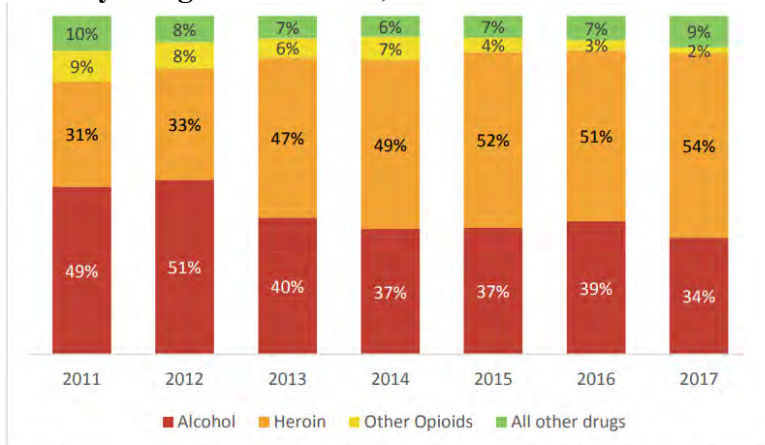
**Technical Notes**

- Data for 2020 to 2021 deaths are preliminary and subject to updates. Case reviews of deaths are evaluated and updated on an ongoing basis. A large number of death certificates have yet to be assigned final cause of death codes. 2020 to 2021 counts are based on the estimates rather than confirmed cases. Data updated on 04/01/2022.
- Numbers and calculations based on values less than 5 are suppressed for years in which the death file is not yet closed if they are based on pending cases.
- Please note that some totals may not add up due to deaths with unknown city/town of residence and the rounding of counts.
- Opioids include heroin, illicitly manufactured fentanyl, opioid-based prescription painkillers, and other unspecified opioids.
- Beginning with the August 2019 report, DPH updated the case definition used to identify opioid-related overdose deaths to match the CDC's case definition. The following International Classification of Disease (ICD-10) codes for mortality were selected from the underlying cause of death field to identify poisonings/overdoses: X40-X44, X60-X64, X85, and Y10-Y14. All multiple cause of death fields were then used to identify an opioid-related overdose death: T40.0, T40.1, T40.2, T40.3, T40.4, and T40.6.
- This report tracks all opioid-related overdoses due to difficulties in reporting heroin-associated overdoses separately. Many deaths related to heroin are not specifically coded as such due to the fast metabolism of heroin into morphine.
- To maintain consistency with NCHS reporting, DPH does not include the ICD-10 code F11.1, which may include opioid-related overdose deaths.
- Beginning with the May 2017 report, DPH started reporting opioid-related overdose deaths for all intents, which includes unintentional/undetermined and suicide.

**Sources**

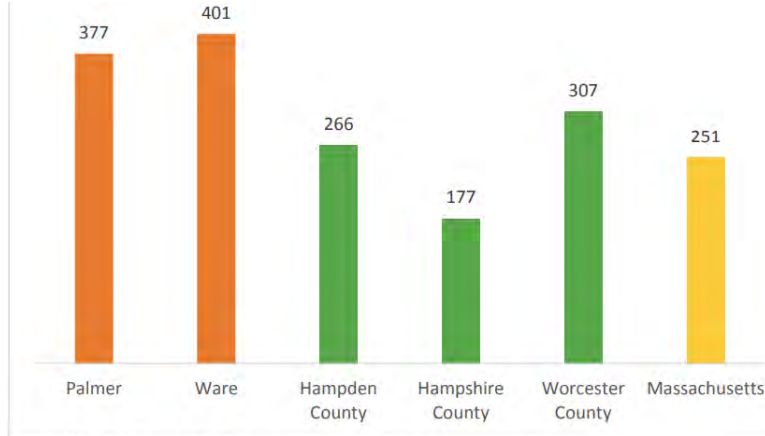
- Massachusetts Registry of Vital Records and Statistics, MDPH
- Massachusetts Office of the Chief Medical Examiner

**Figure 44. Substance Use Admissions to Treatment Programs in Hampshire County by Primary Drug of Admission, 2011-2017**



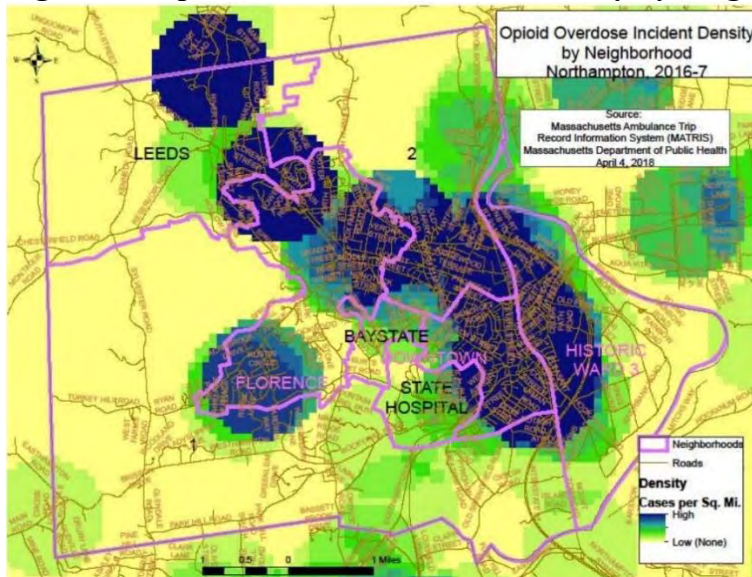
Source: Massachusetts Department of Public Health. Bureau of Substance Addiction Services. 2018. Geographic Fact Sheets FY 2017, Admission Statistics by County. Available at <https://www.mass.gov/lists/substance-abuse-treatment-admissions-statistics#geographic-based-admissions-statistics>

