WRHSAC Equity Data Project – Western Massachusetts

Project Summary

This report identifies groups experiencing various functional and access needs who may be at higher risk of threats and hazards, as well as specific circumstances that might impact an individual's ability to respond quickly and appropriately before, during, and after an emergency. The aim of this report is to begin the process of identifying strategies to increase equity in access and outcomes among all individuals for emergency response information and resources. Some define equity as "ensuring positive outcomes for all people by taking into account the unique circumstances and needs of every individual and allocating exact resources to remove structural barriers" or "the recognition that each person has different circumstances and allocates the exact resources and opportunities needed to reach an equal outcome" (Marin Health and Human Services).

If response agencies and communities are underprepared to support individuals with additional needs or lack strategies to support the diverse groups of individuals in their communities, the overall response to the disaster may be insufficient. By making everyone more resilient and prepared, and by ensuring that response agencies and communities can meet the needs of the individuals they serve, communities can be better equipped to survive and thrive through disasters.

Systemic racism, stigma, and bias often play significant roles in access to resources, information, and better outcomes before, during, and after emergencies. In many data sets, race, ethnicity, and age are often used as quick ways to measure the experience of racism, stigma, bias, and increased needs. Approaches that rely on easily observable characteristics may not identify the underlying issues that more directly impact emergency response services and outcomes. This assessment report is focused on the demographic and socioeconomic status data points that are known to contribute directly to increased functional and access needs for individuals, neighborhoods, and groups.

Characteristics such as disabilities, medical conditions, rural locations, lower incomes, immigration status, lower educational attainment, limited access to transportation, and an inability to speak or read English well are common access and functional need indicators to be considered in planning for emergencies. In addition, individuals in some rural and some urban areas, as well as those who are undocumented, may have a reluctance to seek help or trust authorities, making it harder to provide

access to needed services. This report acknowledges that historical systems of oppression and racism have led to housing and other practices that mean people of color (POC) and especially people who identify as Black are more likely to live in areas more prone to flooding and other hazards.

The data for this report were gathered between October and December 2022 by staff of the Berkshire Regional Planning Commission with funding provided by the Western Region Homeland Security Advisory Council (WRHSAC). Ongoing support and oversight for this project were provided by the Western Advisory Group (WAG), which is made up of representatives from the four Western Mass Public Health Emergency Preparedness Coalitions, as well as by WRHSAC's All Hazards Planning and Equipment Subcommittee. Quantitative data were gathered from a variety of sources which are noted throughout the report and compiled and collated by county and municipality where possible. In addition, targeted interviews were conducted with Emergency Management Directors (EMD), local Boards of Health (LBOH), Town Managers, School Superintendents, Emergency Medical Services (EMS), Hospitals, Public Health Coalitions, and Regional Emergency Planning Committees (REPC) to add qualitative data. The identified equity concerns and vulnerabilities, as well as recommendations for mitigation, are drawn directly from this data collection and especially from the interviews.

Western Mass Overview

Bordered by the four states of New Hampshire, Vermont, New York, and Connecticut, Western Mass by tradition and design consists of the 101 independent municipalities located in Massachusetts's four westernmost county regions of Berkshire, Franklin, Hampden, and Hampshire. Western Mass has over a quarter of the landmass of the state and about 12.5% of the population, making it mostly, though not solely, a rural area. The four counties are diverse, with Franklin the smallest in population and the most rural in the state. Hampden County includes Springfield, the third largest city in Massachusetts, and has almost three times the population of Hampshire County, the next largest county in Western Mass. Hampshire County has a large college-aged population, while Berkshire County is the largest county by landmass in the region and a well-known holiday area. Although each county has its own priority issues, they share many of the same threats and hazards, to varying degrees.

Rural Western Mass, with its many small towns and cities, is far from the seat of power in Boston. There are 62 small towns in Massachusetts with populations under 2,000 and 54 of them are in Western Mass. The state has 14 cities with populations over 70,000 and only one is located in Western Mass. Median income in Western Mass is lower and resources are fewer than in most parts of the state. To reduce costs in rural areas, many local town departments are managed by volunteers or part-timers. While many have acquired relevant experience, a lack of updated or professional training makes it less likely that Western Mass officials will be active in state level advocacy organizations or aware of current threats and mitigation strategies. Distance from Boston also means that municipal officials and staff in Western Mass experience a greater burden in maintaining relationships with state decision-makers. Small towns are probably less prepared for extensive emergencies than large towns and cities that have more resources, paid staff, multilingual responders, and multiple social service agencies with funding and experience in supporting individuals with extra needs.

Western Mass has a long history of regional cooperation, especially in emergencies. These efforts have been greatly enhanced by the formation and effective leadership of the Western Region Homeland Security Advisory Council (WRHSAC; Preparedness Resources for First Responders (wrhsac.org)) hosted by the Franklin Council of Governments (FRCOG). All four counties actively participate in the planning work of WRHSAC. This has built robust mutual aid and other regional support capabilities in Western Mass.

Identifying strategies that can reduce bias, stigma, and dismantle systemic racism and structural disparities that contribute to inequities in emergency response is difficult for any region, but especially for one that has 101 independent governmental jurisdictions, each with its own funding priorities, governance structures, and Emergency Management Director (EMD). Most EMDs in Western Mass are volunteers or wear multiple hats, making it challenging to plan for multiple threats or direct multiple operations during prolonged emergencies for multiple departments over extended operational periods. Communication is a particular challenge in such a large and diverse area.

Most local EMDs know their communities well. Some maintain written lists of the individuals in their community who would be at higher risk in an emergency, such as the homebound, those requiring electricity for medical devices, single parent families, older adults living alone, etc. The list of agencies providing support services is long and with the possible exception of Hampden County, not often centrally coordinated or listed anywhere. This can make it challenging to identify resources, best practices, and prevention/mitigation strategies that might benefit individuals who are at increased risk of being impacted by threats and hazards. In addition, EMDs may not be aware of emerging threats associated with climate change, cyber-attacks, civil unrest, and emerging diseases, putting their municipality and the region at higher risk.

There is also a recognition among many emergency preparedness professionals that coordinated public information and risk communications are essential to an effective, efficient emergency response so that the right people have the right information to make the right decisions at the right time. There are currently few examples of sustained, coordinated, regional public information systems in Western Mass to ensure consistent, timely messaging to all residents.

Report Organization

Methodology

Project Objectives
- **Data:** Conduct a needs assessment to identify preparedness gaps in Western Mass that contribute to inequity among groups and individuals in outcomes in emergency planning, response, and recovery.
- **Findings:** Identify priority individuals and groups in Western Mass that are likely to need additional or different assistance in emergencies.
- **Next Steps:** Recommend ways to improve equity in emergencies.

Disclaimers
- We are not experts on equity, systemic racism, stigma, or bias.
- We acknowledge that systemic racism and the experience of racism, stigma, and bias play substantial roles in equity in every area of our lives.
- Our intention is to avoid singling out or causing additional harm to any individuals or groups.
- In this project we focused on demographics, indicators, and factors that are known or suspected to impact the equitable distribution of information and resources in emergency response.

Approach
- Agreed on working definitions of equity and equitable.
- Kept the focus on Western Mass and areas we might be able to improve while acknowledging the existence of larger issues.
- Assessed existing quantitative data.
- Collected qualitative data using targeted interviews with Responders, Public Health Coalitions, Regional Emergency Planning Committees, and more, including:
  - Hospitals
  - Emergency Management Directors (EMDs)
  - Emergency Medical Services (EMS)
  - Fire
  - Police
  - Public Health Coalitions/Boards of Health (BOH)
  - Town Manager/Administrator
  - Schools
- Identified doable strategies to assist priority groups and responders in preparing for more equitable and effective responses.
- Assisted WRHSAC's All Hazards Planning and Equipment Subcommittee in identifying and prioritizing mitigation investments.

Working Definitions
- **Equitable/Equity:** Equity is the principle that in order to achieve equal outcomes, resources must be allocated according to individual circumstances. Equity is distinct from equality where each individual or group is given the same resources, regardless of circumstances.
- **Fair:** characterized by honesty/justice, unbiased, the removal of barriers.
- **Bias:** preference for or against a person or group, usually in a way considered to be unfair.
- **Stigma:** negative feelings associated with a particular circumstance, quality, characteristic, person, or group.

