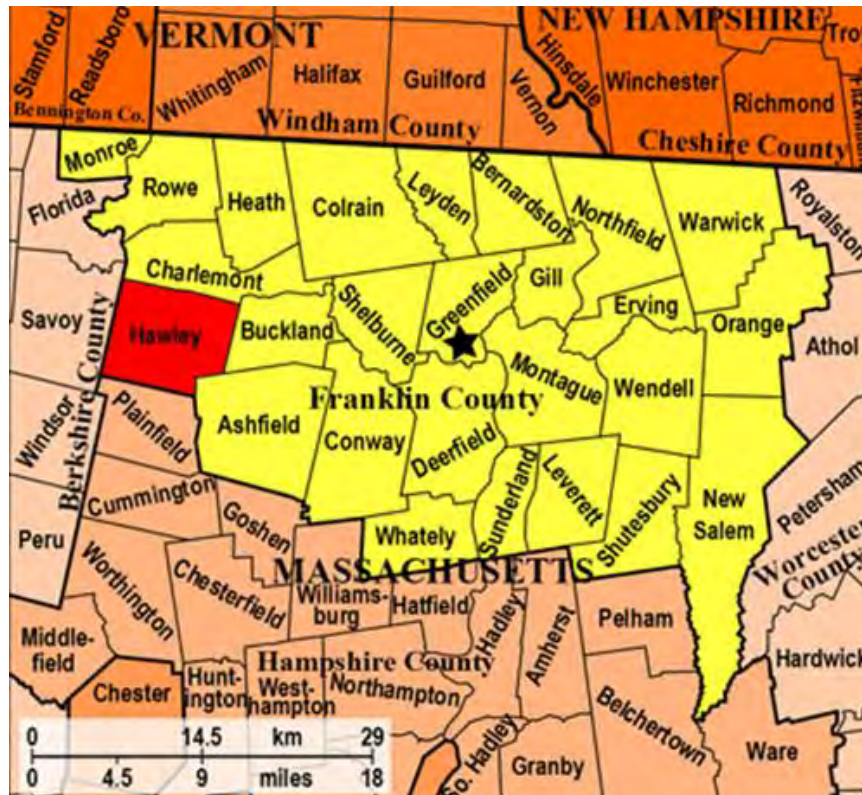


## WRHSAC Equity Data Project – Franklin County, Massachusetts

Berkshire Regional Planning Commission, Marie Brady



### Overview

This is a report on hazards and equity issues in relation to emergency preparedness in Franklin County, Massachusetts. The purpose of the report is to highlight known or potential disparities that could disproportionately impact the county’s vulnerable or at-risk populations in the event of an emergency. According to the 2021 U.S. Census Bureau report, Franklin County is home to 71,015 people and has approximately 700 square miles of land area, averaging less than 102 people per square mile compared to Massachusetts’ average of approximately 900 people per square mile. Franklin County is a mountainous and forested region located in western Massachusetts in the upper Connecticut River valley area, with Vermont and New Hampshire directly north. The county is bisected by the Connecticut River that runs north to south, with the Berkshire hills on the western side and the Pelham hills and Quabbin Reservoir to the east. The Quabbin Reservoir provides clean drinking water to millions of people in the state.

Franklin County is the most rural county in the Commonwealth which has no county governments. This region is comprised of 26 towns, with populations ranging from as small as Monroe (118 people) to as large as Greenfield (17,768 people) and is Massachusetts’ only

entirely rural county. The county is comprised of the following municipalities: Ashfield, Bernardston, Buckland, Charlemont, Colrain, Conway, Deerfield, Erving, Gill, Greenfield, Hawley, Heath, Leverett, Leyden, Monroe, Montague, New Salem, Northfield, Orange, Rowe, Shelburne, Shutesbury, Sunderland, Warwick, Wendell, and Whately.

## Franklin County Specific Equity Concerns

- **Internet access:** Many residents lack adequate Internet access which could leave them without crucial information in the event of a sudden emergency or an ongoing issue like the COVID-19 pandemic. For example, COVID-19 vaccination clinics often involve an Internet sign-up. With many people in the area unable to use this feature, their vaccine doses often ended up in other regions. One of the county's towns, Wendell, has over 14% of residents without a computer and 15.3% of the households that *do* have a computer don't have an Internet subscription.
- **Language barriers:** Though over 94% of the adult population in Franklin County speak English at home, nearly 6% speak other languages. Approximately 1,160 individuals above 18 years of age speak Spanish at home, 1,203 speak another Indo-European language (which could include French, Italian, Romanian, and others), 851 speak an Asian/Islander language, and almost 100 speak other languages not listed. Anyone who is not fluent in English may have trouble accessing emergency instructions or evacuation procedures. Looking at the sheer numbers, it appears a significant number of people would be impacted in an emergency where they were expected to respond to English evacuation procedures or instructions. Language barriers can also negatively impact the healthcare experience for those who do not speak English as their first language.
- **Transportation:** The county does not have an extensive public transportation system and almost 8% of the county's population are without a vehicle. This could be an issue for accessing things like COVID-19 vaccination or being able to evacuate in an emergency. Residents of the county, including shelter residents, express that they are often unable to make it to medical appointments for various things from physical health and mental health to substance use disorders.
- **Elderly population:** More than 24% of the population is over the age of 65, and 4,582 of elders live by themselves. It is unclear how many of these might not have assistance in an emergency or be unable to properly access information on a cellular device. Due to a lack of housing options, some older adults live in a house too large for their needs and may not be able to properly maintain it, which can ultimately cause health and safety issues. Additionally, in an emergency preparedness interview, it was mentioned that a lot of the county's older adult population needs to travel to Springfield for medical appointments. Because of the difficulty getting to these appointments, they often end up being skipped.
- **Mental health and substance use disorders:** In an emergency, if someone doesn't have access to their medication it could cause issues for their physical and mental health. The county specifically has raised concerns about youth mental health and an increased need for services, and the COVID-19 pandemic has exacerbated these concerns. Overall, from 2019 to 2021, Franklin County had an increase in residents with a mental health diagnosis, including seniors over 65.
- **Single-parent households:** A single parent needing to evacuate with one or more children may need additional assistance compared to a family with two adults present. In

Franklin County, 38.08% of households with children are headed by a single parent. Programs that prepare residents for emergencies also tend to be geared towards families that have the adequate resources and means, which may not be the case in a household with only one income.

- **Food insecurity:** An emergency can cause a family to become food insecure (lack of access to enough food for each person in a household) or exacerbate their food insecurity. According to interviews, a family close to being food insecure that experiences a power outage and food spoiling is suddenly over the “tipping” point that causes them to go from having just enough food to not having any food for their next meal.
- **Congregate care facilities such as boarding schools, group homes, and nursing homes:** These are all facilities with a lot of people residing in close quarters. Some facilities may be better prepared than others to plan for and respond to an emergency, and priorities in an emergency may differ—for example, nursing homes, which may have multiple electricity-dependent residents, may take extra care to inspect their generators or test them monthly. Boarding schools, similar to other congregate facilities, generally have staff trained to deal with an emergency, but they consist of students who are likely far away from their family/support system, and staff may have their own families to take care of in an emergency as well.
- **Electricity-dependent:** 642 Medicare beneficiaries within the county depend on electricity for medical devices. In a county-wide power outage, that is a large number of people who would be at risk if they use ventilators, mobility devices, or CPAP machines.

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

- **Flooding** is one of the biggest, most well-known risks relevant to the county. Many of the towns are situated on a body of water and if there is flooding or a dam break, it could lead to flooded buildings and impassable roads, impacting potential evacuation routes or cutting off access to important utilities and services. The county has experienced extensive flooding events in the past, including in recent years, that have caused road closures and fallen trees. Heavy downpours and rapid freeze-thaw cycles can damage roads, and floodwater can spread disease. Standing water in warm weather supports the rapid growth of mosquitos which are not only pests, but can also potentially carry diseases.
- **Wildfires, extreme heat, and drought** pose a concern as intense weather events become more common due to climate change. The county experienced wildfires very recently, including in the summer of 2020, when two of the towns experienced over 60 acres of land being burned. In Franklin County, there are nearly 14 days of extreme heat per year, compared to the national median of 10.3 days per year; this can increase respiratory issues for those with asthma or other illnesses, as well as increase mosquito and tickborne diseases. Additionally, higher demand for cooling energy during hot summers can overload the electric grid and cause outages.
- **Ice storms and other winter weather** pose a concern, as heavy ice can cause branches to fall on power lines. Additionally, Greenfield’s electrical infrastructure is aboveground, and repairs would be expensive.
- **Wind** can cause falling power lines and flying debris. Between September 2021 and the end of September 2022, 24 out of 28 reported storm events were wind related.

- **Toxic materials and hazardous waste sites** can cause detrimental health effects among those who reside nearby. They can release harmful pollutants and contaminants into the air and water. Downpours/floods/winds related to weather disasters could destabilize waste sites and send additional contaminants into the community.
- **Infectious disease**, such as COVID-19, can exacerbate existing inequalities or cause strain upon the healthcare system. Additionally, those in rural Franklin County without a personal vehicle or reliable transportation may not be able to receive vaccination against COVID-19 or seasonal Influenza.

Sources:

<https://www.census.gov/quickfacts/fact/table/franklincountymassachusetts/PST045221#PST045221>

<https://censusreporter.org/profiles/05000US25011-franklin-county-ma/>

<https://www.census.gov/quickfacts/MA>

<https://www.britannica.com/place/Franklin-county-Massachusetts>

[https://www.mass.gov/locations/quabbin-](https://www.mass.gov/locations/quabbin-reservoir#:~:text=The%20412%20billion%20gallon%20reservoir,3%20million%20people's%20drinking%20water.)

[reservoir#:~:text=The%20412%20billion%20gallon%20reservoir,3%20million%20people's%20drinking%20water.](https://www.mass.gov/locations/quabbin-reservoir#:~:text=The%20412%20billion%20gallon%20reservoir,3%20million%20people's%20drinking%20water.)