**Figure 45. Substance Use Disorder Emergency Department Visits for Select Communities and Counties**



Source: MDPH, 2010-2014. Age-adjusted per 100,000

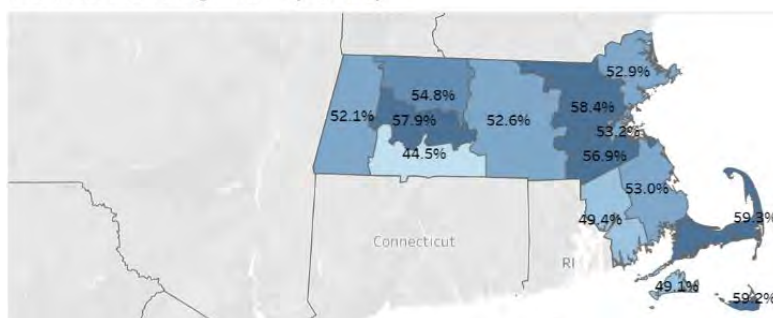
**Figure 46. Opioid Overdose Incidents Density by Neighborhood – Northampton: 2016-2017**



**Figure 47. COVID Community Survey: Alcohol Use Past 30 Days, by County**

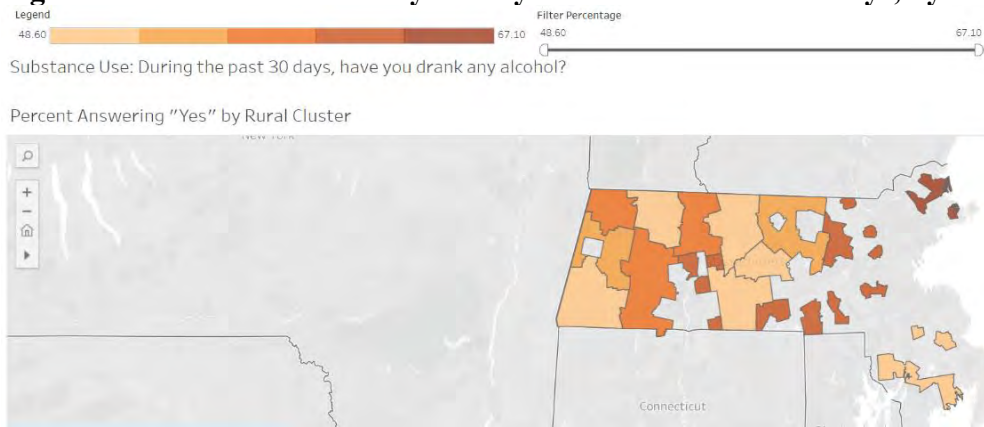
Substance Use: During the past 30 days, have you drunk any alcohol?

Percent Answering "Yes" by County





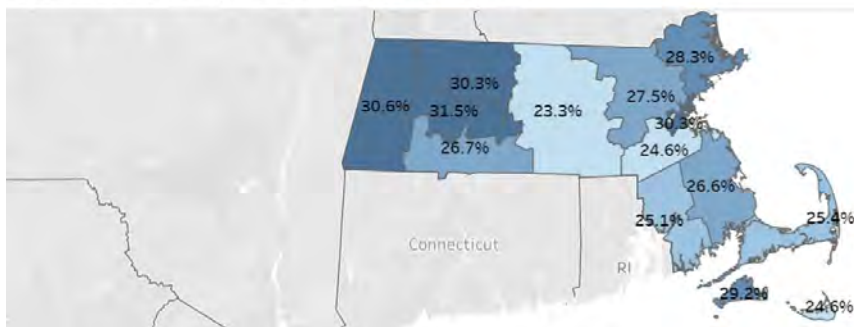
**Figure 48. COVID Community Survey: Alcohol Use Past 30 Days, by Rural Cluster**



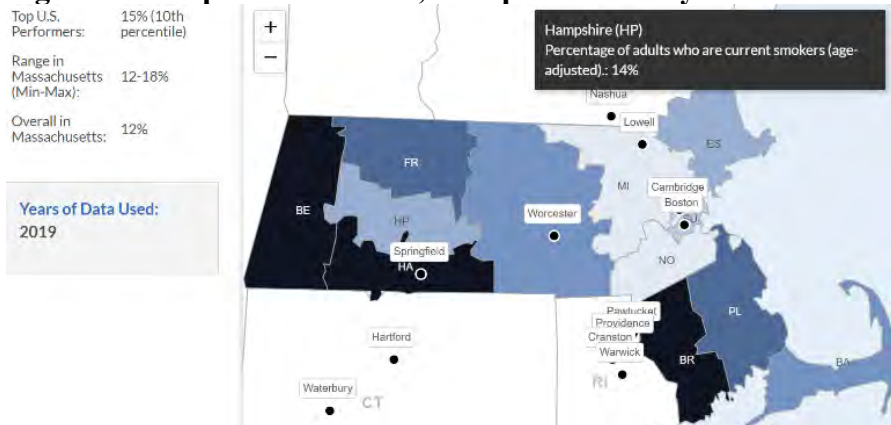
**Figure 49. COVID Community Survey: PTSD-like Reactions Related to COVID**

Mental Health: In the past month, have you had any PTSD-like reactions to things you have seen, heard, or experienced related to the COVID-19 outbreak?

Percent Answering "3+ Reactions" by County



**Figure 50. People Who Smoke, Hampshire County**



**Figure 51. Lack of Access to Healthy Foods**

County	% Limited Access to Healthy Foods	% Food Insecurity	County Value	Z-Score
Barnstable	9%	7%	8.6	0.38
Berkshire	6%	10%	8.3	1.10
Bristol	4%	10%	8.5	0.62
Dukes	9%	7%	8.5	0.62
Essex	4%	8%	9.0	-0.59
Franklin	5%	9%	8.6	0.38
Hampden	5%	11%	8.3	1.10
Hampshire	12%	8%	8.1	1.59
Middlesex	3%	6%	9.4	-1.55
Nantucket	3%	7%	9.1	-0.83
Norfolk	4%	6%	9.4	-1.55
Plymouth	5%	6%	9.2	-1.07
Suffolk	0%	11%	8.8	-0.10
Worcester	5%	8%	8.8	-0.10