Assumptions
- Things may have changed since the data were collected but the trends and disparities shown probably still exist.
- Some of the data sources may no longer be available.
- Statewide data likely reflect similar disparities in Western Mass.
- People of color include those who identify as American Indian or Alaska Native, Asian, Black, Native Hawaiian, Pacific Islander, and/or Hispanic or Latino. Sometimes the data do not specify specific racial or ethnic categories. Where possible data were broken out by race and/or ethnicity rather than a catch-all "people of color" category.
- White is not the default race in our work and is therefore capitalized to be consistent with other racial/ethnic terms used including Black, Asian, and Indigenous or Native American.
- Both race and gender characteristic labels are social constructs and can change based on definitions used at the time the data were collected or by how individuals or groups self-identify.
- The data presented here are from data sets which may not account for gender identity among transgender individuals except where noted. While the needs of transgender individuals are underexplored in the data, our research will be inclusive of both transgender and cisgender individuals as data is available.
- The disparities and risk factors explored are known to influence behaviors that contribute to future incarceration, mental health issues, and substance use disorders (SUDs), chronic health conditions, and an overall decrease in physical health.

Research Findings Summary

Hazards and Threats: Loss of power/power outages and natural hazards such as flooding topped the threat lists of those interviewed for this report. Most responders also mentioned hazardous spills and wildfires, and many mentioned staffing and supply shortages, civil unrest, a sudden influx of migrants, pandemics, and cybersecurity.

Equity Related Vulnerabilities: In general, Western Mass residents are older, poorer, live in more rural areas, and more likely to have a disability, smoke, die prematurely, or have a substance use disorder. They are also less likely than the rest of Massachusetts to have access to reliable broadband Internet and cell phone services. Although the percentage of those with disabilities or those without vehicles in Western Mass may be near the state averages, small, rural communities with fewer resources and services that can only be reached by private vehicles or by broadband likely increases the actual impact on individuals who will have additional or different access and functional needs. A lack of housing was also mentioned by many as a significant vulnerability in most communities. In addition, as in other parts of the state, there are a significant number of individuals in Western Mass who are part of racial and ethnic minority groups that are subject to the longstanding impacts of systemic and structural bias and racism, which are exacerbated in emergencies, creating the necessity for communities to intentionally serve groups of racial and ethnic minorities with greater effort and care.

Improvement Planning: During our interviews, every community, big or small, worried about individuals with fewer resources, including people with lower incomes, older adults, children, and immigrants. Every town wished for better communications with all their residents, and many wished they had what some cities have: a coordinated, experienced network of government and social service agencies that meet regularly and work together to solve local social problems and ensure social

services for those at higher risk. Most communities wanted more money, more time, better housing, and more homeless shelter spaces.

Selected Risk Indicators of Individuals at Greater Risk in Emergencies (2020)

This chart quantifies the estimated numbers of individuals for selected risk factors and indicator data points in each county. Note that individuals may be counted in more than one category.

Risk Factor	Berkshire	Franklin	Hampshire	Hampden
Population 2020*	129,028	71,029	162,308	465,825
Living in Poverty**	14,063	7,600	18,990	79,190
Over 65**	31,740	17,717	30,513	82,451
Over 65 Living Alone*	9,849	4,358	7,245	23,572
No Vehicle*	1,895	990	2,162	8,287
Education Lower Than HS Graduate** (over age 25)	9,031	4,545	7,628	64,749
Non-English Speaking at Home** (over age 5)	9,548	4,403	20,450	122,046
Living with One or Two Disabilities*	19,580	10,892	17,046	73,061
Vision Difficulty*	2,929	1,241	2,292	11,973
Hearing Difficulty*	5,414	3,176	4,577	16,038
Self-Care Difficulty* (difficulty dressing, bathing, or getting around inside their home)	3,136	1,975	3,187	17,602
Independent Living Difficulty* (challenges performing activities of daily living or doing errands on their own, such as visiting a doctor's office)	7,159	3,488	6,087	29,341
Cognitive Difficulty*	7,832	4,490	6,444	30,982
Ambulatory Difficulty* (often involves severe difficulty with walking or climbing stairs)	9,100	4,807	7,453	37,340
With a Disability, Under Age 65**	13,676	8,594	12,822	57,296
Long-term Care Residents*	1,753	508	913	3,858
Households without High-Speed Internet**	18,321	9,517	16,555	73,600
Identifying as Other than White-Alone, Non-Hispanic**	16,773	7,315	27,916	186,330
Affordable Housing Units** (Risk Indicator; these individuals likely have fewer resources)	12,961	1,162	2,106	15,708
Premature Death Years** (indicates cumulative Risk; years of potential life lost due to death occurring before age 75, per 100,000)	8,500	6,600	5,800	8,200

*W MA HMCC Hazard Vulnerability Assessment June 2022 – Western MA Health and Medical Coordinating Coalition (region1hmcc.org)
**U.S. Census Bureau QuickFacts: Hampden County, Massachusetts; Hampshire County, Massachusetts; Franklin County, Massachusetts; Berkshire County, Massachusetts; Massachusetts
***Low Income Apartments and Section 8 Waiting Lists in Massachusetts (affordablehousingonline.com)
****Years of potential life lost before age 75 per 100,000, RWJ County Health Rankings

Equity Related Recommendations Summary

Goal: Educate communities on equity related risks and provide them with best practices, templates, resources, training, supplies, and proven strategies for the mitigation of disparities in emergency planning, response, and recovery.

Emergency planners have traditionally considered and provided for the extra or different needs of individuals with certain characteristics such as people with disabilities, the elderly, Spanish speakers, etc. These extra or different considerations are not always reflected in written planning documents, policies, or procedures. In addition, training and exercises often don't specifically mention groups with special needs or target exercises in geographic areas that are known to house groups with extra or different needs than the majority of the population. Including an equity related element in an exercise means that everyone is better able to prepare for, respond to and recover from emergencies.

Top Hazard/Threat Mitigation Recommendations

Planning: Integrate Equity Concerns into all Emergency Planning
1. Engage private individuals in each county in the emergency planning process, especially those at higher risk in an emergency, to ensure that equity concerns are effectively considered when setting priorities and response actions.
2. Ensure that agreements to provide behavioral/mental health and social services are known to responders. Provide agreement templates where appropriate agreements do not exist.
3. Provide or update Emergency Plans and Annexes with strategies for including identified equity concerns for various types of emergencies, especially those involving sheltering and evacuation.
4. Create an emergency responder communications/referral tree in each county with social service agency descriptions and contact information and identify a lead agency to maintain the lists.
5. Encourage those with disabilities, those who are medically dependent on electricity, and those with other access or functional needs; to register with their electric company, local fire/police, and other service and support agencies.
6. Work with trusted local organizations and participating communities to develop and coordinate communication plans to get consistent messages to their clients and residents.
7. Develop communication platforms/methods before an emergency and use them regularly to disseminate information so that these systems are seen as a trusted source of information.
8. Provide guidance and support for communities that want to explore regional shared service arrangements, such as shared fire or police chiefs, ambulance services (EMS), Health Directors, Information Technology (IT) Managers, Town Managers, and others.

Training and Exercises: Integrate Equity Concerns into all Training and Exercises
1. Exercise and practice emergency response information sharing and coordination among public safety, medical providers, and public health at least annually.
2. Create or identify short videos to teach Adult and Pediatric Behavioral or Mental Health First Aid to be used before, during and after a disaster to help communities address the significant issues caused by trauma, stress, and inequities.
3. After appropriate planning, outreach, and education; exercise the use and coordination of MA 211, 988, other existing Emergency Help Lines, outgoing 911 (Code Red, Reverse 911, and similar), and local or municipal email networks to distribute emergency information. Evaluate how effectively the messages were coordinated and whether information reached

individuals with functional or access needs and those who have hearing, sight, or cognitive disabilities.
4. Create a county-specific exercise template and exercise the coordination of public information, including the use of social media and local networks, at least annually in each county.
5. Provide a checklist for including equity concerns in exercises such as using a hazardous spill scenario that impacts a low income or older adult neighborhood or senior living community.
6. Provide a large-scale exercise template for evacuating or sheltering large numbers of people, with an emphasis on ensuring equitable access to information and needed services for the people at higher risk or those with different access and functional needs, including the hearing and sight impaired, those with mobility and cognitive disabilities, low-income households, non-English speakers, etc.
7. Provide diversity, equity, and inclusion (DEI) training and tools to EMDs, EMS, fire, police, and public health personnel to encourage and increase cultural competence.