[https://frcog.org/wp-content/uploads/2014/04/FC-Fast-Facts-2013\\_04.pdf](https://frcog.org/wp-content/uploads/2014/04/FC-Fast-Facts-2013_04.pdf)

<https://frcog.org/wp-content/uploads/2022/12/2022-12-21-Deerfield-River-Outdoor-Rec-Stakeholders-Meeting.pdf>

<https://frcog.org/about/towns/>

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## Quotes from Interviews with County Responders, November 2022

### **Emergency Preparedness Program Planner, on healthcare access:**

*“There are people who have the education to understand the healthcare system and find services for themselves and their family, and there are people that don’t have the education or skill to find services for themselves and their family – these people are often overlooked or underserved.*

*It creates a burden for the healthcare system – sometimes they will wait until something is really significant, but they are not set up with a primary care doctor so they will often call an ambulance to go to the hospital – their condition might be pretty bad at that time which could have been avoided if they had access to primary care. We see such a rise in that; it bogs down the already overwhelmed EMS and ambulance system. It leads to increased wait time in hospitals, which is not always the best place for chronic conditions. Plus, hospitals will recommend follow-up with primary care, but if they don’t have transportation or access to primary care, they will end up in the hospital again soon with similar issues.”*

### **Public Health Coalition Member on vulnerable populations and disparities in the county:**

*“...How do we reach people living in their home with an oxygen tank when their power goes out? Most places in Franklin County I don’t have a list or an easy way to do that.*

*Migrant farmers who are disconnected because of language, transient lifestyle, so that’s a concern.*

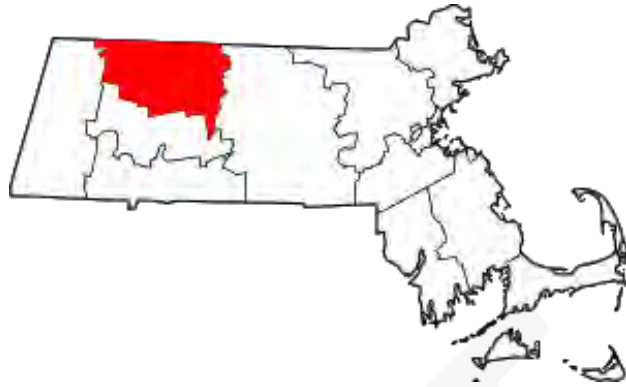
*People living in manufactured housing. People who are not literate in Spanish but come from Spanish speaking countries; we have a big population in Montague and Deerfield and Whately of folks who are indigenous of south American countries who don’t read Spanish if we were giving it to them in Spanish. People who don’t have cars and live very remote, people who are unhoused and couch surfing, we had someone who froze to death in the winter. We have an unusually high pediatric disability rate, whether it’s autism or physical disability but families with disabled children would be another one.*

*Often none of us think about the homeless or underhoused. They’re not just in the cities, they’re in other towns too and we can talk to the fire and police about where to find them.”*

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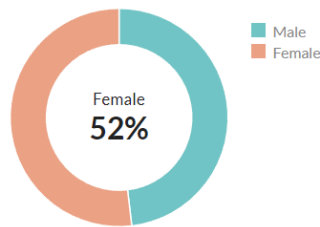
## Franklin County Overview



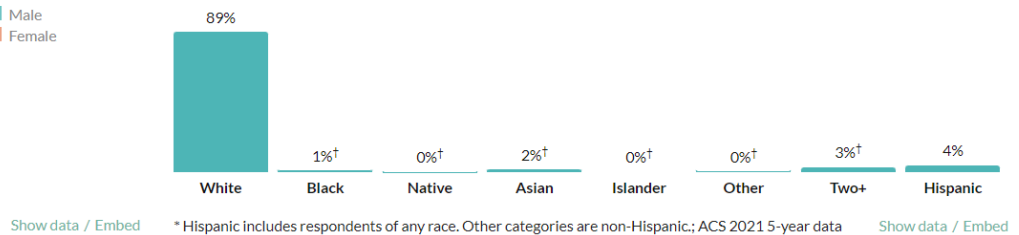
### General information

According to the [ACS 2021 1-year estimate](#), Franklin County is home to 71,015 people. It consists of approximately 700 square miles, which averages to about 102 people per square mile. The median age is 47.1, which is about 20% higher than both Massachusetts (39.9) and the United States (38.8). Almost 90% of the population is White and 52% are female. Over 3,500 people are Hispanic or Latino.

#### Sex



#### Race & Ethnicity



### Households

According to the [ACS 2021 1-year estimate](#), the median household income is just under \$70,000, which is about \$20,000 less than the state median, and about the same as the United States median. Approximately 35% of the population makes less than \$50,000 per year. 10% live below the poverty line, which is very similar to the Massachusetts rate and a little less than the U.S. rate. An estimated 21% of children under 18 live in poverty and 7% of seniors (aged 65 and older) live in poverty.

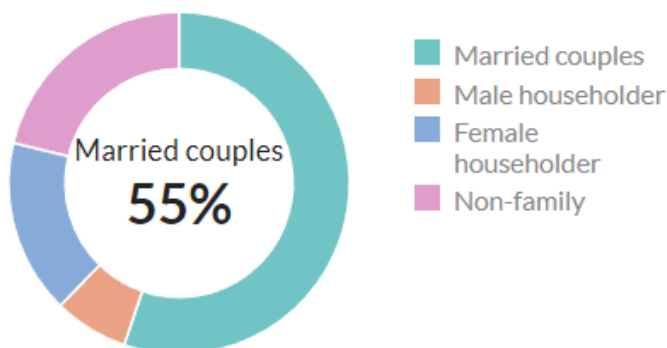
# \$69,771

## Median household income

about 80 percent of the amount in  
Massachusetts: \$89,645

about the same as the amount in  
United States: \$69,717

## Population by household type



structures are single-unit and 27% are multi-unit. The median value of owner-occupied housing units is \$286,000.

### *Other*

According to the [U.S. Census Bureau](#), about 95% of the population has graduated from at least high school; this rate is slightly higher than both the Massachusetts and U.S. rates. 41.9% have at least a bachelor's degree, which is less than the state rate but more than the U.S. average. Approximately 19% have a post-graduate degree. 94% of children ages 5-17 speak only English at home, and 94% of adults 18+ do as well. Other languages spoken at home include Spanish, Indo-European languages, and Asian Islander. Almost 5% of the population is foreign-born, with 40% of the foreign-born population being from Europe and 29% from Asia. Nearly 7% of the population are veterans, which is higher than the Massachusetts rate of 4.2% and the U.S. rate of 6.4%. Most of the veterans fought in Vietnam. The employment rate is 58.3%, and 2% of the population are without healthcare coverage.

Sources:

<https://censusreporter.org/profiles/05000US25011-franklin-county-ma/>

[https://data.census.gov/profile/Franklin\\_County,\\_Massachusetts?g=0500000US25011](https://data.census.gov/profile/Franklin_County,_Massachusetts?g=0500000US25011)

The county consists of 30,374 households, with 2.3 persons per household, per the [ACS 2021 1-year estimate](#). Married couples make up 55% of total households, followed by non-family making up 21%. 17% have a single female householder and 7% have a single male householder. There are about 34,439 housing units, with 88% being occupied, and 71% of occupied units are owned rather than rented. Almost 70% of housing

## Research Data and Sources

**Figure 1. Selected Population Characteristics Contributing to Inequities in Emergencies**

Source: [Western MA HMCC Franklin County Vulnerable Population Data \(region1hmcc.org\)](https://region1hmcc.org/)

|                | No vehicle       |                 | Below poverty level |                 | <9th grade education |                 | Over 65 and lives 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 |
| Ashfield       | 28               | 3.4             | 130                 | 9               | 5                    | 0.4             | 73                      | 20.2            | 0                 | 0               | 126              | 8.7             | 58               | 4               |
| Barnardston    | 26               | 2.7             | 166                 | 8.1             | 10                   | 0.6             | 145                     | 31.9            | 0                 | 0               | 285              | 13.8            | 131              | 6.3             |
| Buckland       | 22               | 2.3             | 223                 | 11.5            | 55                   | 3.7             | 116                     | 27.4            | 7                 | 0.4             | 204              | 10.5            | 77               | 3.9             |
| Charlemont     | 16               | 3.5             | 149                 | 13.8            | 11                   | 1.4             | 66                      | 25.5            | 6                 | 0.6             | 113              | 10.4            | 125              | 11.5            |
| Colrain        | 9                | 1               | 202                 | 11.4            | 14                   | 1.1             | 73                      | 16.4            | 0                 | 0               | 104              | 5.9             | 66               | 3.7             |
| Conway         | 0                | 0               | 36                  | 1.8             | 3                    | 0.2             | 90                      | 18.7            | 0                 | 0               | 132              | 6.7             | 70               | 3.6             |
| Deerfield      | 44               | 1.8             | 364                 | 7.5             | 30                   | 0.8             | 180                     | 17.3            | 13                | 0.3             | 309              | 6.2             | 317              | 6.3             |
| Erving         | 18               | 2.2             | 179                 | 10.5            | 32                   | 2.6             | 88                      | 26.7            | 0                 | 0               | 164              | 9.4             | 87               | 5               |
| Gill           | 4                | 0.5             | 137                 | 8.6             | 12                   | 0.9             | 85                      | 27.2            | 12                | 0.8             | 119              | 7.5             | 60               | 3.8             |
| Greenfield     | 301              | 3.5             | 1,918               | 11.4            | 334                  | 2.5             | 1,611                   | 43.7            | 78                | 0.5             | 1,661            | 9.9             | 1,250            | 7.4             |
| Hawley         | 2                | 1.3             | 54                  | 14.6            | 3                    | 1.1             | 14                      | 14.7            | 0                 | 0               | 39               | 10.5            | 23               | 6.2             |
| Heath          | 0                | 0               | 114                 | 15.9            | 14                   | 2.8             | 36                      | 17.4            | 0                 | 0               | 72               | 9.7             | 46               | 6.2             |
| Leverett       | 4                | 0.4             | 131                 | 6.5             | 9                    | 0.6             | 58                      | 11.2            | 0                 | 0               | 130              | 6.5             | 59               | 2.9             |
| Leyden         | 0                | 0               | 34                  | 4.8             | 5                    | 0.9             | 32                      | 21.5            | 0                 | 0               | 60               | 8.5             | 36               | 5.1             |
| Monroe         | 0                | 0               | 13                  | 14.9            | 0                    | 0               | 15                      | 83.3            | 0                 | 0               | 19               | 21.8            | 8                | 9.2             |
| Montague       | 308              | 6.9             | 910                 | 11.2            | 112                  | 1.7             | 479                     | 28.2            | 22                | 0.3             | 917              | 11.2            | 459              | 5.6             |
| New Salem      | 11               | 2.3             | 53                  | 5.3             | 15                   | 1.9             | 40                      | 16.7            | 0                 | 0               | 98               | 9.7             | 40               | 4               |
| Northfield     | 10               | 0.6             | 130                 | 4.4             | 11                   | 0.5             | 134                     | 22.7            | 0                 | 0               | 309              | 10.5            | 342              | 11.6            |
| Orange         | 86               | 2.5             | 761                 | 10.1            | 212                  | 3.8             | 428                     | 30.7            | 0                 | 0               | 890              | 11.6            | 672              | 8.8             |
| Rowe           | 0                | 0               | 11                  | 2.5             | 3                    | 0.9             | 32                      | 26.7            | 0                 | 0               | 22               | 5               | 29               | 6.6             |
| Shelburne      | 0                | 0               | 124                 | 7.6             | 36                   | 2.7             | 165                     | 32.5            | 0                 | 0               | 130              | 8               | 126              | 7.7             |
| Shutesbury     | 8                | 0.9             | 151                 | 8.6             | 0                    | 0               | 90                      | 27.4            | 0                 | 0               | 132              | 7.5             | 71               | 4               |
| Sunderland     | 87               | 3.8             | 471                 | 13.1            | 51                   | 1.9             | 156                     | 27.3            | 0                 | 0               | 156              | 4.3             | 115              | 3.2             |
| Warwick        | 0                | 0               | 55                  | 6.9             | 20                   | 3.2             | 41                      | 25.8            | 12                | 1.5             | 54               | 6.8             | 70               | 8.8             |
| Wendell        | 6                | 1.6             | 100                 | 11.7            | 6                    | 0.9             | 43                      | 21.9            | 0                 | 0               | 74               | 8.6             | 36               | 4.2             |
| Whately        | 0                | 0               | 114                 | 7.2             | 9                    | 0.8             | 68                      | 20.5            | 0                 | 0               | 116              | 7.3             | 84               | 5.3             |
|                | 990              |                 | 6,730               |                 | 1,012                |                 | 4,358                   |                 | 150               |                 | 6,435            |                 | 4,457            |                 |
| Franklin total | 990              |                 | 6,730               |                 | 1,012                |                 | 4,358                   |                 | 150               |                 | 6,435            |                 | 4,457            |                 |