Sources:

<https://www.baystatehealth.org/-/media/files/about-us/community-programs/community-benefits/2019-community-health-needs-assessments/baystate-wing-2019-chna-report-final-web.pdf?la=en>

<https://www.cooleydickinson.org/wp-content/uploads/2019/09/2019-CDHC-CHNA-9.18.19-Sept-cover.pdf>  
download (mass.gov)

[Hampshire County, Massachusetts | County Health Rankings & Roadmaps](#)

[COVID-19 Community Impact Survey Data Dashboard | Mass.gov](#)

[Hampshire County, MA | Data USA](#)

### Socioeconomic Status

The median household income in Hampshire County is \$77,495, which is lower than the state (\$89,645) but higher than the U.S. median (\$69,717). While many residents of Hampshire County have sufficient resources to afford healthy foods, there are some areas with food deserts, where healthy foods are difficult to access. Hampshire County’s rate of food insecurity is 8.2%, lower than other parts of Western Mass, but higher than other parts of the Commonwealth. According to interviews, food banks are available, but sometimes not used out of a fear of stigma. According to interviews, the elderly population in Northampton would not have enough food supplies if there was an emergency that required them to shelter in place.

The range of Hampshire County’s median household income could mean that some families are likely to experience food insecurity or be unable to pay medical bills related to chronic disease management. With half of the county’s residents making over \$77,000, a sizable number of residents are likely able to manage potential health concerns and bills, though during the pandemic, around 40% of residents were worried about paying bills. This worry was more prominent among individuals in the hill towns compared to those living in the central Pioneer Valley region.

There is also a concern with affordable housing and overburdened renters with a possible fear of homelessness. Older adults and people with disabilities may especially experience difficulty accessing appropriate housing. According to the [2019 Cooley Dickinson CHNA](#):

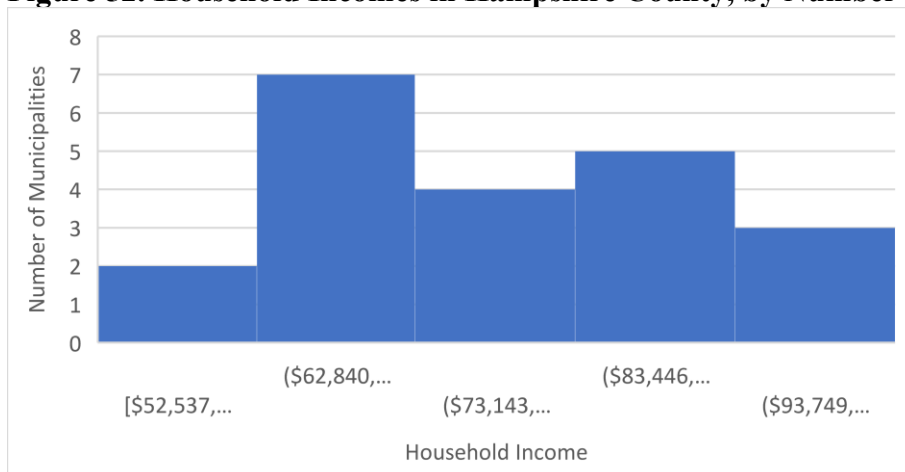
“It can be challenging for seniors and those with disabilities to access appropriate housing. Community forums and key informant interviews with older adults, people with disabilities, and their care providers highlighted this issue, noting that older adults and people with disabilities want to remain independent and stay in their homes or apartments, but often lack the ability to do so. Often they need homes that are handicapped-accessible and/or provide living space for a care provider. This is even more of a challenge if they need subsidized housing. There is a need for more support to help older adults age in place, more affordable housing opportunities for 28 2019 Community Health Needs Assessment: Cooley Dickinson Health Care Public Health Institute of Western MA older adults and people with disabilities, and congregate housing opportunities that allow people to keep their pets.”

While there are affordable housing units, half of Hampshire County is overburdened by rent, paying more than 30% of their income to rent. For every 20,000 Hampshire County residents, there is only one housing authority to help them.

During the pandemic, a quarter of Hampshire County residents reported being worried about being able to pay their mortgage or rents, and 13% were worried they would have to move, with the worry being higher among Pioneer Valley region residents compared to the hill towns. It’s possible that the number is higher given that more than half of Hampshire County residents are rent overburdened.

Source:  
<https://censusreporter.org/profiles/05000US25015-hampshire-county-ma/>

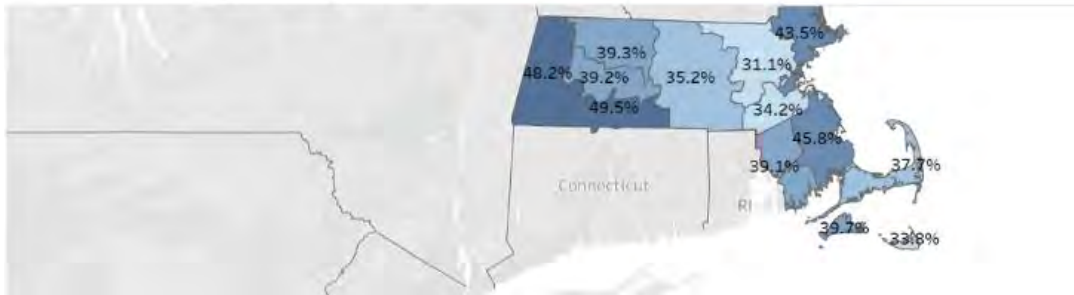
**Figure 52. Household Incomes in Hampshire County, by Number of Municipalities**



**Figure 53. COVID Community Impact Survey: Financial Worries, by County**

Basic Needs: Are you worried about paying at least one expense/bill in the next few weeks?

Percent Answering "Yes" by County



**Figure 54. COVID Community Impact Survey: Financial Worries, by Rural Cluster**

Basic Needs: Are you worried about paying at least one expense/bill in the next few weeks?



**Figure 55. Food Deserts in Hampshire County**





**Figure 56. COVID Community Impact Survey: Food Insecurity**

Basic Needs: Are you worried about getting food/groceries for you/your family now or in the next couple of weeks?