Outreach and Education: Integrate Equity Concerns into all Outreach and Education
1. Educate agencies on how and why they should register with 211 and other emergency helplines and referral trees.
2. Educate the public on use of 211 and 988, how/where to get information and request services in emergencies and how to register for their community's outgoing 911 emergency alert system and local email networks.
3. Hold regional forums/conferences on regional disparities in emergencies and strategies for mitigating equity concerns.
4. Use existing resources to develop connections with vulnerable and at-risk individuals. For example, ask public health nurses to reach out to the homebound and provide them with information about connecting to emergency services before, during and after an event, especially when and where to seek assistance when overwhelmed during an emergency.
5. Consider fundraising for an Emergency Reserve Fund to provide emergency resources directly to individuals during emergencies such as emergency fuel, air conditioners, fans, food, rental assistance, etc. that will keep people safe, in their homes, and out of shelters.

Equipment: Prioritize Equipment that Mitigates Equity Issues in Emergencies
1. Shower trailers
2. Laundry trailers
3. Generator trailers
4. Sandbags
5. Washable blankets and pillowcases
6. Portable cell towers
7. Solar batteries for medical equipment in homes that have lost electricity
8. Over-the-counter hearing aids and reading glasses
9. Female CPR manikins to ensure people are comfortable providing CPR for a variety of bodies, especially women
10. Narcan kits for shelters
11. Power strips for recharging stations

Details on Common Western Mass Hazards and Threats

The following were identified as hazards, threats, or concerns across Western Mass

1. **Weather:** Extreme weather events that result in lengthy power outages, major flooding, prolonged extreme heat or cold, multi-year droughts, or extensive wind damage to infrastructure or the environment. Flooding is likely to have the biggest impact on dams, roads, bridges, structures, vehicles, water supplies, sewer systems, and food supplies that are destroyed or contaminated.
2. **Cybersecurity:** Events whether natural such as a solar electromagnetic pulse (EMP) or man-made such as hacking that bring down local computer systems. A cybersecurity event or outage can impact the ability of local governments, institutions, or major employers, including hospital systems, to function, disrupting lives and services that are based on working computer systems and connectivity.
3. **Disease outbreaks:** Local outbreaks and pandemics that overwhelm the medical system, close schools, kill or injure people, decimate animals and herds, destroy forests and crops, or reduce economic activity.
4. **Critical infrastructure disruptions**: Disruptions from any cause that impact food and water supplies, emergency services, supply chains, the ability to communicate, staffing, bridges, internet, schools, childcare, housing, power, roads, medical services, social services, or the operation of community organizations.
5. **A sudden influx of migrants/refugees/evacuees** that overwhelm local services and infrastructure, including self-evacuated individuals and families from large metro areas and immigrants with no resources.
6. **Inadequate housing:** Individuals without housing or without safe or adequate housing are more likely to need extra resources during any emergency. Safe housing is strongly associated with good health outcomes and is seen as essential for good physical and mental health. Safe housing options for all income levels are needed to prevent overcrowding, unsafe and unsanitary conditions, emergency sheltering, homelessness, and to appropriately support children, workers, seniors, and individuals with disabilities.
7. **Violence:** Violent acts, including an active shooter, civil unrest, workplace violence, or other violent acts, that spread or impact multiple individuals, communities, critical infrastructure, or essential workers.
8. **Hazardous materials:** Major hazardous spills or other leakages, especially in residential areas and along major roads, rail lines, rivers, or water supply recharge areas.
9. **Other natural disasters:** Natural disasters such as droughts, earthquakes, wildfires, or landslides could have a catastrophic effect on Western Mass. Significant forests and most of the unstable landslide areas in the state are in Western Mass, though in lower population areas than the unstable areas in eastern areas.
10. **Lack of staff:** COVID-19 has caused periodic and prolonged staffing reductions in every public and private organization. In addition, many municipal departments, including public health, have been underfunded for decades and lack adequate trained staff. These two factors together mean that mitigation strategies are challenging to implement at the same time an emergency is unfolding. Decisions about resource allocations may need rethinking at all levels.
11. **Supply chain disruptions:** Disruptions could result in rolling blackouts or lack of food, fuel, personal protective gear (PPE), essential equipment, replacement parts, etc.
12. **Regional disparities:** Due to its distance from Boston and other seats of power, as well as its lower population, Western Mass is often not prioritized for resources in extended or largescale emergencies.

13. **Lack of transportation**: Lack of transportation options in rural areas where private vehicles are necessary and make even essential medical travel challenging mean that emergency transportation will likely be a community need.

County-specific Hazards, Threats, and Vulnerabilities

In addition to the hazards and threats in common, the following are the specific risk indicators, concerns, and vulnerabilities identified through interviews and other sources for each county in Western Mass. In many cases these issues also affect more than one county but were either not mentioned in interviews or did not rise to the top during data analysis.

Berkshire County:
1. **Older population:** 24% of the population is over 65 with a median age of 46.7 years, one of the highest in Massachusetts. Some communities have a majority over 50 years old.
2. **Seasonal visitors:** A popular vacation area since the 1700s, currently with a large population of second homeowners as well as tens of thousands of seasonal visitors.
3. **Broadband and cell service gaps:** While access to high-speed Internet and cell service is growing, affordability remains an issue. Cell service remains spotty in many parts of the county.
4. **Electricity-dependent:** Over 1,000 individuals are medically dependent on equipment powered by electricity. Older adults and very young children also depend on electricity to maintain a safe temperature range both in the winter and summer.
5. **Small, rural communities** with fewer resources and higher costs per resident.
6. **Critical lack of housing** for middle income workers, older adults and lower income individuals and families.
7. **Large income disparities** between second homeowners and residents.
8. **Lack of well-organized regional coordination** of social services and public information.
9. **Distance:** Berkshire County is far from large Massachusetts cities and the seat of power and gets its TV and most of its radio news from Albany, NY instead of Boston.

Franklin County:
1. **Older population:** 24% of population is over 65 with over 4,500 seniors living alone. Seniors are used to sheltering-in-place and many may refuse to evacuate.
2. **Most rural county in MA:** Rural and remote, with many homes having no close neighbors. Franklin County is the only completely rural county in Massachusetts.
3. **Subject to flooding:** Many of the towns are situated near a body of water or in flood plains; floods can impact roads, infrastructure, homes, essential services, and more.
4. **Broadband and cell service gaps:** Access to broadband is growing, but affordability is an issue. Cell service remains spotty in hilly valleys.
5. **Ice storms:** Rural roads lined with trees and overhead power lines are easily impacted in an ice storm.
6. **Risk of wildfire, drought, extreme heat.**
7. **Toxic waste sites.**
8. **Infectious disease** can exacerbate pre-existing inequalities and disparities.

Hampshire County:
1. **Connecticut River Valley:** The river splits the county. If bridges are out, access to resources and evacuation are impacted.

2. **Five College Consortium:** The five colleges are a major employer, and there is a large population of younger residents without local roots.
3. **Potential for protests and civil unrest.**
4. **More rentals, transient populations, and housing insecurity.**
5. **Lack of coordinated public information/communications strategies.**
6. **Eastern Hampshire**: Made up of small towns whose residents are used to sheltering in place and may be unwilling to evacuate.
7. **Cybersecurity** in small towns that depend on volunteers or untrained staff.
8. **Food insecurity**: Stigma associated with food insecurity.
9. **Power hub:** Northampton is a major power hub for the county, and extensive snow/ice events can knock out power for days in nearby towns.
10. **Staffing shortages** among essential workers, whether due to illness, limited labor, or lack of funding.

Hampden County:
1. **Extreme weather events** including extreme heat or cold, wind, ice, and major river flooding which could split the county in two and disrupt critical infrastructure and supplies.
2. **Loss of power,** especially prolonged power outages greatly impact everyone, but especially individuals with medical issues and those with fewer resources and options. Lack of power in times of extreme heat or cold are especially dangerous.
3. **Cybersecurity g**aps that compromise critical infrastructure, government services, and access to essential information.
4. **Lack of staff** to provide essential services whether due to illness, limited labor pools, or lack of funding.
5. **Pandemic/disease outbreaks** which may no longer be low occurrence events. COVID-19 is the second respiratory pandemic in ten years.
6. **Hazardous spills** along major roads, rail lines, or waterways due to accidents, sabotage, lack of trained staff/maintenance, or weather events.
7. **Sudden influx** of evacuees, immigrants, or refugees with or without resources or with limited English skills or inability to read in any language.
8. **Civil unrest or active shooter** due to fear, stress, protests, riots, lack of resources, mental health issues, and other growing concerns.
9. **High violent crime rate** 1.6 times the Massachusetts average per 100,000.
10. **Large population of non-English speaking individuals** with at least 50 different languages spoken within the county.
11. **Many living in poverty** or otherwise with limited resources, including veterans, children, older adults, and those with medical, health, mobility, or cognitive difficulties.