**Figure 2. Selected Population Characteristics Contributing to Inequities in Emergencies *continued***

Source: [Western MA HMCC Franklin County Vulnerable Population Data \(region1hmcc.org\)](https://www.region1hmcc.org/)

|                | Vision difficulty |                 | Self care difficulty |                 | Independent living difficulty |                 | Cognitive difficulty |                 | Hearing difficulty |                 | Ambulatory difficulty |                 |
|----------------|-------------------|-----------------|----------------------|-----------------|-------------------------------|-----------------|----------------------|-----------------|--------------------|-----------------|-----------------------|-----------------|
|                | 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 |
| Ashfield       | 35                | 2.4             | 32                   | 2.4             | 34                            | 2.7             | 52                   | 3.7             | 85                 | 5.9             | 63                    | 4.4             |
| Bernardston    | 87                | 4.2             | 23                   | 1.2             | 75                            | 4.6             | 156                  | 7.9             | 140                | 6.8             | 147                   | 7.4             |
| Buckland       | 27                | 1.4             | 34                   | 1.8             | 72                            | 4.6             | 82                   | 4.4             | 95                 | 4.9             | 128                   | 6.9             |
| Charlemont     | 27                | 2.5             | 47                   | 4.4             |                               | 13.3            | 117                  | 11              | 67                 | 6.2             | 76                    | 7.2             |
| Colrain        | 10                | 0.6             | 10                   | 0.6             | 51                            | 3.4             | 52                   | 3.1             | 70                 | 4               | 74                    | 4.4             |
| Conway         | 21                | 1.1             | 22                   | 1.2             | 40                            | 2.6             | 73                   | 3.9             | 73                 | 3.7             | 95                    | 5               |
| Deerfield      | 49                | 1               | 201                  | 4.1             | 280                           | 6.9             | 291                  | 6               | 140                | 2.8             | 393                   | 8.1             |
| Erving         | 38                | 2.2             | 32                   | 1.9             | 45                            | 3.3             | 100                  | 6.1             | 82                 | 4.7             | 126                   | 7.7             |
| Gill           | 8                 | 0.5             | 15                   | 1               | 56                            | 4.1             | 68                   | 4.5             | 49                 | 3.1             | 82                    | 5.4             |
| Greenfield     | 344               | 2               | 533                  | 3.3             | 979                           | 7.1             | 1,013                | 6.4             | 883                | 5.3             | 1,375                 | 8.6             |
| Hawley         | 18                | 4.9             | 9                    | 2.6             | 17                            | 5.4             | 12                   | 3.4             | 27                 | 7.3             | 24                    | 6.8             |
| Heath          | 9                 | 1.2             | 22                   | 3.2             | 50                            | 9               | 55                   | 8               | 31                 | 4.2             | 43                    | 6.3             |
| Leverett       | 12                | 0.6             | 19                   | 1               | 40                            | 2.5             | 62                   | 3.2             | 79                 | 3.9             | 63                    | 3.3             |
| Leyden         | 18                | 2.5             | 16                   | 2.4             | 22                            | 3.7             | 42                   | 6.2             | 32                 | 4.5             | 34                    | 5               |
| Monroe         | 0                 | 0               | 8                    | 9.4             | 3                             | 4.3             | 5                    | 5.9             | 8                  | 9.2             | 14                    | 16.5            |
| Montague       | 110               | 1.3             | 207                  | 2.6             | 435                           | 6.3             | 754                  | 9.6             | 330                | 4               | 451                   | 5.7             |
| New Salem      | 8                 | 0.8             | 30                   | 3.1             | 54                            | 6.4             | 47                   | 4.9             | 54                 | 5.4             | 49                    | 5.1             |
| Northfield     | 84                | 2.8             | 171                  | 6               | 287                           | 12              | 216                  | 7.6             | 173                | 5.9             | 342                   | 12.1            |
| Orange         | 146               | 1.9             | 322                  | 4.5             | 513                           | 8.3             | 776                  | 10.7            | 372                | 4.9             | 752                   | 10.4            |
| Rowe           | 12                | 2.7             | 3                    | 0.7             | 23                            | 6.2             | 21                   | 4.9             | 15                 | 3.4             | 20                    | 4.7             |
| Shelburne      | 23                | 1.4             | 36                   | 2.3             | 101                           | 7               | 106                  | 6.8             | 83                 | 5.1             | 114                   | 7.3             |
| Shutesbury     | 22                | 1.3             | 35                   | 2.1             | 75                            | 5.2             | 91                   | 5.5             | 58                 | 3.3             | 69                    | 4.1             |
| Sunderland     | 23                | 0.6             | 71                   | 2               | 104                           | 3.3             | 136                  | 3.9             | 68                 | 1.9             | 105                   | 3               |
| Warwick        | 45                | 5.7             | 37                   | 4.8             | 46                            | 6.9             | 64                   | 8.2             | 54                 | 6.8             | 59                    | 7.6             |
| Wendell        | 19                | 2.2             | 19                   | 2.3             | 29                            | 4               | 52                   | 6.3             | 30                 | 3.5             | 24                    | 2.9             |
| Whately        | 46                | 2.9             | 21                   | 1.4             | 57                            | 4.3             | 47                   | 3.1             | 78                 | 4.9             | 85                    | 5.6             |
|                | 1,241             |                 | 1,975                |                 | 3,488                         |                 | 4,490                |                 | 3,176              |                 | 4,807                 |                 |
| Franklin total | 1,241             |                 | 1,975                |                 | 3,488                         |                 | 4,490                |                 | 3,176              |                 | 4,807                 |                 |



## Hazards

### Flooding

In terms of hazards relevant to the county, one of the biggest and most well-known risks is flooding. Nearly 7,000 properties within the county borders are estimated to have greater than a 26% chance of being greatly impacted by flooding over the next 30 years. While the likelihood of a storm big enough to cause severe flooding is low, it is important to realize that it is possible, and that Franklin County has experienced intense flooding events in the past.

#### Figure 3. Franklin County Flood Risk

Source: [https://riskfactor.com/county/franklin-county-massachusetts/25011\\_fsid/flood](https://riskfactor.com/county/franklin-county-massachusetts/25011_fsid/flood)

##### Residential **Major Risk**

**3,331** out of **20,382** homes

##### Road **Major Risk**

**809** out of **2,581** miles of roads

##### Commercial **Severe Risk**

**426** out of **1,482** commercial properties

##### Critical Infrastructure **Major Risk**

**42** out of **98** infrastructure facilities

##### Social Facilities **Moderate Risk**

**33** out of **132** social facilities

#### Figure 4. Properties in Franklin County That Would be Impacted in a Flood, Today vs. in 30 Years

Source: [https://riskfactor.com/county/franklin-county-massachusetts/25011\\_fsid/flood](https://riskfactor.com/county/franklin-county-massachusetts/25011_fsid/flood)

Properties at risk

6,572

Today

6,853

In 30 years

In the early 1800s, the town of Conway had a lot of industrial potential—on par even with Springfield, MA in Hampden County—until October 1896 when a flood broke a dam and the rushing water destroyed homes, bridges, the textile mill, and other mills. The town’s industry never recovered. More recently, Franklin County floods of 2016, 2017, and 2021 caused road

closures, fallen trees, and impassability. Heavy downpours have the potential to damage roads, as do rapid freeze-thaw cycles. Flooding is a significant issue because many of the county's towns are located on a river, and there are quite a few dams in the area. According to [this map](#), Franklin County has 11 dams that pose a high hazard. If any of them were to break there would be significant loss of infrastructure, property damage, and potentially loss of life. In the event of a flood, Franklin County residents may lose access to utilities, emergency services, transportation, and the overall economy of the area may be at risk. Additionally, flooding can lead to increased mold, worsened indoor air quality, and vector-borne diseases (such as mosquito-borne diseases) caused by stagnant water. It can also decrease water quality as the excess precipitation washes contaminants into surface waters, and the contaminated water can contaminate crops.