Percent Answering "Yes" by County



**Figure 57. Percentage of Population Lacking Adequate Access to Food**

Diet and Exercise

INDICATOR

Food Insecurity

In 2021, the percentage of population who lack adequate access to food was 8.2% in Hampshire County, MA.

The graphic shows the trend of the indicator in Hampshire County, MA.

Data from [the County Health Rankings & Roadmaps County Health Rankings](#).



**Figure 58. Hampshire County Affordable Housing Data**

**Income Based Apartments in Hampshire County, Massachusetts**

Hampshire County features 1,231 income based apartments. Tenants of income based apartments typically pay no more than 30% of their income towards rent and utilities.

**Low Rent Apartments in Hampshire County, Massachusetts**

There are 875 rent subsidized apartments that do not provide direct rental assistance but remain affordable to low income households in Hampshire County.

**Housing Choice Vouchers in Hampshire County, Massachusetts**

On average, Section 8 Housing Choice vouchers pay Hampshire County landlords \$800 per month towards rent. The average voucher holder contributes \$400 towards rent in Hampshire County.

The maximum amount a voucher would pay on behalf of a low-income tenant in Hampshire County, Massachusetts for a two-bedroom apartment is between \$1,101 and \$1,345.

**2023 Hampshire County, Massachusetts Fair Market Rents and Housing Choice Voucher Payment Standards**

[Fair Market Rents](#) can be used to better understand the average housing costs of an area. Fair Market Rents are used by HUD to establish payment and rent standards for federal rental assistance programs like the Section 8 Housing Choice Voucher Program.

**Figure 59. Housing Data *continued***  
**Population and Household Demographics**

Hampshire County is a county in [Massachusetts](#) with a population of 160,759. There are 58,631 households in the county with an average household size of 2.36 persons. 34.16% of households in Hampshire County are renters.

**Income and Rent Overburden in Hampshire County**

The median gross income for households in Hampshire County is \$61,368 a year, or \$5,114 a month. The median rent for the county is \$965 a month.

Households who pay more than thirty percent of their gross income are considered to be Rent Overburdened. In Hampshire County, a household making less than \$3,217 a month would be considered overburdened when renting an apartment at or above the median rent. 50.87% of households who rent are overburdened in Hampshire County.

**Area Median Income In Hampshire County**

Affordable housing program eligibility is always determined by one's income. Each household's income is compared to the incomes of all other households in the area. This is accomplished through a statistic established by the government called the Area Median Income, most often referred to as AMI. The AMI is calculated and published each year by HUD.

In Hampshire County, HUD calculates the Area Median Income for a family of four as \$91,200.

Most affordable housing programs determine eligibility based on the percent of AMI a given household's income is. Among the programs that determine eligibility based on the AMI are Section 8, HOME, LIHTC, Section 515, 202 and 811.

**Figure 60. Hampshire County Affordable Housing Snapshot**

<b>Total Affordable Apartment Properties</b>	37
<b>Total Low Income Apartments</b>	2,193
<b>Total Housing Units with Rental Assistance</b>	1,231
<b>Percentage of Housing Units Occupied By Renters</b>	34.16%
<b>Average Renter Household Size</b>	2.14
<b>Average Household Size</b>	2.36
<b>Median Household Income</b>	\$61,368 ±\$1,419
<b>Median Rent</b>	\$965 ±\$24
<b>Percentage Of Renters Overburdened</b>	50.87% ± 2.85pp
<b>Total Population</b>	160,759

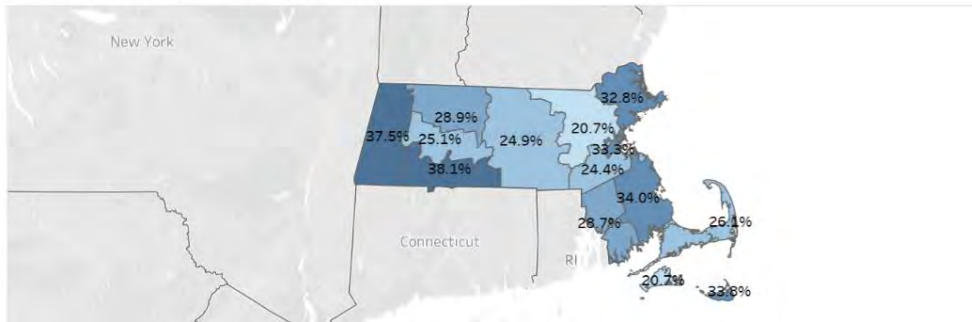
**Figure 61. Housing Authorities in Hampshire County**

There are **8 Housing Authorities** in Hampshire County, Massachusetts, serving a population of **161,197 people** in an area of **528 square miles**. There is **1 Housing Authority per 20,149 people**, and **1 Housing Authority per 65 square miles**.

In Massachusetts, Hampshire County is ranked **4th of 14 counties** in Housing Authorities per capita, and **12th of 14 counties** in Housing Authorities per square mile.

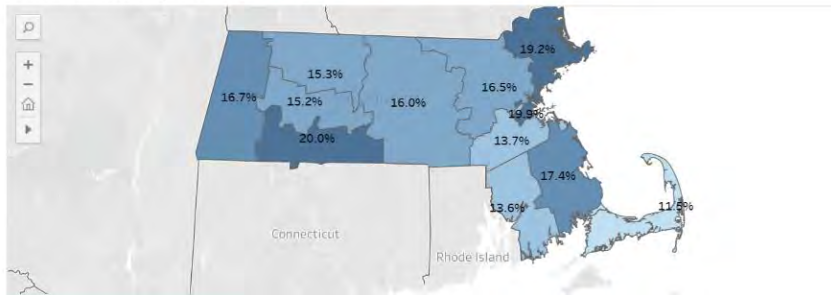
**Figure 62. COVID Community Impact Survey: Financial Housing Concerns, by County**  
 Housing: Are you worried about paying your mortgage, rent, or utilities in the next few weeks?