County-specific Equity Concerns

Berkshire County
1. **Housing:** Lack of affordable, safe housing. Healthy housing is strongly associated with better health outcomes and is seen as essential for good physical and mental health. More housing options for all income levels are needed to prevent overcrowding, unsafe and unsanitary conditions, emergency sheltering needs, and homelessness, and to equitably support children, workers, seniors, and individuals with disabilities. Multiple communities cited housing as a major concern.

2. **Demographics:** 24% of the population is 65 plus. Berkshire has a population that is rapidly aging with a growing list of chronic diseases and mobility and cognitive issues that will likely require extensive support systems.
3. **Mental health:** Berkshire County has a high number of individuals with dementia, substance use disorders, and behavioral health issues that result in the need for increased social support services and can potentially contribute to civil, legal, and social disruptions; suicides; and overdose deaths.
4. **Income disparities:** Residents with lower incomes competing with wealthy second homeowners and visitors. Income disparities in a region often result in inequitable health outcomes. Substantial numbers of individuals with low incomes living next to wealthy second homeowners and visitors reduce housing options, distort local resource allocation, stress local cohesion, strain local and regional services, and contribute to a growing number of people without housing, the single most important indicator of health status. Individuals with low incomes are not able to afford basic expenses such as food, fuel, and medicines in addition to housing.
5. **Support networks:** There is a growing number of individuals living alone, single-parent households, unhoused, visitors, remote/rural, poor, and undocumented and immigrants without robust networks of family and friends or community support systems to help them in times of adversity.
6. **Electrically dependent:** Over 1,000 Medicare recipients in the county are medically dependent on electricity for medical devices. In addition, they likely also rely on electricity for heating and cooling.
7. **Communications**: Lack of access or funds for high-speed internet and cell services along with a growing number of immigrants that don't speak or read English result in increasing communication challenges for many at-risk individuals and the need for communities to learn more ways to communicate with specific groups, including the use of social media/messaging apps.
8. **Transportation and the rural remote:** Transportation, especially in an evacuation scenario, is a particular issue for those living in remote, rural areas without a reliable vehicle, those who no longer drive or live on roads that are harder to drive at night or during adverse weather.
9. **Language barriers:** Increasing number of immigrants who don't read or speak English or read in any language.
10. **High premature death rate:** Berkshire County has the highest age-adjusted premature death rate in Massachusetts. This is likely an indicator of the need for residents to travel outside the area for specialized care as well as cumulative and intersecting comorbidities in the county, including substance use disorder, mental health issues, heart disease, other chronic disease, and physical disabilities.
11. **Organized regional coordination:** lack of well organized, regional coordination structure(s) to ensure that equity issues are addressed and to reduce duplication of efforts.

Franklin County:
1. **Internet access/communications:** 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 vaccination clinics often involve Internet sign-ups—with many people in the area unable to use this feature, those vaccine doses often end up in other regions.

2. **Language barriers:** Approximately 4,403 people (6.2% of Franklin County's population) above age 5 do not speak English at home, and anyone who is not fluent in English may have trouble accessing emergency instructions or evacuation procedures when necessary.
3. **Transportation:** The county does not have an extensive public transportation system and there are many households in the county without access to a vehicle. This impacts the ability of residents to obtain medical services, including vaccination.
4. **Older adult population:** More than 24% of the population is over the age of 65, and many of them (approximately 4,582) live by themselves, so they might not have assistance in an emergency, or they might be unable to properly access information on a cellular device if they own one. Several of these individuals also live in a house entirely too large for their needs and may not be able to maintain or make repairs, which can ultimately cause safety issues.
5. **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. Mental health needs have increased for all populations over the past few years, including for both youth and older adults.
6. **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 proper resources and means, which may not be the case in a household with only one income.
7. **Food insecurity:** An emergency can cause a family to become food insecure or exacerbate their food insecurity. As mentioned in an emergency preparedness interview, a family can be close to being food insecure, and then a power outage occurs and the cold and frozen food goes bad and this is the "tipping" point that causes them to go from having some food to not having any food for their next meal.
8. **Boarding schools, group homes, and nursing homes:** These are all facilities with a lot of people residing in one space. Some may be more well prepared than others to plan for and respond to an emergency. Nursing homes are often underprepared and seen as less of a priority compared to hospitals, and though boarding schools consist of staff who are likely trained to deal with an emergency, they also consist of students who are often far away from their family/support system.
9. **Electricity-dependent:** 642 Medicare beneficiaries within the county depend on electricity for medical devices, including those using ventilators, mobility devices, CPAP machines, etc.

Hampshire County:
1. **Disabilities,** especially ambulatory. At least 17,000 individuals in the county have one or more disabilities, which can impact physical or mental ability to respond appropriately to an emergency or evacuate. The most prominent are cognitive and ambulatory difficulties.
2. **Transportation:** Many residents are older adults. Individuals with mobility disabilities, persons over 65, and those who have no way of evacuating if major routes are damaged are at greater risk and would likely require additional emergency assistance.
3. **Cell service:** There is a lack of cell service in much of Hampshire County, which can impact emergency communications, especially for those with English as a second language or older adults who may rely on landlines or in-person communications.
4. **Health, mental health, and medications:** Mental health hospitalizations and overdose concerns, which have been compounded by the pandemic and ongoing opioid crisis, are a particular problem in Northampton.

5. **People experiencing poverty:** Although most of Hampshire County's households have a reasonable median household income, there are ongoing concerns with housing insecurity, people who are rent overburdened or worried they may have to leave. There are also significant food deserts in eastern Hampshire County.
6. **Preparedness**: With thousands of colleges/students, a major river, and spotty cell service, Hampshire County has many preparedness challenges such as the potential for civil unrest near the five colleges. Many of those interviewed felt Hampshire had most of the tools necessary to respond to an emergency but there were ongoing concerns around emergency communications and adequate police staffing during times of civil unrest.
7. **Electrically dependent:** Over 1,000 Medicare clients depend on powered medical devices.
8. **Vaccination status:** Old, young, and unhoused are under-vaccinated for COVID-19.

Hampden County:
1. **Health status:** Least healthy county in Massachusetts with high premature death rates.
2. **Incomes:** High proportion of low-income individuals and households, compared to the rest of the state.
3. **Lack of home support systems** for older adults, veterans, and children.
4. **Transportation:** Lack of private transportation making evacuation or the ability to access services difficult.
5. **Crime:** High violent crime rates, 1.6 times the Massachusetts average per 100,000.
6. **Languages:** Over 50 languages spoken at home, many do not read in any language. Those who are non-English speaking may need additional support with emergency instructions or evacuation procedures.
7. **Health outcomes:** Large number of ethnic and racial minorities who may have lower health outcomes than non-Hispanic White residents.
8. **Urban vs. rural:** Large cities and towns juxtaposed next to small, rural communities creating obvious disparities, competing priorities, and reduced opportunities for regional collaborations based on shared priorities.
9. **Electricity dependent:** Over 4,500 Medicare clients depend on electricity for medical devices.
10. **Sheer numbers of individuals who have characteristics that indicate they will likely require additional assistance in emergencies,** such as limited English, limited reading, limited resources, lack of private transportation, health and medical issues, mobility issues, and many who may be subject to stigma and bias because of their racial, ethnic, religious, or gender identity.

Appendix A. Comprehensive List of Hazard/Threat Mitigation Recommendations

This section includes *all* suggested recommendations raised during research, especially from targeted interviews.

Planning:
1. **Threat assessments:** Easy to use checklists and templates for identifying threats and hazards likely to disproportionately impact certain individuals in a community along with mitigation strategies.

a. Create a Threat and Hazard Identification and Risk Assessment (THIRA) template that supports a robust, inclusive assessment process that considers equity in ranking hazards and threats and gives higher priority to threats that may put certain groups at higher risk.

b. Engage individuals who are at higher risk of threats and hazards, as well as organizations and community groups that serve these individuals, in the THIRA process to ensure that priority needs and risks are being considered.

c. Create a template and provide assistance to review existing processes and systems within a municipality or response organization to mitigate structures that exacerbate structural racism, stigma, or bias.

2. **Agreements:** Provide model agreements between organizations to provide mutual aid or emergency or support services.

a. Between schools, daycares, and other organizations with mental health and psychological and behavioral health providers.

b. Strategies and agreements for providing temporary housing in emergencies in locations such as churches, schools, camps, health clubs, recreational facilities, etc.

c. Between communities or regional agencies and social service organizations to provide emergency information to their clients.

d. Between communities and social service organizations to provide support services to a community in emergencies.