Estimates show that in the event of a flood, approximately 809 out of the 2,581 miles of county roads run the risk of becoming impassable. Impassable roads greatly affect residents' ability to seek safety and to obtain needed resources. Estimates also show that 42 out of 98 critical infrastructure facilities run the risk of being flooded; this includes hospitals, police and fire stations, airports, wastewater treatment facilities, and more.

Greenfield residents have expressed concerns about culverts that are too small to accommodate heavy stormwater flows, gravel and dirt roads with inadequate stormwater drainage, and mudslides following heavy rain. Seniors who are on fixed income may not be able to repair damage to their homes and property caused by a flood. Residents have experienced the impact of the Green River flooding, which caused damage to properties and farms. Tropical Storm Irene in 2011 caused widespread damage that took years to fix. Greenfield's wastewater treatment plant was made flood resistant in the year 2000 to 140 feet, but Irene's flood waters reached an elevation of 142.5 feet. There are also three or four older mobile home parks with at least one in a floodplain.

Sources:

[https://riskfactor.com/county/franklin-county-massachusetts/25011\\_fsid/flood](https://riskfactor.com/county/franklin-county-massachusetts/25011_fsid/flood)

<https://www.recorder.com/Conway-14337121>

<https://www.wvlp.com/news/flooding-along-green-river-in-greenfield/>

<https://www.wvlp.com/news/local-news/franklin-county/several-areas-of-franklin-county-flooded-due-to-heavy-storms/>

<https://www.recorder.com/Flooding-causes-major-issues-throughout-Franklin-County-over-weekend-41513555>

<https://frcog.org/wp-content/uploads/2018/12/Greenfield-High-Risk-Stream-Crossing-Report-Oct-2018.pdf>

<https://resilientma.mass.gov/sectors/transportation>

<https://maps.massgis.digital.mass.gov/MassMapper/MassMapper->

[Dams.html?bl=MassGIS%20Basemap\\_100&l=massgis:GISDATA.DAMS\\_PT\\_GISDATA.DAMS\\_PT::Labels\\_ON\\_100.m](https://maps.massgis.digital.mass.gov/MassMapper/MassMapper-Dams.html?bl=MassGIS%20Basemap_100&l=massgis:GISDATA.DAMS_PT_GISDATA.DAMS_PT::Labels_ON_100.m)

[assgis:GISDATA.DAMS\\_PT\\_GISDATA.DAMS\\_PT::Default\\_ON\\_100,massgis:GISDATA.TOWNSSURVEY\\_POLYM](https://maps.massgis.digital.mass.gov/MassMapper/MassMapper-Dams.html?bl=MassGIS%20Basemap_100&l=massgis:GISDATA.DAMS_PT_GISDATA.DAMS_PT::Default_ON_100,massgis:GISDATA.TOWNSSURVEY_POLYM)

[GISDATA.TOWNSSURVEY\\_POLYM::Default\\_ON\\_100&b=-73.36345776915552,41.573725352727436,-](https://maps.massgis.digital.mass.gov/MassMapper/MassMapper-Dams.html?bl=MassGIS%20Basemap_100&l=massgis:GISDATA.DAMS_PT_GISDATA.DAMS_PT::Default_ON_100&b=-73.36345776915552,41.573725352727436,-)

[70.3971491754055,42.99197272325257](https://maps.massgis.digital.mass.gov/MassMapper/MassMapper-Dams.html?bl=MassGIS%20Basemap_100&l=massgis:GISDATA.DAMS_PT_GISDATA.DAMS_PT::Default_ON_100&b=-73.36345776915552,41.573725352727436,-70.3971491754055,42.99197272325257)

## **Wildfire, Extreme Heat, & Drought**

Wildfire and extreme heat are examples of other events that could cause residents to lose access to utilities and other necessary resources. While Franklin County's risk of wildfire and extreme heat are minor and moderate, respectively, that does not mean it's impossible that they could face such an event – especially with the changing climate and its potential catastrophic effects. Over 8,000 properties are at risk of being affected by wildfire in the next 30 years, though the level of risk these properties face is low. Vegetation and drought are both factors that play a role

in the development and spread of wildfires, and Franklin County (which is 80% forested) has been in a significant drought recently, increasing chances of wildfire. Greenfield residents expressed concern about the drought that occurred throughout 2020, causing wildfires in Leverett and Orange in the summer of 2020. More than 60 acres of land were burned in each town, showing that even a mild drought can have significant consequences. Additionally, smaller snowpacks and drier summers can deplete drinking water as well as water for agriculture and industries.

**Figure 5. Image from Leverett Wildfire, June 2020**

Source: <https://www.recorder.com/Forest-fire-still-active-34978128>



Approximately 30,000 properties have moderate risk from heat, 8,600 have minor risk, 3,100 have minimal risk, and there are little to no properties that are at major, severe, or extreme risk. Even so, “feels like” temperatures (also known as “heat index”) have been increasing, and higher temperatures can lower people’s ability to regulate their body temperature and stay safe on hot days, especially for the young and old. Average, minimum, and maximum temperatures in Franklin County are projected to significantly increase within the next 100 years. Franklin County has approximately 13.7 extreme heat days per year, compared to the national median of 10.3 days per year. Extreme heat can trap pollutants close to the ground, causing complications for those with asthma or other respiratory illnesses. Greenfield’s downtown area is mostly

impermeable, making the city center vulnerable to “heat islands” (when buildings, parking lots, etc. cause land temperature to reach higher than air temperature).

Another issue brought on by increased hot and wet days is tickborne diseases. Although “extreme” dry heat will usually kill ticks, they will thrive in a damp 70- to 90-degree environment. Franklin County has seen an uptick in tickborne diseases and the county’s rate of emergency visits for such diseases is among the highest in Massachusetts. Between 2000 and 2018, there were 607 reported confirmed cases of Lyme in Franklin County—however, there were likely many other cases that were not reported. It is estimated that the actual number is 10 times the reported number.

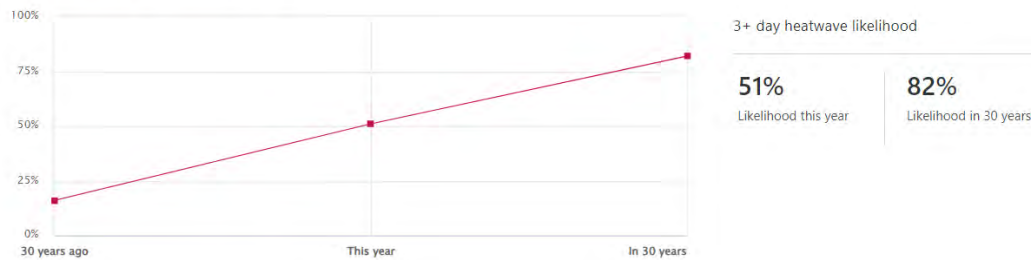
Rising temperatures may also increase the demand for cooling energy in the summers, which can overload the electric grid and cause power outages that put elderly and ill people at risk. These outages can also disrupt water and wastewater treatment.

### Figure 6. Likelihood of Heat Waves in Franklin County

Source: [https://riskfactor.com/county/franklin-county/25011\\_fsid/heat](https://riskfactor.com/county/franklin-county/25011_fsid/heat)

A heat wave consisting of 3 or more consecutive days where the “feels like” temperature meets or exceeds the local definition of a “hot day” is an increasing possibility as temperatures rise. The “hot day” temperature for Franklin County is 94°F. 30 years ago, the likelihood of a 3 day or longer heat wave in Franklin County was 16%.

Likelihood of a 3+ day heat wave

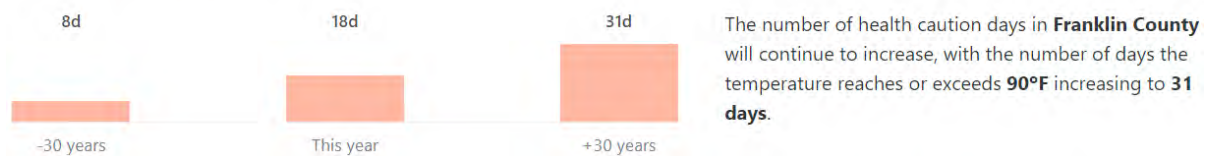


### Figure 7. Health Caution Days (90+ Degrees) in Franklin County

Source: [https://riskfactor.com/county/franklin-county/25011\\_fsid/heat](https://riskfactor.com/county/franklin-county/25011_fsid/heat)

Spending time in heat where the “feels like” temperature exceeds 90°F can be physically hazardous, especially for high-risk individuals. 30 years ago, the number of days above 90°F in Franklin County would have been around 8 days. This year approximately 18 days are expected to reach or exceed 90°F.

Days above 90°F per year

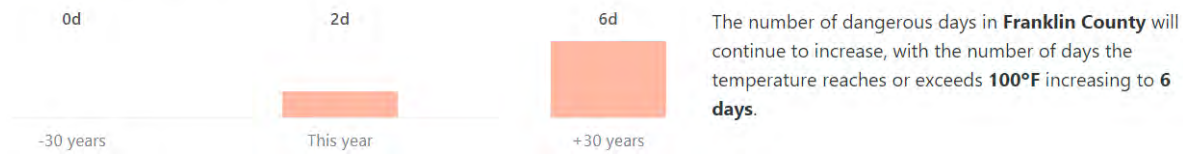


## Figure 8. Dangerous Heat Days (100+ Degrees) in Franklin County

Source: [https://riskfactor.com/county/franklin-county/25011\\_fsid/heat](https://riskfactor.com/county/franklin-county/25011_fsid/heat)

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, Franklin County didn't experience any days above 100°F. This year approximately 2 days are expected to reach or exceed 100°F.

Days above 100°F per year



The number of dangerous days in Franklin County will continue to increase, with the number of days the temperature reaches or exceeds 100°F increasing to 6 days.

## Figure 9. Effect of Heat on Franklin County's Energy Consumption

Source: [https://riskfactor.com/county/franklin-county/25011\\_fsid/heat](https://riskfactor.com/county/franklin-county/25011_fsid/heat)

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 Franklin County it is estimated that the use of air conditioning would cause an increase in energy consumption on 131 days annually.

This risk may become even more pronounced in 30 years, as the number of cooling days is expected to increase to 144 days per year. This increase in need for cooling is expected to increase Franklin County's electricity usage for cooling purposes by 22.10%.