Percent Answering "Yes" by County



**Figure 63. COVID Community Impact Survey: Financial Housing Concerns, by County**  
 Housing: Are you worried that you may have to move out of where you live in the next few months?

Percent Answering "Yes" by County



**Figure 64. COVID Community Impact Survey: Financial Housing Concerns, by Rural Cluster**



Housing: Are you worried that you may have to move out of where you live in the next few months?

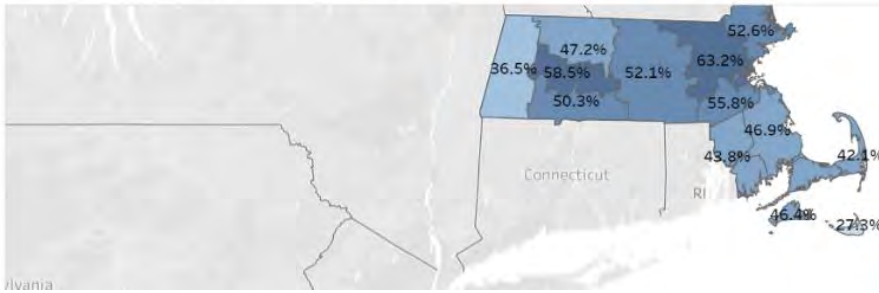
Percent Answering "Yes" by Rural Cluster



### Figure 65. COVID Community Impact Survey: Remote Work, by County

Employment: Are you currently working from home?

Percent Answering "Yes" by County

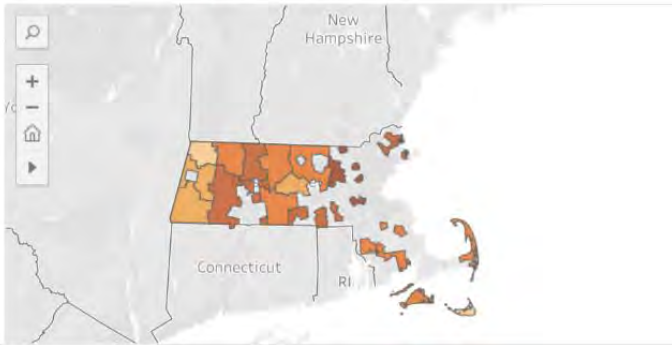


### Figure 66. COVID Community Impact Survey: Remote Work, by Rural Cluster



Employment: Are you currently working from home?

Percent Answering "Yes" by Rural Cluster



Sources:

- [Housing Authorities - Hampshire County, MA \(Low Income & Section 8\) \(countyoffice.org\)](#)
- [Children in Single-Parent Households in Massachusetts | County Health Rankings & Roadmaps](#)
- [Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Massachusetts - Census Bureau Profile](#)
- [Amherst Town city, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Belchertown town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Chesterfield town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Cummington town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Easthampton Town city, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Goshen town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Granby town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Hadley town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Hatfield town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Huntington town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Middlefield town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Northampton city, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Pelham town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Plainfield town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [South Hadley town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Southampton town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Ware town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Westhampton town, Hampshire County, Massachusetts - Census Bureau Profile](#)
- [Williamsburg town, Hampshire County, Massachusetts - Census Bureau Profile](#)



[Worthington town, Hampshire County, Massachusetts - Census Bureau Profile](#)  
[Children in Single-Parent Households in Massachusetts | County Health Rankings & Roadmaps](#)  
[USDA ERS - Go to the Atlas](#)  
[COVID-19 Community Impact Survey Data Dashboard | Mass.gov](#)  
[2019-CDHC-CHNA-9.18.19-Sept-cover.pdf \(cooleydickinson.org\)](#)

## Other Concerns

Although Hampshire County is well prepared for emergencies per Department of Homeland Security guidelines, there are concerns with the large population of college students living in close proximity to the river, which could flood and cause the two bridges to be closed. Impassable bridges and traffic jams would make an evacuation difficult or impossible. Certain parts of the county may also have difficulty accessing information in an emergency where Internet service is unavailable or not as fast. According to interviews, those living in senior housing would more likely rely on communications through landlines and in person instead of computers or through the Internet.

The routes to the five colleges are subject to traffic jams, especially if an evacuation is needed. This is important considering that students are often dependent on their colleges for help unless they are able to get home, which may not be feasible during an emergency. If an emergency occurred, there could be risks of civil unrest in that area, which could overburden already understaffed police departments.

Emergency information is hard to retrieve for people and families without reliable Internet access. In addition to potentially spotty cell service around Hampshire County, 11% of residents were worried that they wouldn't have Internet access for their family at present or in the next few weeks. Those living in hill towns are more likely to express concern about access at 25% compared to 10% of Pioneer Valley residents.