3. **Social services lists and referral trees:** Easy to use templates and checklists based on best practices for creating and maintaining lists of agencies, organizations, and community leaders in each region that work with people at higher risk of being impacted by threats.

a. Create lists of agencies and organizations that work with individuals at higher risk in an emergency, including:
    i. Homebound
    ii. People living alone
    iii. People with disabilities
    iv. Medically dependent on electricity, medications, support services
    v. Migrants, immigrants, and refugees with limited resources and language barriers
    vi. Illiterate in any language
    vii. At-risk housing, including houses in flood areas, manufactured housing subject to wind damage, houses that are not structurally sound or well insulated
    viii. Racial, ethnic, or other populations that may not trust or be tied into mainstream organizations or communication sources
    ix. Those with behavioral health issues, including mental health diagnoses, substance use disorders, or cognitive decline and dementia
    x. Low-income households, particularly those without transportation

b. Create and maintain referral trees that identify community and social service agencies and leaders in each region and the services they provide.
    i. Assist each county with creating and identifying ways to sustain lists of county organizations, agencies, and non-profits that provide equity related social services.
    ii. Develop and maintain agreements with agencies to contact their clients with emergency information.
    iii. Referral trees for various incidents should include who/how to call for help in each region and ways to keep people in safe housing for as long as possible.

   iv. Assist counties with creating groups of responders and social service agencies that meet at least quarterly with the goal of coordinating equity related services.

   v. Support regions in creating community support (community health workers/support staff, Hub models) to help responders deal with mental health, substance use disorders, housing, food, etc. to help reduce high   or repeat users of services.

4. **Regional planning:** Support sustainable regional coordination structures that systematically and regularly bring together agencies to address community equity needs to ensure access to needed services for every individual, increasing coordination and reducing silos.

  a. Foster and support regional cross-agency and cross-jurisdiction social service support collaborations.

  b. Help identify a lead agency in each county or region to coordinate and sustain these partnerships to eliminate service silos. Ideally groups should meet monthly to remain active and ready for emergencies.

  c. Work with regional planning authorities (RPA) and municipalities to ensure that equity assessments and issues are addressed in county Hazard Vulnerability Assessment (HVA) updates and other comprehensive regional plans and reports.

  d. Work with the Massachusetts Emergency Management Agency (MEMA) to ensure that plans, policies, and procedures address people and groups who are most likely impacted by current and emerging threats.

  e. Provide annexes or model plans for various hazards/emergencies that consider equity in each section of the plan.

  f. Develop a checklist for responders to use for individuals at greater risk in an emergency in each community, and strategies to consider implementing for common threats to help them prepare.

  g. Empower individuals in all racial and ethnic minority groups, as well as supportive service agencies to engage in planning for individuals at higher risk and provide the tools and training to plan for their families and communities.

  h. Update/create pre-scripted messages related to equity concerns and post to Western Region Homeland Security Advisory Council (WRHSAC) and Western Mass Health and Medical Coordinating Coalition (HMCC) webpages.

  i. Update WRHSAC's Individuals Requiring Additional Assistance (IRAA) Functional Needs Support Services (FNSS) Plan Annex and work with MEMA to integrate equity issues into Comprehensive Emergency Management Plans (CEMP) and other emergency plans such as Regional Sheltering Plans.

  j. Provide a template, for both the agency and responders, on how to evacuate a senior housing facility .

  k. Update existing plans or provide annexes for plans that demonstrate practical ways and strategies for mitigating concerns associated with bias and stigma.

   i. Universal, fair access to information and resources in each community or county.

   ii. Trusted leaders and champions in each neighborhood.

   iii. Supporting the whole person, not just treating a specific problem or issue.

   iv. Navigators and Community Health Workers in each neighborhood, community, or county.

  l. Provide guidance on using 211 to provide critical emergency information as well as guidance on setting up local helplines.

m. Provide guidance to responders, especially public health, for working with utilities before, during, and after emergencies.

n. Provide guidance for coordinating with the medical and public health systems.

o. Provide guidance and support for communities that want to explore regional shared service arrangements such as shared fire and police chiefs, ambulance services (EMS), health directors, information technology (IT) managers, town managers, and others.

5. **Engaging people who would be at higher risk in an emergency:**

a. Create or identify an easy-to-use guide for engaging various individuals and groups in planning for emergencies.

b. Engage individuals in the emergency planning process in each county to ensure that equity is effectively considered when setting priorities and response actions.

c. Work with social service agencies to identify individuals and groups to interview and the questions to ask.

d. Encourage those with disabilities, those who are medically electricity dependent, and those with other access or functional needs to register with their electric company, local fire/police, and other service and support agencies. For example, National Grid customers fill out their form and send to National Grid, PO BOX 960, Northboro, MA 01532-0960.

e. Forum questions might include:

    i. What do you think is the most important problem/threat/hazard to you, your family, your neighborhood?

    ii. How do you think we could solve it/mitigate it together?

    iii. Besides time and money, what other assistance do you think would be most effective?

    iv. How do you get information? How would it be easiest for you to get information during an emergency?

6. **Regional collaborations:** Leverage regional collaborations to address regional disparities.

a. Hold annual forums or biannual conferences for regional groups to share information and generate ideas for collaborations that will mitigate disparities and improve health and safety outcomes. Invite representatives from regional organizations and groups, such as:

    i. Regional Emergency Planning Committees

    ii. Regional Public Health Excellence Shared Service Collaborations

    iii. Regional Public Health Emergency Preparedness Coalitions

    iv. Western Mass and/or County Fire Chiefs

    v. Western Mass and/or County Police Chiefs

    vi. Western Mass and/or County EMS

    vii. Western Mass Tech Rescue Teams

    viii. Western Mass Hazmat Teams

    ix. Western Mass Health and Medical Coordinating Coalition (HMCC)

    x. Western Mass Regional Planning Authorities

    xi. Western Mass Food Bank

    xii. Western Mass United Ways

    xiii. Western Mass MEMA

    xiv. Western Mass Councils on Aging

    xv. Western Mass Council of Churches

    xvi. Western Mass Chambers of Commerce/Business Groups

    xvii. Western Mass County Sheriff's Departments

xviii.   Western Mass Community Organizations Active in Disasters (COAD)

xix.   Western Mass Medical Reserve Corps (MRC) Units

xx.   Community Emergency Response Teams (CERT)

b. Consider supporting a pilot project around hiring a regional Diversity, Equity, and Inclusion (DEI) planner for each county.

Trainings and Exercises:
1. Partner with town officials and the Mass Municipal Association (MMA) to develop trainings and partnerships to address equity issues in each community and region.
2. Provide diversity, equity, and inclusion (DEI) training and tools to EMDs, EMS, fire, police, and public health personnel to make them more culturally competent and aware of the needs of various groups.
3. Create or identify short videos to teach Adult and Pediatric Behavioral/Mental Health First Aid to be used before, during, and after a disaster to help communities address the significant issues caused by trauma, stress, and inequities.
4. More training and recruitment for Community Emergency Response Teams (CERT) and Medical Reserve Corps (MRC) units, especially around equity issues and communities with limited access to services.
5. After planning, outreach, and education, exercise the use and coordination of MA 211, 988, other existing emergency helplines, outgoing 911 (Code Red, Reverse 911, and similar), and local or municipal email networks to distribute emergency information. Evaluate how effectively the messages were coordinated and whether information reached individuals with functional or access needs and those who have hearing, sight, or cognitive difficulty.
6. Exercise and practice emergency response information sharing and coordination among public safety, medical providers, and public health at least annually.
7. Provide training on the emergency broadcast system options.
8. Regularly schedule mentor trainings/workshops and assistance on completing and updating emergency plans.

Education and Outreach:
1. Educate the public on ways to prepare for things like power disruptions for those who are power dependent, when to call 911, how to use 211 and 988, where to find help, etc.
2. Encourage those with disabilities or dependent on electricity-powered medical equipment to register with their electric company, local fire/police, and other service and support agencies.
3. Educate residents on roles and responsibilities regarding emergencies, when to call for an ambulance, where to get help/services, how to prepare for emergencies.
4. Develop online and other workshops to prepare the public for different emergencies.
5. Hold regional forums/conferences on regional disparities in emergencies and strategies for mitigating equity concerns.
6. Educate residents, especially those at higher risk to threats and hazards, on what emergency plans and supplies to have in their home, and how to pack a to-go bag. Assist with building emergency kits for those who lack financial resources.
7. Use existing resources to develop connections with vulnerable and at-risk individuals. For example, ask public health nurses to reach out to the homebound and provide them with information about connecting to emergency services before, during and after an event.
8. Consider fundraising for an Emergency Reserve Fund to provide emergency resources directly to individuals during emergencies such as emergency fuel, air conditioners, fans, food, rental assistance, etc. that will keep people safe, in their homes, and out of shelters.