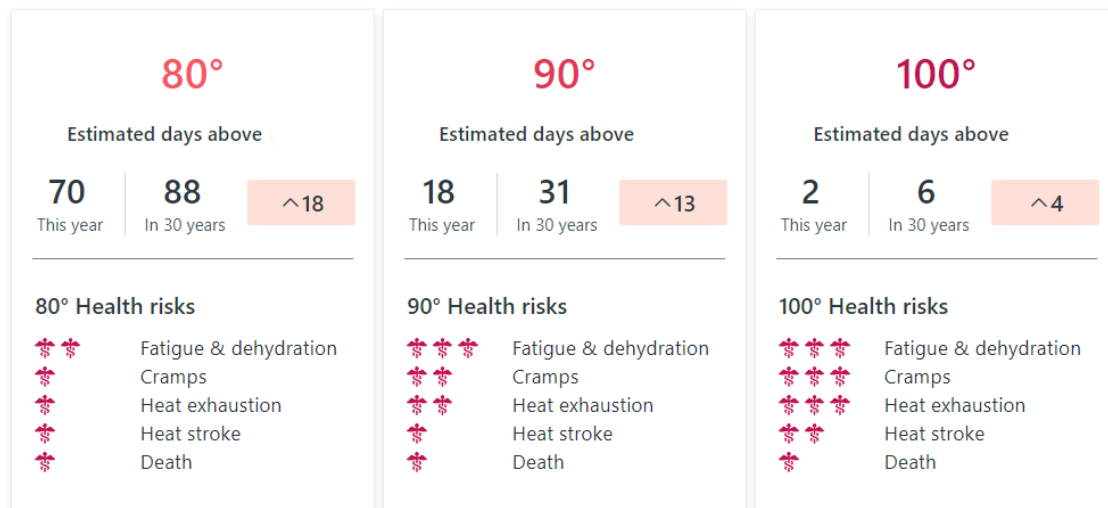
Number of cooling days this year vs. in 30 years



## Figure 10. Hot Days and Associated Risks

Source: [https://riskfactor.com/county/franklin-county/25011\\_fsid/heat](https://riskfactor.com/county/franklin-county/25011_fsid/heat)

🌿 Low risk    🌿🌿 Medium risk    🌿🌿🌿 High risk



Sources:

[https://riskfactor.com/county/franklin-county/25011\\_fsid/fire](https://riskfactor.com/county/franklin-county/25011_fsid/fire)



<https://greenfield-ma.gov/files/Greenfield MVP Report to EEA FINAL - June 2021.pdf>  
[https://riskfactor.com/county/franklin-county/25011\\_fsid/heat](https://riskfactor.com/county/franklin-county/25011_fsid/heat)  
<https://www.usnews.com/news/healthiest-communities/massachusetts/franklin-county>  
[https://www.cdc.gov/climateandhealth/pubs/air-quality-final\\_508.pdf](https://www.cdc.gov/climateandhealth/pubs/air-quality-final_508.pdf)  
<https://resilientma.mass.gov/sectors/water-resources>  
<https://www.tickcheck.com/stats/county/massachusetts/franklin-county/lyme>  
<https://www.bigbluebug.com/how-weather-impacts-tick-populations-in-south-portland#:~:text=When%20the%20temperatures%20go%20up,work%20together%20to%20kill%20ticks>

## Ice Storms & Other Winter Weather

Other hazards include ice storms, heavy snow, and extreme cold. In January 2022, there was a major winter storm and although Franklin County was spared from the worst of it, the county still experienced extreme conditions related to bitter cold and negative windchill. Such conditions are especially concerning for the roughly 550 homeless individuals in Franklin County, at least 34 of whom are unsheltered and therefore exposed to extreme cold in the winter. Ice has been a more of a concern than snow recently, and ice storms can cause trees and branches to fall on power lines. In addition, Greenfield's electrical infrastructure is aboveground, and repairs would be expensive.

Sources:

<https://www.recorder.com/First-major-winter-storm-of-the-season-spared-Franklin-County-44821773>  
<https://www.homelessshelterdirectory.org/county/ma-franklin>

## Wind

Between September 1, 2021, and September 30, 2022, 28 storm events were reported for Franklin County, 24 of those were wind related. Strong winds can cause trees to fall on power lines leading to power outages, and other concerns include flying debris, transportation disruptions and impassable roads, damage to buildings and vehicles, and injury or death. The Storm Events Database shows many trees down on wires were reported all around Franklin County from storms between September 2021 and September 2022.

Sources:

[https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate\\_mm=09&beginDate\\_dd=01&beginDate\\_yy=2021&endDate\\_mm=09&endDate\\_dd=30&endDate\\_yyyy=2022&county=FRANKLIN%3A11&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=25%2CMASSACHUSETTS](https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=09&beginDate_dd=01&beginDate_yy=2021&endDate_mm=09&endDate_dd=30&endDate_yyyy=2022&county=FRANKLIN%3A11&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=25%2CMASSACHUSETTS)  
<https://nychazardmitigation.com/hazard-specific/high-winds/what-is-the-hazard/#:~:text=High%20winds%20can%20create%20a,of%20damage%20during%20a%20windstorm>

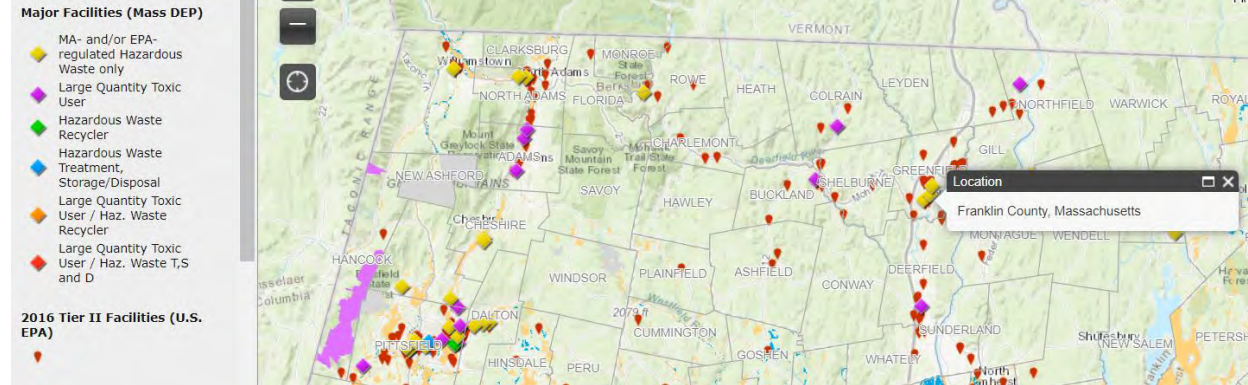
## Toxic & Hazardous Materials

Regulated hazardous waste facilities tend to be clustered in Greenfield. There are a few large quantity toxic users in the Franklin County area as well, which can pose hazards to the nearby community, as they can release harmful pollutants and contaminants. In areas with toxic waste sites, the release of harmful chemicals can affect water supply, air quality, and ground conditions, and nearby residents may experience adverse health effects. Cancer, birth defects, and developmental disabilities are among the health challenges that may be caused by living close to a toxic waste site.

As climate increases the risk of natural disasters, the subsequent downpours, floods, winds, etc., can cause destabilization of toxic waste sites, sending contaminants into the air and water.

### Figure 11. Toxic Waste Facilities in Franklin County

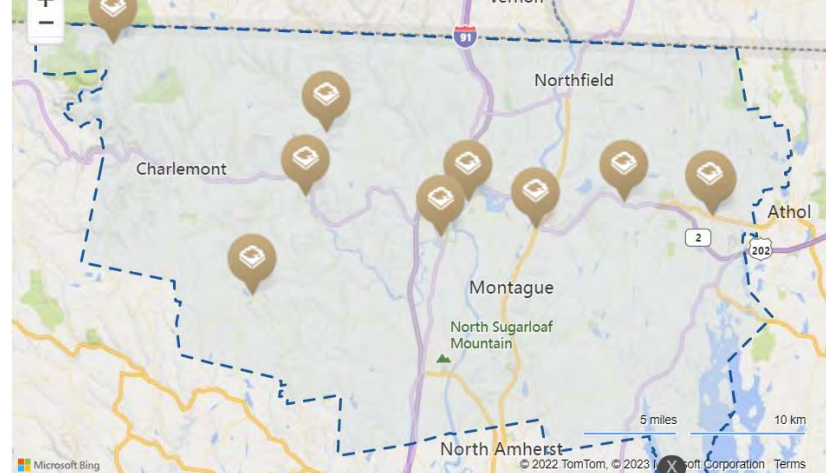
Source: <https://mass-ecoeqa.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=36d72b75ad55454fb8a9c1af809fa92a>



Another issue of concern is brownfields. These are areas of land developed for industrial purposes, that are then polluted and abandoned. Contaminated brownfield sites can increase exposure to dangerous toxins and unsafe environmental conditions. The risk is present by walking on the site, the wind carrying contaminants off the site, or the groundwater being impacted.

### Figure 12. Brownfields in Franklin County

Source: <https://www.homefacts.com/environmentalhazards/brownfields/Massachusetts/Franklin-County.html>



On a separate note, but still related, hazards may be present in housing, particularly housing that is affordable to low- or limited-income families. Approximately 70% of housing units in Franklin County were built prior to the banning of lead paint in 1978; if they have not been remediated, residents may be at risk of exposure to lead. Lead is of particular concern to babies and children, and to older adults. Additional household hazard concerns include mold and asbestos.

Sources:

<https://mass-ecoeqa.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=36d72b75ad55454fb8a9c1af809fa92a>

<https://housingmatters.urban.org/articles/millions-americans-live-near-toxic-waste-sites-how-does-affect-their-health>  
<https://www.baystatehealth.org/-/media/files/about-us/community-programs/community-benefits/2019-community-health-needs-assessments/baystate-franklin-2019-chna-report-final-web.pdf?la=en>  
<https://www.merriam-webster.com/dictionary/brownfield>  
<https://www.health.state.mn.us/communities/environment/places/brownfield.html#:~:text=Brownfields%20can%20also%20directly%20impact,groundwater%20affected%20by%20the%20site.>  
<https://www.homefacts.com/environmentalhazards/brownfields/Massachusetts/Franklin-County.html>

## Infectious Diseases

Infectious diseases, especially COVID-19 the past couple years, have posed hazards and exacerbated existing inequalities. When looking at the data for the communities served by Baystate Franklin, the towns that had higher incidence rates of COVID-19 also tended to be the lower-income towns with denser populations and under-resourced health departments. Franklin County also has a lower hospital bed availability per 1,000 people as compared to Massachusetts and the U.S., which would create complications for those needing to be hospitalized. Figure 13 (below) shows the top 10 communities served by Baystate Franklin that were in the state’s elevated risk tiers. Note that Baystate Franklin’s community served includes not only the towns/cities in Franklin County, but also four towns in Worcester County. In Figure 13, the Worcester County towns are left unhighlighted.