**Figure 67. List of Hampshire County Regional Shelters**

Type	Facility Name	Issues	Capacity	Shelter Location & Contact	Local EMD & Contact
Primary and Animal	Smith Vocational	Limited generator capacity & would require class rescheduling during extended use	662 (20 sq. ft./ pp) 331 (40 sq. ft./ pp)	Jeffrey Peterson, Superintendent Smith Vocational & Agricultural High School 80 Locust St. Northampton, MA 01060 413-587-1414 ext. 3434 <a href="mailto:jpeterson@smithtec.org">jpeterson@smithtec.org</a>	Jon Davine, ERC 26 Carlon Drive Northampton, MA 01060 (413) 587-1032 <a href="mailto:jdavine@northamptonma.gov">jdavine@northamptonma.gov</a>
Primary and Animal	Amherst Regional Middle School		500 (20 sq. ft./pp) 250 (40 sq. ft./pp)	170 Chestnut St Amherst, MA 01002 Superintendent: Maria Geryk (413) 362-1805 <a href="mailto:gerykm@arps.org">gerykm@arps.org</a>	Chief Tim Nelson, EMD Amherst, MA 01002 413-259-3082 <a href="mailto:nelson@amherstma.gov">nelson@amherstma.gov</a>
Primary and Animal	Ware Junior/Senior High School	Emergency Generator but only for limited areas of the building, no A/C on Emergency Generator	528 (20 sq. ft./ pp) 264 (40 sq. ft./ pp)	237 West Street Ware, MA 01082 Superintendent: Marlene A. DiLeo P: 413-967-4271 F: 413-967-9580 <a href="mailto:mdileo@ware.k12.ma.us">mdileo@ware.k12.ma.us</a>	Dep. Chief Ed Wloch, EMD 413-967-9631 Bus. Office 413-967-5901 Dispatch <a href="mailto:ewlochtownofware@comcast.net">ewlochtownofware@comcast.net</a>
Primary and Animal	New Hingham Regional Elementary	Lack of Parking & will need to reschedule classes during extended use	438 (20 sq. ft./ pp) 232 (40 sq. ft./ pp)	30 Smith Road Chesterfield, MA 01012 413-296-0000 Superintendent: Craig L Jurgensen 19 Stage Rd, Westhampton, MA 01027 P: 413-527-7200 F: 413-529-9497 <a href="mailto:cjurgensen@hr-k12.org">cjurgensen@hr-k12.org</a>	Larry Holmberg, EMD PO Box 176 Chesterfield, MA 01012 413-529-1700 days 413-296-4247 nights/ weekends 508-304-2585 cell 413-529-2237 fax <a href="mailto:lhholmberg@crockers.com">lhholmberg@crockers.com</a>

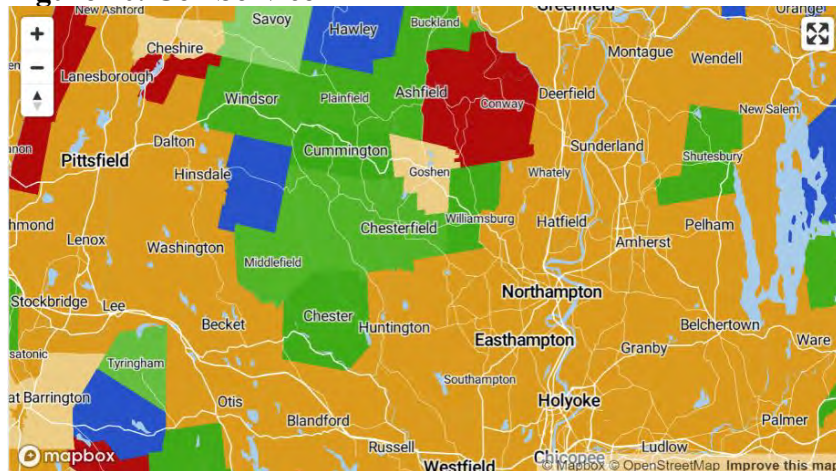
**Figure 68. List of Hampshire County Regional Shelters *continued***

Primary	South Hadley Middle School		770 (20 sq. ft / pp) 110 (40 sq. ft./ pp)	Michael F. Smith Middle School 100 Mosier Street South Hadley, MA 01075 Phone: (413) 538-5074 Fax: (413) 538-5003  <b>Superintendent:</b> Nicholas Young 116 Main Street, South Hadley, MA 01075 P: 413-538-5060 F: 413-532-6284 <a href="mailto:nyoung@shschools.com">nyoung@shschools.com</a>	Sharon Hart, Emergency Management Director, Director of Public Health 116 Main Street Suite 102 South Hadley, MA 01075 cell (413) 315-7307 work (413) 538-5017 x 204 fax (413) 538-5012 <a href="mailto:shart@southhadleyma.gov">shart@southhadleyma.gov</a>
Secondary	JFK Middle School			100 Bridge Road Florence, MA 01062 (413) 587-1489 or (413) 587-1478  <b>Superintendent:</b> Dr. John A. Provost 212 Main St. Rm. 200 Northampton, MA 01060 413-587-1315 <a href="mailto:jprovost@northampton-k12.us">jprovost@northampton-k12.us</a>	Jon Davine, ERC 26 Carlon Drive Northampton, MA 01060 (413) 587-1032 <a href="mailto:jdavine@northamptonma.gov">jdavine@northamptonma.gov</a>
Secondary	Hampshire Regional High School			<b>Superintendent:</b> Craig L Jurgensen 19 Stage Rd, Westhampton, MA 01027 P: 413-527-7200 F: 413-529-9497 <a href="mailto:cjurgensen@hr-k12.org">cjurgensen@hr-k12.org</a>	Chief Chris Norris, EMD 48 Stage Road Westhampton, MA 01027 (413) 529-7181 <a href="mailto:dcnorris911@msn.com">dcnorris911@msn.com</a>

**Figure 69. Routes Near the County's Colleges**



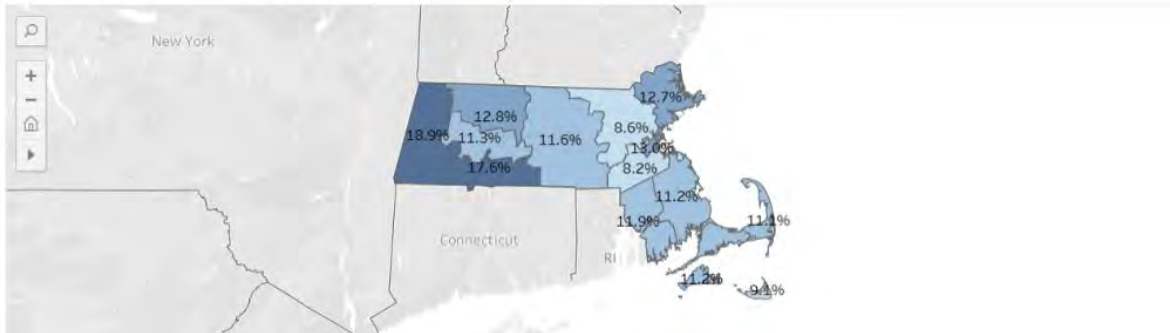
**Figure 70. Cell Service**



**Figure 71. COVID Community Impact Survey: Worried About Internet Access, by County**

Basic Needs: Are you worried about getting internet access for you/your family now or in the next couple of weeks?