Infrastructure:
1. Support the creation of public access points for accessible Internet and cell services with recharging stations.
2. Provide strategies for short-term and emergency housing while long-term strategies are implemented.

Resources:
1. Provide resource lists for services and assistance for food, fuel, housing, medical care, homecare, etc.
2. Suggest which agencies could host these lists of services and where they could be posted.
3. Tools and equipment requested by municipalities and responders:
   - Shower trailers for shelters without adequate showers
   - Laundry trailers for shelters without adequate laundry
   - Generator trailers
   - Sandbags
   - Washable blankets and pillowcases
   - Portable cell towers
   - Solar batteries for medical equipment in homes affected by power disruptions
   - Over-the-counter hearing aids and reading glasses
   - Female CPR manikins to ensure people are comfortable providing CPR on a female
   - Narcan kits
   - Power strips for recharging equipment

Appendix B. Research Considerations

This section includes factors and conditions which contribute to inequities. Some are functional and access factors and others are associated with stigma, bias, or racism.

1. Age, both young and old
2. Chronic health conditions
3. Income/resources and income disparities
4. Education levels
5. Ability to speak and read English
6. Housing status
7. Transportation options
8. Social and family networks/support
9. Individuals living alone
10. Single parent households
11. Flooding risks
12. Stigma and bias based on race, ethnicity, gender identity, gender expression, sexual orientation, religious affiliation, disability, and other group affiliations
13. Structural and systemic racism where it exists in hiring, housing, medical care, etc.
14. Substance use disorders
15. Disabilities
16. Mental health issues
17. Crime rates
17. Employment

18. Civic engagement, inactive voters, number of civic organizations
19. Smartphones/Internet savvy, Internet/cell services
20. Hospital and provider access
21. Living in congregate care
22. Local community resources/services
23. Immigration status
24. Incarceration history

Appendix C. Interviews for Qualitative Data

Targeted Interviews
1. Hospitals
2. Emergency Management Directors (EMDs)
3. Ambulance/Emergency Medical Services (EMS)
4. Fire
5. Police
6. Public Health/Boards of Health (BOH)
7. Town Manager/Administrator

Interview Questions:
1. What emergencies/threats/hazards do you worry about in your community, job, role?
2. What would make you less worried?
3. What vulnerable/at risk populations do you worry the most about in emergencies?
4. What would make you less worried about helping these vulnerable or marginalized individuals?
5. What help do you wish someone would give you to better help vulnerable individuals?
6. What else would you like us to know about your vulnerable populations, equity issues in emergencies, or your preparations for emergencies?
7. Who else should we be talking to?
8. Is there anything else you would like us to document?

Appendix D. Research Data and Sources

The number of data sources related to equity is large and growing as many agencies recognize the importance of stigma, bias, and the experience of systemic racism in all aspects of our lives. The following are selected data that was used to better understand and identify those in our communities who may need extra or different assistance in an emergency and identify ways to provide everyone equitable access to information, resources, and services in emergencies. Links are provided to the data sources. Copies of maps and charts are to provide context to the findings in the first section of this report.

Figure 1. CDC Social Vulnerability Index by Census Tract

Source: CDC/ATSDR Social Vulnerability Index (SVI) - Place and Health | ATSDR

The Centers for Disease Control and Prevention has created a Social Vulnerability Index that can be used to compare regions. Social vulnerability refers to the potential negative effects on communities caused by external stresses on human health. Such stresses include natural or human-caused disasters and disease outbreaks. Reducing social vulnerability can decrease both human suffering and economic loss.
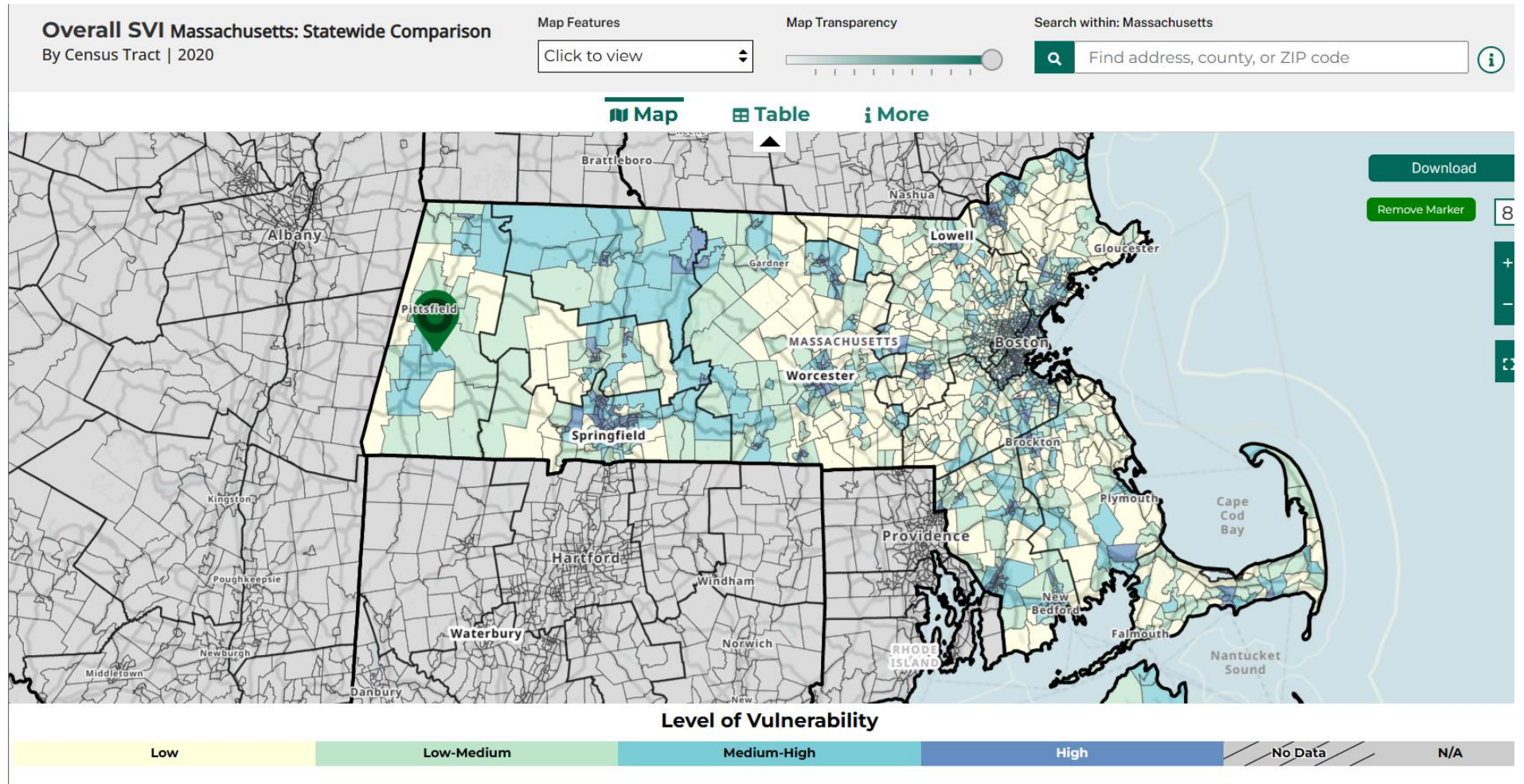
Figure 2. Selected Research Data: Population Characteristics Contributing to Inequities in Emergencies

Source: WMHMCC 2019/2020, W MA HMCC Hazard Vulnerability Assessment June 2022 – Western MA Health and Medical Coordinating Coalition (region1hmcc.org)

	Population	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
Berkshire	129,028	1,895	1%	13,063	10%	2,355	2%	9,949	8%	538	0.4%	10,392	8%	9,188	7%
Franklin	71,029	990	1%	6,730	9%	1,012	1%	4,358	6%	150	0.2%	6,435	9%	4,457	6%
Hampshire	162,308	2,162	1%	16,800	10%	1,494	1%	7,245	4%	391	0.2%	9,634	6%	7,412	5%
Hampden	465,825	8,287	2%	17,850	4%	74,362	16%	23,572	5%	7,557	1.6%	36,583	8%	36,478	8%
Western MA Totals	**828,190**	**13,334**	**2%**	**54,443**	**7%**	**79,223**	**10%**	**45,124**	**5%**	**8,636**	**1%**	**63,044**	**8%**	**57,535**	**7%**