**Figure 13. Top 10 Communities for Elevated Risk Served by Baystate Franklin**

Source: <https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:7d0e91e9-f899-3409-b25f-d4ed6a122005>

| Town              | % weeks at elevated risk through end of 2021 |
|-------------------|--|
| Athol             | 40%  |
| Greenfield/Leyden | 40%  |
| Montague          | 35%  |
| Orange            | 27%  |
| Sunderland        | 22%  |
| Deerfield/Whately | 15%  |
| Erving            | 5%   |
| Royalston         | 5%   |

Source: Census 2020 and MADPH COVID Dashboard

Since Massachusetts’ public health infrastructure is decentralized, residents in many of the more rural areas, such as Franklin County towns, may not have received consistent pandemic responses from officials. Towns in the Baystate Hospital Franklin region that had less COVID-19 cases per capita included more households with married couples and more people over 25 with a bachelor’s degree or higher. Towns with more cases per capita were those with more unpartnered adult households, more residents who worked in the service industry, and more housing that contained three or more units.

**Figure 14. Percent of Individuals Fully Vaccinated Within Each Race/Ethnic Group Within Each County, as of 12/12/22**

Source: <https://www.publichealthwm.org/covid-19/data#vaccine>

|               | American Indian/Alaska Native | Asian | Black | Hispanic/Latino(a) | Multi | Native Hawaiian/Pacific Islander | White | Total** |
|---------------|-------------------------------|-------|-------|--------------------|-------|----------------------------------|-------|---------|
| Berkshire     | 55%                           | 72%   | 64%   | 63%                | 40%   | *                                | 76%   | 76%     |
| Franklin      | 52%                           | 84%   | 66%   | 56%                | 34%   | *                                | 76%   | 76%     |
| Hampden       | 59%                           | 71%   | 60%   | 51%                | 55%   | >95%                             | 71%   | 68%     |
| Hampshire     | 51%                           | 51%   | 53%   | 49%                | 43%   | >95%                             | 75%   | 73%     |
| Massachusetts | 53%                           | 78%   | 75%   | 67%                | 65%   | >95%                             | 78%   | 80%     |

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 – December 14, 2022 <https://www.mass.gov/info-details/massachusetts-covid-19-vaccination-data-and-updates>

Figure 14 compares vaccination rates among race and ethnic groups for each of the four Western Massachusetts counties and the state as a whole, current as of 12/12/2022. In Franklin County, the vaccination rate among American Indian/Alaskan Natives was just about on par with the other counties and the state overall. Franklin County’s highest vaccination percentage was among the Asian population compared to the other counties and the state overall. There are not enough people in the county’s Native Hawaiian/Pacific Islander population to include data on their vaccination rates. Total vaccination rate for Franklin County appears to be 76%, which is below the state average. Franklin County experienced barriers related to vaccine access, including fewer doses per capita being made available in the region, according to the [2022 Baystate Franklin Medical Center CHNA](#).

Sources:

<https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:7d0e91e9-f899-3409-b25f-d4ed6a122005>  
<https://www.usnews.com/news/healthiest-communities/massachusetts/franklin-county>  
<https://www.publichealthwm.org/covid-19/data#vaccine>

## Equity Concerns

### Internet Access

Some of Franklin County’s most rural areas were just gaining access to high-speed broadband when the pandemic began. Broadband access proved to be a major concern as COVID-19 vaccine clinic sign-ups were primarily done via the Internet. Some people in the region were unable to utilize this feature and therefore unable to access vaccinations until they were more widely available.

Limited access to computers and other electronic devices, not owning a cell phone, and/or having unaffordable or unreliable broadband could also be issues during an emergency weather event or evacuation. Many people rely on their cell phone to alert them when there is a threat in the area, but people who live in rural areas with spotty cell service or no Internet access don’t have this option. This is an issue of inadequate Internet infrastructure and high Internet costs, and with costs of housing, food, and transportation also rising, some people and families must choose between Internet and other necessities. A primary barrier of digital equity is also lack of



technology and cost of digital equipment. Lack of access to equipment is especially an issue for homeless people, those with physical disabilities (who may not be able to use regular devices with inadequate accessibility options), and those who are lower income or live in more rural areas. Another area of concern is lack of digital literacy, most often experienced by the elderly population, individuals with disabilities (mental, intellectual, and developmental), and those whose first language is something other than English.

Figure 15 compares Franklin County, three of its towns, and Massachusetts as a whole, in terms of computer access and broadband internet subscription. The data is based on the ACS 2021 5-year estimates.

**Figure 15. Franklin County Households With and Without Computer/Internet**

Source: [https://censusreporter.org/data/table/?table=B28002&geo\\_ids=06000US2501174525,06005000US25011&primary\\_geo\\_id=06000US2501174525](https://censusreporter.org/data/table/?table=B28002&geo_ids=06000US2501174525,06005000US25011&primary_geo_id=06000US2501174525)

|             | % of households w/ computer | % of households <b>without</b> computer | % of households w/ computer that have broadband internet subscription | % of households w/ computer that <b>do not</b> have an internet subscription |
|-------------|-----------------------------|---|---|--|
| MA          | 93.5%                       | 6.5%                                    | 88.8%   | 4.6%   |
| Franklin Co | 91.6%                       | 8.4%                                    | 85.7%   | 5.6%   |
| Greenfield  | 92.1%                       | 7.9%                                    | 85.7%   | 6%   |
| Montague    | 86%                         | 14%                                     | 81.6%   | 4.4%   |
| Wendell     | 85.6%                       | 14.4%                                   | 70.3%   | 15.3%  |

Lack of Internet access especially proved to be an issue during COVID-19 peaks, as more doctors transitioned to telehealth, therefore leaving those without internet access unable to seek care. Some Franklin County residents reported using Wi-Fi outside libraries or in tents outside rural schools just so children could do their homework.

Sources:

<https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:7d0e91e9-f899-3409-b25f-d4ed6a122005>

[https://censusreporter.org/data/table/?table=B28002&geo\\_ids=06000US2501174525,06005000US25011&primary\\_geo\\_id=06000US2501174525](https://censusreporter.org/data/table/?table=B28002&geo_ids=06000US2501174525,06005000US25011&primary_geo_id=06000US2501174525)

## Language Barriers

**Figure 16. Language Spoken at Home, Children 5-17 and Adults 18+**

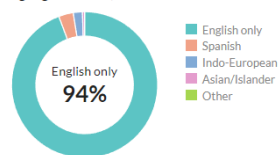
Source: <https://censusreporter.org/profiles/05000US25011-franklin-county-ma/>

N/A

Persons with language other than English spoken at home

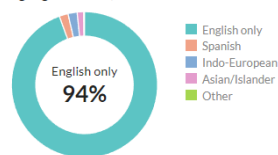
\* ACS 2021 5-year data

Language at home, children 5-17



Show data / Embed

Language at home, adults 18+



Hide data / Embed

Language at home, adults 18+ (Table B16007) [View table](#)

| Column         | Franklin County |       | Massachusetts |        | United States |       |           |           |       |       |             |            |
|----------------|-----------------|-------|---------------|--------|---------------|-------|-----------|-----------|-------|-------|-------------|------------|
| English only   | 94.4%           | ±1.2% | 55,829        | ±979.4 | 75.4%         | ±0.3% | 4,237,453 | ±17,324.7 | 78.3% | ±0.1% | 202,355,308 | ±144,991.6 |
| Spanish        | 2%†             | ±1%   | 1,158         | ±591.4 | 9.1%          | ±0.1% | 512,873   | ±7,884.9  | 12.8% | ±0%   | 33,136,131  | ±91,241.9  |
| Indo-European  | 2%†             | ±1%   | 1,203         | ±581.4 | 9.4%          | ±0.3% | 528,897   | ±15,431.6 | 3.9%  | ±0%   | 10,140,516  | ±74,685.4  |
| Asian/Islander | 1.4%†           | ±0.5% | 851           | ±314.9 | 4.6%          | ±0.1% | 258,684   | ±7,352.3  | 3.7%  | ±0%   | 9,671,724   | ±54,463.1  |
| Other          | 0.2%†           | ±0.4% | 96            | ±259.1 | 1.5%          | ±0.1% | 84,876    | ±7,083.2  | 1.2%  | ±0%   | 3,114,788   | ±48,256.8  |



Upon first glance at Figure 16, it might appear that language barriers aren't an issue because of the high percentage of Franklin County residents that speak English. However, looking at sheer numbers of residents that speak a language other than English at home, there are actually well over 2,000 adults who speak Spanish or an Indo-European language at home. If these individuals are not fluent in English, they may not have access to the necessary information in event of an emergency. Also, language barriers create challenges within the healthcare system and there is a need for more interpreters and translation of materials.

Source: <https://censusreporter.org/profiles/05000US25011-franklin-county-ma/>

## **Transportation**

Because Franklin County is exclusively rural, it is difficult to provide adequate transit services and therefore residents must rely on using a personal vehicle. This poses a challenge for the estimated 7.8% of households that don't have a vehicle, whether due to lack of access or inability to drive due to aging, disability, etc. Residents have expressed a need for weekend and evening bus service. Currently there is no public transportation on Saturdays or Sundays or any evening after 7:30pm. For those who don't work the typical 9-5 or who need to run errands on the weekend, it can be impossible if access to a car is not an option.

When the COVID-19 vaccine first became available, the closest vaccination site to Franklin County was in Springfield, an hour and a half drive away for those living in western Franklin County. For those without a car, this may have been completely undoable. Shelter residents in the region express that they are often unable to attend important appointments related to medical issues, mental health, and substance use due to lack of transportation. One resident reported having to travel to Springfield every day for methadone treatment. Unreliable transportation access can interfere with residents' ability to access necessary care.