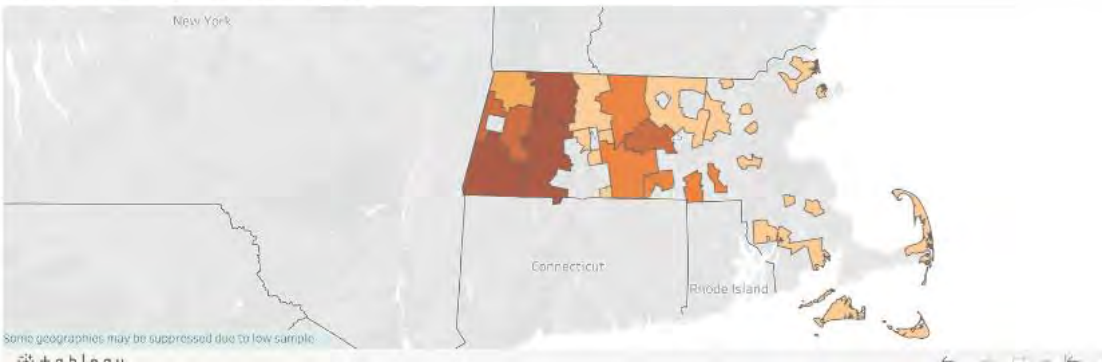
Percent Answering "Yes" by County



**Figure 72. COVID Community Impact Survey: Worried About Internet Access, by Rural Cluster**



Percent Answering "Yes" by Rural Cluster



**Sources:**

- <https://wrhsac.org/projects-and-initiatives/shelter-evacuation/>
- [hampshire county map - Search \(bing.com\)](#)
- [Massachusetts Cell Phone Coverage Map & Carrier Reviews \(deadcellzones.com\)](#)
- [Mobile Coverage & Cell Phone Plans in Hampshire County, MA | BestNeighborhood.org](#)
- [University of Massachusetts Amherst Diversity: Racial Demographics & Other Stats - College Factual](#)
- [Hampshire College Diversity: Racial Demographics & Other Stats - College Factual](#)
- [Amherst College Diversity: Racial Demographics & Other Stats - College Factual](#)
- [Mount Holyoke College Diversity: Racial Demographics & Other Stats - College Factual](#)
- [Smith College Diversity: Racial Demographics & Other Stats - College Factual](#)
- [COVID-19 Community Impact Survey Data Dashboard | Mass.gov](#)

**Figure 73. Selected Population Characteristics Contributing to Inequities in Emergencies**

	No Vehicle		Below Poverty Level		Less than 9th grade education		Over 65 who live alone		No English Spoken		One Disability		Two Disabilities	
	Number of People	% of Population	Number of People	% of Population	Number of People	% of Population	Number of People	% of Population	Number of People	% of Population	Number of People	% of Population	Number of People	% of Population
Amherst	682	5.5	6,426	27.5	330	2.5	994	27.4	83	0.2	1,891	4.3	1,083	2.7
Belchertown	191	2.2	907	6.1	122	1.2	513	23.1	38	0.3	841	5.6	531	3.5
Chesterfield	0	0	55	4.5	12	1.3	81	28.9	0	0	98	8	44	3.6
Cummington	5	1.2	90	10.7	0	0	70	32.4	0	0	67	7.9	53	6.3
Easthampton	142	1.6	1,469	9.2	92	0.7	984	32.3	49	0.3	1,233	7.7	888	5.6
Goshen	0	0	43	4.7	0	0	14	9.2	0	0	19	2.1	55	6
Granby	0	0	238	3.8	50	1.1	295	24.9	0	0	215	3.4	366	5.8
Hadley	15	0.6	349	6.7	89	2.2	341	27	0	0	236	4.5	246	4.7
Hatfield	28	1.6	213	6.5	9	0.4	237	32.7	0	0	247	7.5	154	4.7
Huntington	21	1.8	184	8.9	23	1.5	112	30.2	0	0	169	8.2	97	4.7
Middlefield	0	0	19	4.7	2	0.6	20	23	0	0	38	9.3	22	5.4
Northampton	667	5	3,407	13.7	376	1.9	1,373	26.8	103	0.4	1,821	6.6	1,575	5.7
Pelham	6	0.9	68	5.3	0	0	87	26	0	0	56	4.4	42	3.3
Plainfield	0	0	44	6.7	4	0.8	35	18	0	0	42	6.4	33	5
South Hadley	248	3.1	1,462	9.6	146	1.2	1,107	32.3	15	0.1	1,187	6.8	1,061	6.1
Southampton	17	0.5	152	2.5	11	0.2	169	14.1	86	1.4	389	6.3	203	3.3
Ware	100	2.2	1,298	13.3	196	2.7	550	26.9	17	0.2	862	8.9	696	7.1
Westhampton	24	2.2	64	3.4	3	0.2	26	7.7	0	0	129	7	57	3.1
Williamsburg	12	0.8	234	9.1	17	0.8	149	24.6	0	0	205	8	147	5.7
Worthington	4	0.5	78	5.9	12	1.2	88	27.2	0	0	89	6.7	59	4.4
<b>Hampshire Totals</b>	<b>2,162</b>		<b>16,800</b>		<b>1,494</b>		<b>7,245</b>		<b>391</b>		<b>9,634</b>		<b>7,412</b>	