	Population	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
Berkshire	129,028	2,929	2%	3,136	2%	7,159	6%	7,832	6%	5,414	4%	9,100	7%
Franklin	71,029	1,241	2%	1,975	3%	3,488	5%	4,490	6%	3,176	4%	4,807	7%
Hampshire	162,308	2,292	1%	3,187	2%	6,087	4%	6,444	4%	4,577	3%	7,453	5%
Hampden	465,825	11,973	3%	17,602	4%	29,341	6%	30,982	7%	16,038	3%	37,340	8%
WM Totals	**828,190**	**18,435**	**2%**	**25,900**	**3%**	**46,075**	**6%**	**49,748**	**6%**	**29,205**	**4%**	**58,700**	**7%**

Indicator Description for Above Charts:

Populations with no vehicle available: Lack of car ownership can present a challenge to accessing amenities and healthcare and evacuating during emergencies. Vehicle ownership tends to be lowest in urban areas, especially among individuals with lower income. In the event that an evacuation is required, individuals with no vehicle may be stranded in place, particularly if public transportation options are not available or temporarily down. Rural individuals with no vehicle may be even more vulnerable due to increased isolation and less transportation infrastructure. Shelters or other emergency response sites may be farther from residents in rural locations, making lack of a vehicle more problematic. Planners should consider alternate transportation options (e.g. use of school buses) to ensure those without vehicles can safely access shelters and other resources. Indicator based on data from Table B08014 from the 5-year 2015-2019 American Community Survey conducted by the U.S. Census Bureau.

Poverty: Poor households are more susceptible to the effects of emergencies due to many social and physical factors. Low-income persons or families without reliable access to healthcare can make them less resilient to changes in health status. They are also generally less likely to own vehicles, which can affect their ability to evacuate. Low-income persons or families are less able to absorb the financial impacts of being out of work for a period of time due to a disaster. Indicator based on data from table B17001 from the 5-year 2015-2019 American Community Survey conducted by the U.S. Census Bureau.

Less than 9th grade education: People who do not have a high school education may be more vulnerable in emergencies. This may partly be because individuals with less education often have limited material resources, lower social and political capital, and exhibit more adverse health-related behaviors (e.g. smoking) compared to individuals with more education. In general, less education is associated with poorer health outcomes (e.g. higher rates of infectious disease and lower life expectancy). Health and emergency officials should use clear communications during emergencies to accommodate lower reading levels. Indicator based on data from Table B15003 from the 5-year 2015-2019 American Community Survey conducted by the U.S. Census Bureau.

Age: Certain age groups, the elderly and the very young, are more at risk to adverse health outcomes than others. Older and younger populations often rely on caregivers to help prepare for and respond to an emergency. These populations are less adaptable in the event of an emergency for many reasons including reliance on routine, susceptibility to illness, and reduced mobility. Indicator based on data from table B01001 from the 5-year 2015-2019 American Community Survey conducted by the U.S. Census Bureau.

Populations 65 years or older, living alone: Living alone can exacerbate age-related vulnerabilities experienced by the elderly, particularly in emergency situations. Elderly persons are more likely to have chronic diseases, conditions, and physical or cognitive disabilities (e.g. dementia). Living alone can result in social isolation, which may result in decreased access to emergency-related communications. This population may be less willing or able to leave home or seek shelter. Planners should attempt to identify where elderly community members live to ensure this population receives needed resources.

Language spoken/no English spoken: Non-English-speaking people and those who have limited ability to read, write, or understand English may be vulnerable in an emergency. Individuals with limited English proficiency (LEP) experience inequalities that can prevent access to health insurance and care, resulting in health disparities. Language barriers can even arise between people who speak the same language, so translation services must therefore be sensitive to colloquialisms, dialects, and regional differences. These barriers can increase risk of nonadherence to medication or create stress for those receiving care. LEP is a source of social isolation, which may limit situational awareness. People with LEP may engage in daily activities differently from those fluent in English

(e.g. using visual symbols and memory to navigate public transit routes). They may not understand the role or presence of police and other law enforcement officers, and they might not understand instructions. Many non-English speakers rely on word-of-mouth or community/faith-based organizations for communication updates. Identifying primary languages within a service area is essential for communicating emergencies and available resources, and identifying organizational needs (e.g. translation and interpretive services) to ensure that those that have LEP remain safe and prepared for emergencies and receive quality care and access to resources. Indicator based on data from table B16007 from the 5-year 2015-2019 American Community Survey conducted by the U.S. Census Bureau.

Populations with disabilities: Disability is an umbrella term that refers to a diverse group of people who live with significant limitations to function, movement, or activity. People with disabilities have experienced a long history of discrimination and institutionalization that contributes to health disparities observed today. People with disabilities are more likely to have chronic diseases and conditions such as diabetes, cardiovascular disease, and hypertension. They may also rely on caregivers, which can be socially isolating and increases vulnerability. It is important to identify the type of disabilities common in a service area to ensure that the needs of people with disabilities are met during an emergency. Indicator based on data from Table B18108 from the 5-year 2015-2019 American Community Survey conducted by the U.S. Census Bureau.

Types of disability: The term disability encompasses a broad range of limitations and health statuses that include: ▪ Hearing difficulty: deaf or having serious difficulty hearing (DEAR). ▪ Vision difficulty: blind or having serious difficulty seeing, even when wearing glasses (DEYE). ▪ Cognitive difficulty: physical, mental, or emotional problem that leads to difficulty remembering, concentrating, or making decisions (DREM). ▪ Ambulatory difficulty: having serious difficulty walking or climbing stairs (DPHY). ▪ Self-care difficulty: having difficulty bathing or dressing (DDRS). ▪ Independent living difficulty: physical, mental, or emotional problem that leads to difficulty doing errands alone such as visiting a doctor's office or shopping (DOUT). Indicator based on data from Tables B18102 - B18107 from the 5-year 2015-2019 American Community Survey conducted by the U.S. Census Bureau. Percent of population is calculated using the total number of people for that disability type.

Race/Ethnicity: Stemming from a long history of inequality, racial minority populations are more vulnerable to adverse health outcomes than the majority-white population. Social and physical factors such as lack of economic resources, cultural barriers, and housing conditions can contribute to health status, emergency preparedness, and disaster recovery. For example, minority groups concentrated in urban areas may be more susceptible to heat illnesses because they live in older housing that is poorly insulated or may lack financial means to own or operate air-conditioning equipment. Targeted communications through social networks or community and faith-based organizations may be more effective than conventional communication methods. Indicator based on data from tables B02001 and B03002 from the 5-year 2015-2019 American Community Survey conducted by the U.S. Census Bureau.

Threats and Hazard Vulnerability Assessments

The 2018 State Hazard Mitigation and Climate Adaptation Plan focuses on natural hazards and climate change and doesn't address pandemics, novel diseases, cybersecurity, civil unrest, and other emerging threats which might not be as frequent but can be equally catastrophic. Mitigation efforts that include needed system and policy changes are sometimes harder to change than physical infrastructure hardening.

In the past, the Western Region Homeland Security Advisory Council (WRHSAC), the Public Health Emergency Preparedness Coalition (PHEP), and the Massachusetts Emergency Management Agency (MEMA) have conducted Hazard Vulnerability Assessments (HVA) and Threat and Hazard Identification Risk Assessments (THIRA) to list the most likely threats and how likely they are to occur in an area. With the prominence of the COVID-19 pandemic, climate change, and the rising risk of cybersecurity issues, these assessments likely need updating.

Local and regional emergency planning committees have updated hazard vulnerability and climate change assessments. Many recognize the increasing risks from extreme and more frequent weather events. Cybersecurity is also often recognized as a substantial risk. We now realize that pandemic diseases should be on everyone's list of high consequence hazards that may be more frequent than we used to think. H1N1 was only 10 years ago, and we are still dealing with COVID-19 that continues to mutate and evade our vaccines and results in a substantial number of lingering, long-lasting symptoms that reduce quality of life for millions.