According to interviews, there are some places within the county where someone would actually have to drive a long distance just to pick up a bus—negating the point of using public transportation, as many people who use it don't have access to a car or are unable to drive.

Sources:

<https://www.usnews.com/news/healthiest-communities/massachusetts/franklin-county>

[https://greenfield-ma.gov/files/Greenfield MVP Report to EEA FINAL - June 2021.pdf](https://greenfield-ma.gov/files/Greenfield_MVP_Report_to_EEA_FINAL_-_June_2021.pdf)

<https://frcog.maps.arcgis.com/apps/MapSeries/index.html?appid=19ddd565c2a34907a916daf192a8a363>

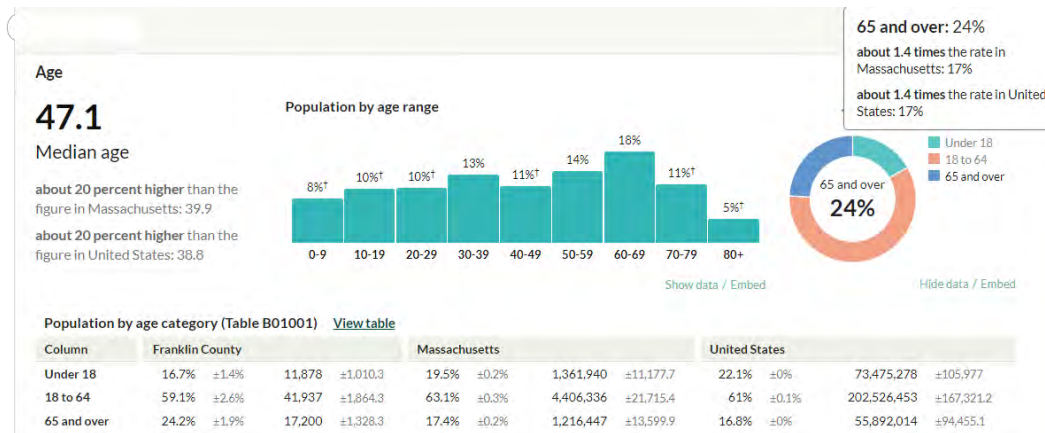
<https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:7d0e91e9-f899-3409-b25f-d4ed6a122005>

## **Older Population**

The rate of residents 65 and older is 1.4 times higher in Franklin County than in Massachusetts and the United States as a whole. 24.2% of the county population, or 17,200 individuals, are over 65 years of age. There are approximately 4,582 individuals over age 65 who live alone, or about 15% of the county population. In the event of an emergency, these individuals may be at higher risk, especially if they don't have a cellular device or lack the knowledge on how to use it to access alerts and information. Additionally, some of these individuals may not be able to drive if they need to evacuate.

## Figure 17. Franklin County Population Breakdown by Age

Source: <https://censusreporter.org/profiles/05000US25011-franklin-county-ma/>



Due to a lack of appropriate housing for downsizing, many seniors live by themselves in unnecessarily large houses that are difficult for them to maintain, posing safety hazards. According to the [Franklin County Age- and Dementia-Friendly Survey](#), respondents reported not having good access to home repair and lawn care services. Seniors' fixed incomes can cause issues for them as well, as they often must decide between spending money on rent, groceries, bills, or medications. According to the survey, approximately 32% of respondents indicated they would consider changing their living situation because of a need for better public transportation and about 22% cited a need for better healthcare services. In an interview, it was mentioned that increasingly residents must travel longer distances to get needed healthcare. Needing to travel to Springfield, rather than Greenfield or Northampton, takes up a large part of someone's day or is too far for an older friend to drive, thus making it less likely that an older person is able to make their appointment. 66.42% of the respondents indicated they don't have public transportation in their area.

Sources:

<https://censusreporter.org/profiles/05000US25011-franklin-county-ma/>

<https://drive.google.com/file/d/1JjExZJcl1aazsQPLv7EUUwhuOWWWGcxK/view>

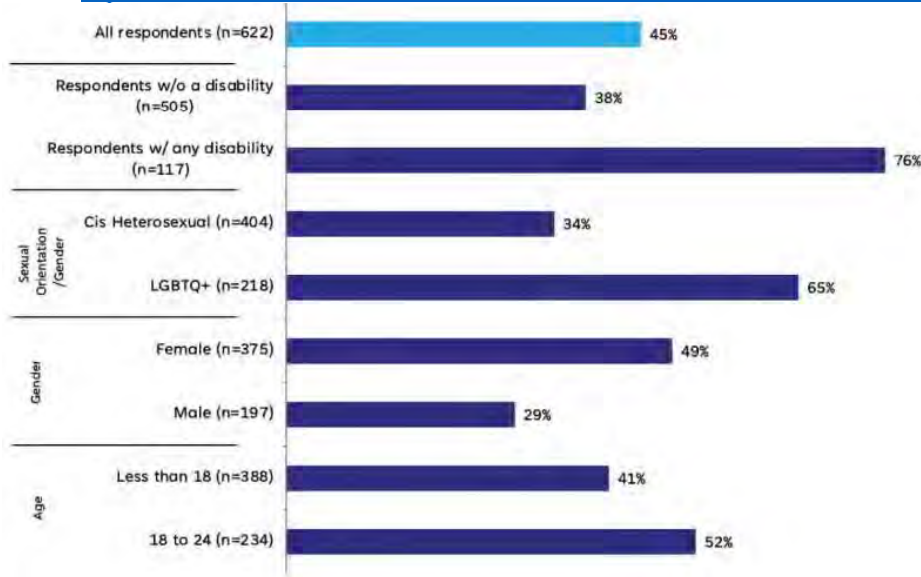
## Mental Health & Substance Use Disorder

One area of major concern among the region is youth mental health. Baystate Franklin saw an increased need for mental health services among youth and young adults as a result of the COVID-19 pandemic.

Because of the pandemic, some families found themselves unable to access mental health care due to a shortage of therapists, psychiatrists, and social workers. In the Franklin County region, issues related to insurance and referral networks are highlighted among young people of color and families who struggle financially. An obvious indicator of the region's shortage of mental health providers is the fact that usually up to 10 pediatric and adolescent patients are spending days, weeks, or months on psychiatric holds at the emergency department while waiting for a bed in a mental health facility to become available somewhere in the state.

**Figure 18. Western MA Youth (<24) Who Reported Feeling Sad or Hopeless, 2020**

Source: <https://acrobat.adobe.com/link/review?uri=um:aaid:scds:US:7d0e91e9-f899-3409-b25f-d4ed6a122005>



Franklin County residents reported having 4.7 “not good” mental health days per month, with 12% of residents reporting poor mental health for at least two weeks per month. Baystate Franklin saw an increase of residents with a mental health diagnosis (1,275 in 2019 to 1,376 in 2021). Additionally, mental health diagnoses in people over 65 in Franklin County increased from 18% in 2019 to 21% in 2021.

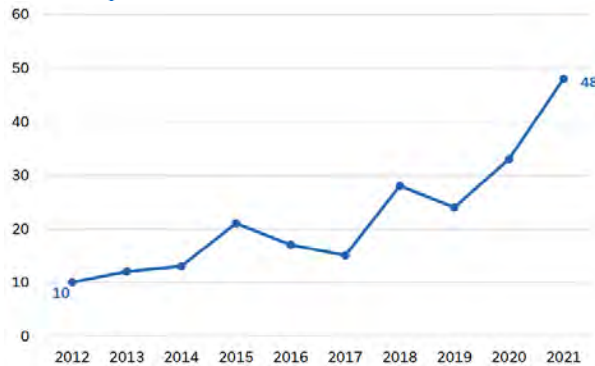
In the event of an emergency evacuation, which is already a stressful and anxiety-producing event, lack of needed medication could cause additional consequences. For example, antidepressants typically cannot be skipped or stopped without direction from a healthcare professional.

Baystate Franklin continues to be concerned with substance use in the region. Substance use-related emergency department visits to Baystate Franklin jumped from 1,282 in 2019 to 1,473 in 2021. Binge drinking and cigarette smoking are also both slightly higher for Franklin County than for the state as a whole.

Opioid use in the county has dramatically increased over the past decade, likely resulting from the increased presence of fentanyl. Though opioid-related deaths are increasing, there is an increasing awareness of medication for opioid use disorders (MOUD). In the event of an emergency, someone taking a MOUD may lose access to it, which at best leads to discomfort and can cause a relapse, leading to overdose or death.

**Figure 19. Unintentional Opioid Death Rates in Franklin County, 2012-2021**

Source: <https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:7d0e91e9-f899-3409-b25f-d4ed6a122005>



Sources:

<https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:7d0e91e9-f899-3409-b25f-d4ed6a122005>

<https://ascpjournals.biomedcentral.com/articles/10.1186/s13722-022-00299-1#:~:text=Medication%20treatment%20for%20opioid%20use,to%20relapse%2C%20overdose%20and%20death>

## Single-Parent Households

According to the 2021 ACS 5-year estimate, 38.08% of households with children in Franklin County are headed by a single parent. The county experienced a record high of 38.64% in 2011 and a record low of 32.37% in 2019. Generally speaking, programs that help with preparation for emergencies or disasters tend to assume each family has the means and resources to create an evacuation kit or maintain supplies to shelter in place. There's often an assumption that families will evacuate via a personal vehicle, and with almost 8% of the county's population without a vehicle, this can create a situation where some are left behind.

Parenting in a single-income household can be stressful enough, but when faced with an emergency, a single mother or father may not have the proper resources or supplies to keep themselves and their children safe or to get to a safe place. Additionally, single parents, particularly single mothers, are more likely to be food insecure. As stated in one of the emergency preparedness interviews, an emergency where the power goes out and ruins all the frozen and refrigerated food could be the turning point for a family already struggling. Suddenly, whatever amount they spent on those groceries is a waste and they may not know where their next meal for them and their kids will come from.