**Figure 74. Selected Population Characteristics Contributing to Inequities in Emergencies *continued***

	Vision		<u>Self-Care</u>		Independent Living		Cognitive		Hearing		Ambulatory	
	Number of People	% of Population	Number of People	% of Population	Number of People	% of Population	Number of People	% of Population	Number of People	% of Population	Number of People	% of Pop
Amherst	374	0.9	577	1.5	1,149	3.2	1,327	3.4	530	1.3	941	2.4
Belchertown	154	1	134	0.9	355	3.1	618	4.4	282	1.9	573	4.1
Chesterfield	20	1.6	24	2	29	2.8	29	2.5	65	5.3	59	5
Cummington	22	2.6	13	1.6	47	6.8	29	3.6	69	8.2	52	6.4
Easthampton	290	1.8	425	2.8	563	4.2	705	4.6	632	4	1,024	6.7
Goshen	9	1	16	1.8	26	3.3	14	1.6	15	1.6	53	6
Granby	97	1.5	147	2.4	189	3.6	192	3.2	213	3.4	300	5
Hadley	103	2	102	2	192	4.4	155	3	101	1.9	257	5
Hatfield	53	1.6	60	1.9	104	3.8	163	5.1	163	5	174	5.4
Huntington	41	2	39	2	71	4.1	92	4.7	135	6.6	100	5.1
Middlefield	3	0.7	0	0	10	2.6	31	7.6	34	8.3	17	4.2
Northampton	438	1.6	627	2.3	1,374	5.9	1,368	5.1	957	3.5	1,452	5.4
Pelham	12	0.9	19	1.5	19	1.8	21	1.7	40	3.1	48	3.9
Plainfield	12	1.8	4	0.6	21	3.7	26	4.1	39	5.9	35	5.5
South Hadley	300	1.7	549	3.3	910	6	733	4.4	497	2.8	1,239	7.4

**Figure 75. Selected Population Characteristics Contributing to Inequities in Emergencies *continued***

Amherst	374	0.9	577	1.5	1,149	3.2	1,327	3.4	530	1.3	941	2.4
Belchertown	154	1	134	0.9	355	3.1	618	4.4	282	1.9	573	4.1
Chesterfield	20	1.6	24	2	29	2.8	29	2.5	65	5.3	59	5
Cummington	22	2.6	13	1.6	47	6.8	29	3.6	69	8.2	52	6.4
Easthampton	290	1.8	425	2.8	563	4.2	705	4.6	632	4	1,024	6.7
Goshen	9	1	16	1.8	26	3.3	14	1.6	15	1.6	53	6
Granby	97	1.5	147	2.4	189	3.6	192	3.2	213	3.4	300	5
Hadley	103	2	102	2	192	4.4	155	3	101	1.9	257	5
Hatfield	53	1.6	60	1.9	104	3.8	163	5.1	163	5	174	5.4
Huntington	41	2	39	2	71	4.1	92	4.7	135	6.6	100	5.1
Middlefield	3	0.7	0	0	10	2.6	31	7.6	34	8.3	17	4.2
Northampton	438	1.6	627	2.3	1,374	5.9	1,368	5.1	957	3.5	1,452	5.4
Pelham	12	0.9	19	1.5	19	1.8	21	1.7	40	3.1	48	3.9
Plainfield	12	1.8	4	0.6	21	3.7	26	4.1	39	5.9	35	5.5
South Hadley	300	1.7	549	3.3	910	6	733	4.4	497	2.8	1,239	7.4
Southampton	92	1.5	93	1.6	167	3.3	219	3.7	193	3.1	184	3.1
Ware	175	1.8	254	2.7	627	8.1	503	5.4	353	3.6	674	7.2
Westhampton	14	0.8	12	0.7	39	2.5	58	3.3	82	4.4	59	3.3
Williamsburg	58	2.3	68	2.7	149	6.9	122	4.9	122	4.7	146	5.8
Worthington	25	1.9	24	1.9	46	4.1	39	3	55	4.1	66	5.1
<b>Hampshire Totals</b>	<b>3,382</b>		<b>3,187</b>		<b>6,087</b>		<b>6,444</b>		<b>4,577</b>		<b>7,453</b>	

**Figure 76. Hampshire County Long-Term Care Facilities**

<b>Long-Term Care Facility</b>	<b>Town</b>	<b># of Beds</b>
Care One at Northampton	Northampton	125
Center For Extended Care at Amherst	Amherst	134
Elaine Center at Hadley	Hadley	154
Highview of Northampton	Northampton	120
Linda Manor Extended Care	Northampton	123
Wingate at South Hadley	South Hadley	132
Lathrop Home	Northampton	39
River Valley Rest Home	Northampton	25
Rockridge at Laurel Park	Northampton	61

Total: 913

County population: 162,308

Beds per 1,000 people: 177.7744

## Recommendations

### **Equipment:**

To assist with rescues, fire chiefs have recommended the need for diving equipment. Police officers should be given upgraded, coordinated radios to assist with communication in the event of civil unrest or a regionwide disaster.

### **Plans and Support:**

There is a need for cybersecurity staffing, in particular for the hill towns of Hampshire County where they are less prepared for a cybersecurity attack or ransomware. In addition, there is also a need for more regional cooperation to mitigate the potential natural hazards, efforts which in the best-case scenario would be backed by the Commonwealth. Lists of the different EMS services in each municipality would be helpful with regional coordination so they could all be in one location to access and not be as siloed off.

Efforts should be made to engage older adults and get them to shelters whenever possible. Given that many older people rely on landlines and in-person communication, efforts should be put towards those venues of communication for that population. Continued partnerships with the Councils on Aging may help facilitate this given their prior knowledge of older adults in their communities and implementation of the buddy system for emergencies. In addition, there is a need for a unified communications plan to distribute emergency updates throughout the county.

Partnerships should be made with utility companies to improve their relationships with Hampshire County area and assist with electrical concerns due to generators and risk of blackouts.

**Training:**

Training is needed for EMS staff to ensure that they are able to communicate properly and understand the needs of those most vulnerable as detailed in this report. While this may require policy-level interventions, there is also a need for a better overall health infrastructure to navigate patients towards equitable care. At present, though there is a case management team to assist with Cooley Dickinson, it is inadequate for the system-level concerns. The same may be true with affordable housing navigation in light of ongoing efforts to make them less vulnerable in emergencies in Northampton.

Efforts should be made to increase assistance toward getting those who lack transportation, including the elderly, especially in Eastern Hampshire.

## County Resources (Completion in Phase II)

Source: WMHCC from the Office of Preparedness and Emergency Management 2022