**Figure 20. Single-Parent Households with Children as a Percentage of Households with Children, in Franklin County, MA**

Source: <https://fred.stlouisfed.org/series/S1101SPHOUSE036033>



Sources:

<https://tradingeconomics.com/united-states/single-parent-households-with-children-as-a-percentage-of-households-with-children-in-franklin-county-ma-fed-data.html>  
<https://disasterphilanthropy.org/blog/parenting-alone-single-parents-in-disasters/>  
<https://fred.stlouisfed.org/series/S1101SPHOUSE025011>  
<https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-security-and-nutrition-assistance/?topicId=c40bd422-99d8-4715-93fa-flf7674be78b#:~:text=Food%20insecurity%20rates%20are%20highest,and%20very%20low%20food%20security.>

## **Food Insecurity**

As mentioned in the last section, a family can be close to being food insecure and then a power outage happens and all their food spoils, and that's the "tipping point". Other types of emergencies can exacerbate this as well, such as the COVID-19 pandemic. According to the [COVID-19 Community Impact Survey Data Dashboard](#), 22.8% of the respondents for Franklin County indicated that they were worried about getting food or groceries for them and their family currently or within the next few weeks.

Source:

<https://www.mass.gov/info-details/covid-19-community-impact-survey-data-dashboard>

## **Boarding Schools, Group Homes, and Nursing Homes**

For its size, Franklin County has quite a few boarding schools, group homes, and nursing homes or assisted living facilities. Each of these involves a large number of people in a congregate setting, and therefore a high volume of people who may need assistance in an emergency. Boarding schools may have dedicated full-time staff who can make sure everyone is safe in an emergency, though the students are likely there with minimal resources and possibly far away from their family and support system. Staff may also have their own families to look out for. Group homes commonly share staff with other group homes, and many are part-time. There may not be a constant enough workforce at any given group home to be properly trained in what to do in the event of an emergency.

Nursing home residents aren't just at risk in a major disaster but these facilities can often be underprepared for mundane emergencies. While this may or may not be an issue in Franklin County or in the state as a whole, in general, across the country, violations of emergency planning rules in nursing homes are frequent. Additionally, one third of nursing homes in the U.S. fail to inspect their generators on a recurring basis. This can pose a hazard in the event of a power outage when many of their residents would need to rely on a generator for their oxygen. In a power outage, hospitals tend to take priority over nursing homes, which are sometimes left to fend for themselves. Franklin County has about six long-term care facilities with a total of 508 beds.

Sources:

<https://www.npr.org/sections/health-shots/2017/09/19/552042095/many-nursing-homes-arent-prepared-for-even-basic-emergencies>  
<https://healthsciences.apprstate.edu/news/nursing-homes-report-emergency-preparedness-tasks-has-progress-been-made>



## Electricity-Dependent Medicare Beneficiaries

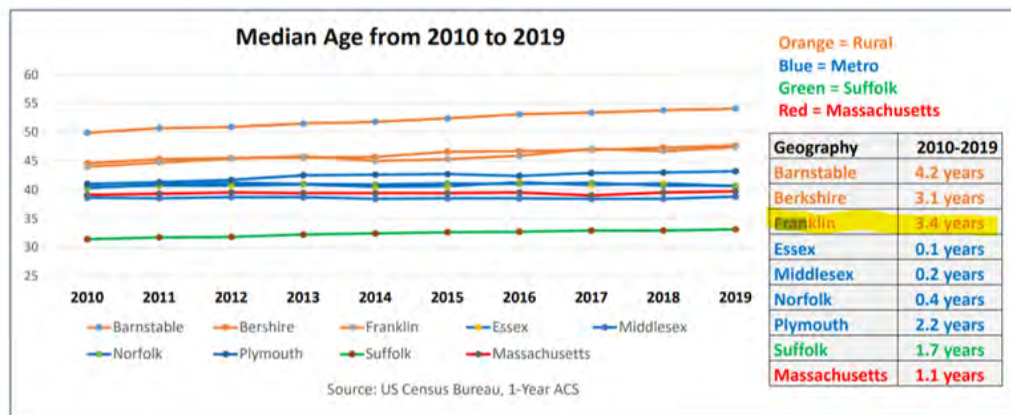
Out of the 20,066 Medicare beneficiaries in Franklin County, 642 rely on electricity for their medical devices and assistive equipment. This may include ventilators, chair lifts, mobility devices, CPAP devices, and others. Several of the common weather events in Franklin County can cause damage to power lines, and therefore power outages, which can create a life-or-death situation for individuals who rely on electricity.

Sources:

<https://empowerprogram.hhs.gov/empowermap>  
<https://content.govdelivery.com/accounts/MIDHHS/bulletins/225e5ae>

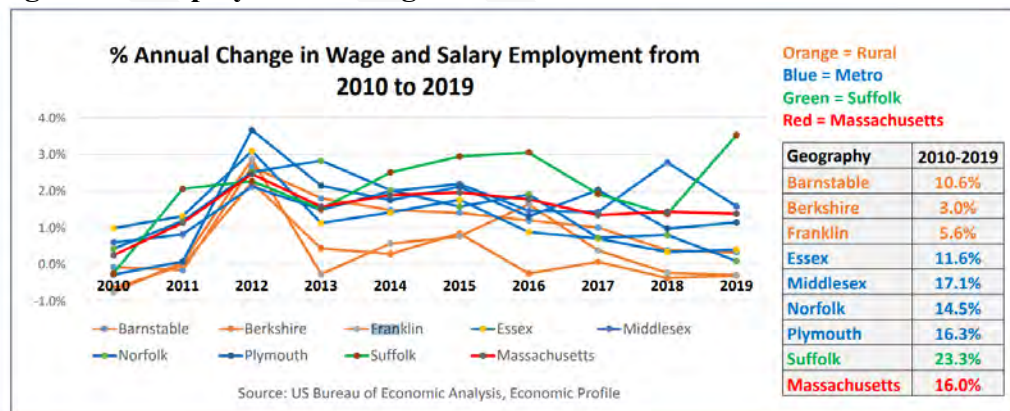
## Additional Interesting Data & Graphics

**Figure 21. Median Age**



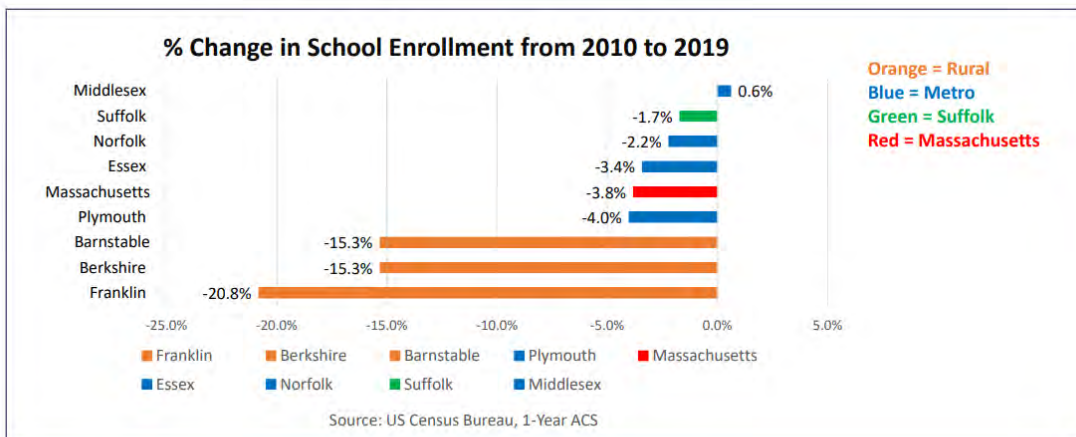
Rural Massachusetts is growing older, which exacerbates the problems of population decline by increasing the number of citizens on fixed incomes, the need for specialized healthcare services, housing and infrastructure, and reducing the available workforce.

**Figure 22. Employment Change**



While wages in Suffolk County increased by 23% over the 10-year period, wage growth of jobs located in Berkshire and Franklin Counties and other rural areas was in the single digits, arguably not keeping pace with rising costs of living over the time period and certainly not preparing rural workers for inflation and costs created by COVID-related supply chain issues.

**Figure 22. School Enrollment Changes**



**Declining enrollment creates smaller class sizes, but rarely eliminates the need for a classroom or the costs of maintaining school facilities. Educating less children does not cost less.**

Despite the declining school-age population, the decline isn't always to the extent that closing a school or classroom is the best choice—therefore, class sizes simply decrease and there are higher per-pupil costs, which cause districts to have to reduce staff or omit certain programming.

Sources:

<https://berkshireplanning.org/wp-content/uploads/2022/03/Rural-priorities-ARPA-FY23-budget-3.7.22-002.pdf>

[https://www.masslive.com/politics/2017/03/a\\_graying\\_population\\_causes\\_ch.html](https://www.masslive.com/politics/2017/03/a_graying_population_causes_ch.html)

## Recommendations

Based on interviews, the following planning documents, support, and training and exercises may be beneficial to those responding in an emergency in Franklin County. No particular equipment needs were mentioned in the interviews with Franklin County responders.

### Planning and Support

- Help connecting people with support services
- Phone trees
- Send out emergency contact information with taxes
- Method of contacting vulnerable individuals in an emergency to find out if they're in need or if they are being taken care of by a relative, friend, neighbor, etc.
- Template for list of vulnerable populations and plans in place
- Add strategies for reaching the most vulnerable to emergency plans
- Better, more consistent staffing – administrative, operational, educational
- More funding and capacity, stipends for extra work for elected/appointed boards
- More standardization of regional planning and regional response consideration
- Expanded healthcare access and public health outreach

- Better support for municipal public health and EMS to provide outreach and services to vulnerable populations
- Better means to track vulnerable or marginalized populations and how to reach them
- Additional work on reverse 911 system
- More of a community paramedicine approach
- Updated debris management plan—a plan for where to take the material if houses are destroyed, where to bring other hazardous materials
- More concise hazard mitigation plan—anything too long will be overwhelming to read through
- More resources to send out to marginalized populations
- Viable plan to evacuate elderly population
- Look into inter-crossing of different agencies and how they can be mingled—combine funding for agencies doing a lot of the same work
- Set up a meeting where everyone can come and explain what they're working on—certain things may be working up in the hill towns that can be brought down to central Franklin County and implemented there
- Combine resources and foster partnerships
- Better Emergency Broadcast System that matches up with Public Health Excellence Groups
- Medication dispensing sites
- Shelter location and resource center

### **Training and Exercises**

- Help training first responders, fire, and police on issues like substance use, aging, dementia, and familiarize them with Indigenous communities
- Activate county operation center more often
- Training from incident management team to help staff in various areas understand better
- More education to leadership of towns and Boards of Health
- More emergency drills

### **County Resources (Completion in Phase II)**

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