Figure 3. Hazard Identification and Risk Assessment (HIRA) Hazards

Source: MA Comprehensive Emergency Management Plan (mass.gov)

Natural Hazards	Deliberate Acts	Technological Hazards
Severe Winter Storm/Nor'easter	Cyber Incident	Infrastructure Failure
Inland Flooding		
Coastal Flooding	Terrorism	
Other Severe Weather		
Hurricane/Tropical Storm	Civil Unrest	Nuclear Power Plant Event
Coastal Erosion		Hazard Material Accident/Spills
Tornado		Major Air Crash
Extreme Temperatures		Dam Failure
Invasive Species		
Earthquake	Chemical, Biological, Radiological, and Nuclear (CBRN) Incident	
Wildfire		
Drought		
Landslide		
Tsunami		
Public Health Emergency		

Organized by highest frequency (estimated)

Figure 4. FEMA's Community Resilience Indicators

Source: Resilience Analysis and Planning Tool (RAPT) (arcgis.com)

The higher the Resilience Index number, the lower the relative risk in a community. With the risk factors listed, the higher the number, the higher the risk. The Risk Index score is based on three components: Social Vulnerability, Community Resilience, and EAL, with EAL based on Exposure,

Annualized Frequency, and Historic Loss Ratio (HLR) factors, for a total of five risk factors. Each risk factor contributes to either the likelihood or consequence aspect of risk and can be classified as one of two risk types: risk based on geographic location or risk based on the nature and historical occurrences of natural hazards.

orange = population characteristics yellow = healthcare green = economic blue = housing purple = connection to community pink = household characteristics	Berkshire, MA **County Population:** 125,927	Franklin, MA **County Population:** 70,529	Hampshire, MA **County Population:** 161,361	Hampden, MA **County Population:** 466,647
FEMA Community Resilience Index	*0.14*	*0.10*	*0.26*	*-0.11*
Percent Age 65 and Over	23.25%	21.98%	17.27%	16.91%
Percent with a Disability	15.46%	16.30%	11.10%	16.11%
Percent without HS Diploma	7.14%	6.56%	4.91%	14.21%
Percent Unemployed Labor Force	5.14%	5.42%	5.62%	6.20%
Percent without Health Insurance	2.57%	2.38%	2.42%	3.04%
Percent HH with Limited English	0.65%	1.11%	1.64%	7.57%
Median HH Income	$62,166.00	$61,198.00	$73,518.00	$57,623.00
Percent Mobile Homes Relative to Housing	2.00%	2.12%	1.22%	1.49%
Percent Owner-Occupied Housing	55.47%	62.22%	63.12%	57.43%
Percent Single Parent HH	27.37%	26.41%	23.28%	36.36%
Percent HH without a Vehicle	9.09%	7.80%	7.63%	13.10%
Income Inequality (Gini Index)	46.04	44.52	46.14	47.31
Percent without Religious Affiliation	0.49%	0.65%	0.58%	0.40%
Number of Health Practitioners per 1,000 People	25.67	22.47	28.38	20.00
Social/Civic Organizations per 10,000 People	1.75	1.84	1.43	1.29
Number of Hospitals per 10,000 People	0.00	0.00	0.00	0.11
Percent Unemployed Women in Labor Force	3.74%	5.39%	5.20%	5.75%
Percent Workforce Employed in Predominant Sector	32.91%	33.82%	40.54%	30.05%
Percent Inactive Voters	7.35%	7.35%	7.35%	7.35%
Percent Living Below Poverty Level	9.73%	10.49%	10.62%	15.73%

Percent HH without a Smart Phone	25.24%	26.51%	18.42%	22.65%

MEMA Landslide Hazard Maps

Source: Massachusetts State Hazard Mitigation and Climate Adaptation Plan (mass.gov)
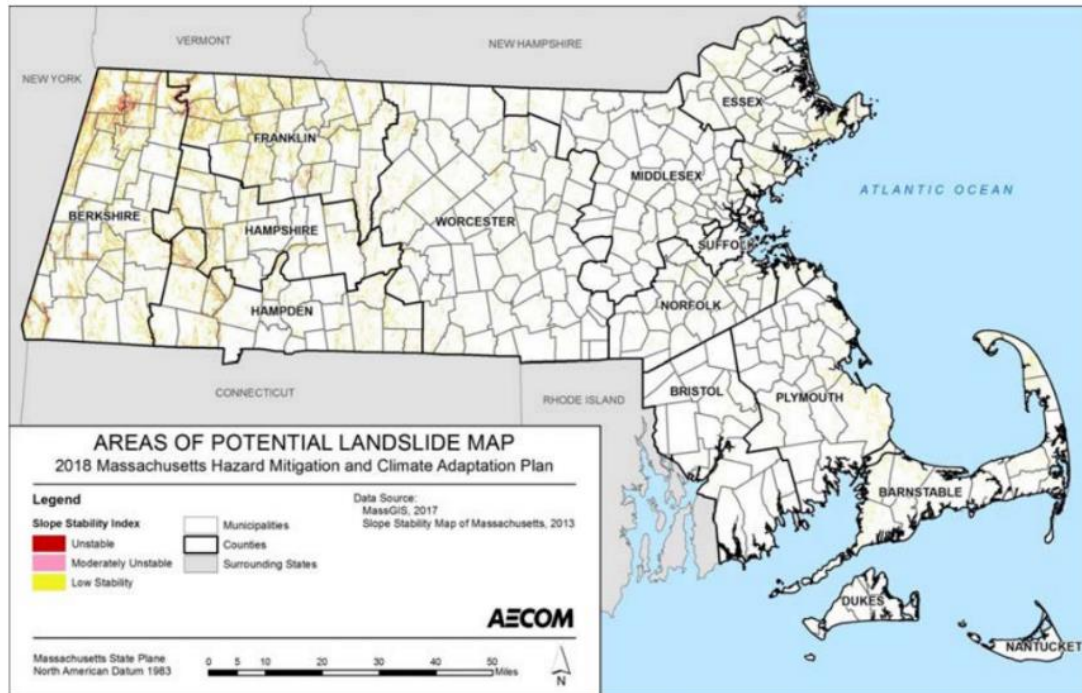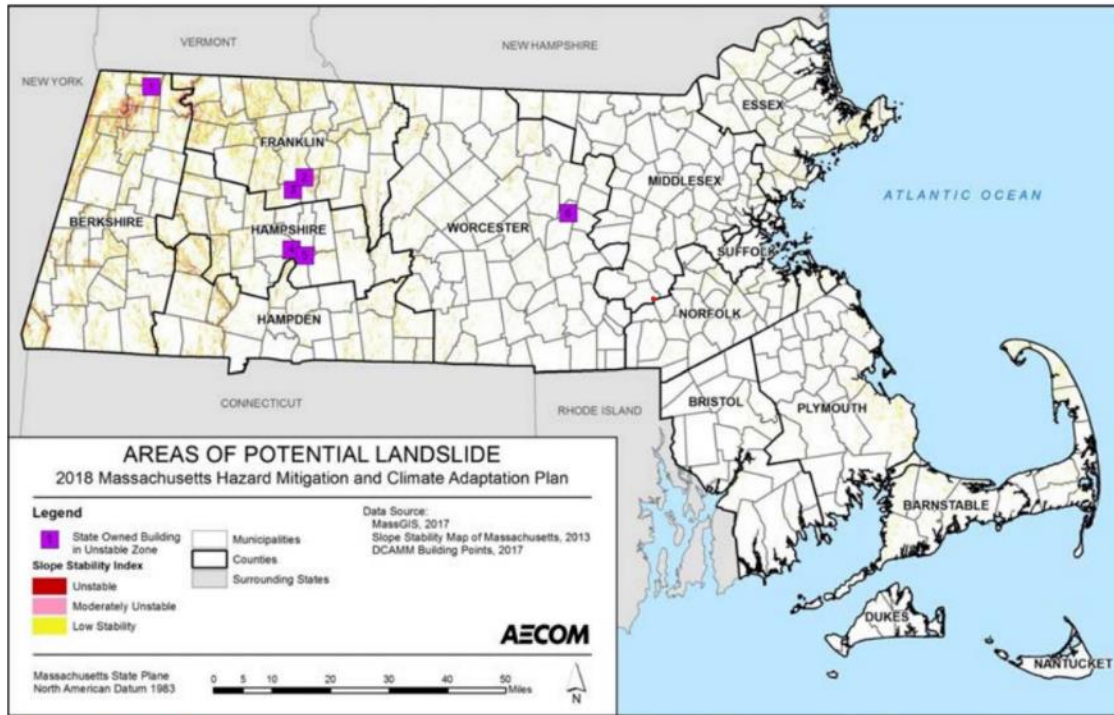
Figure 5. Slope Stability Map

Figure 6. Overview of State-Owned Buildings in Unstable Zones

Source: DCAMM, 2017 (facility inventory)

Figure 7. Map of Municipal Vulnerability Preparedness Communities

Source: Massachusetts State Hazard Mitigation and Climate Adaptation Plan (mass.gov)
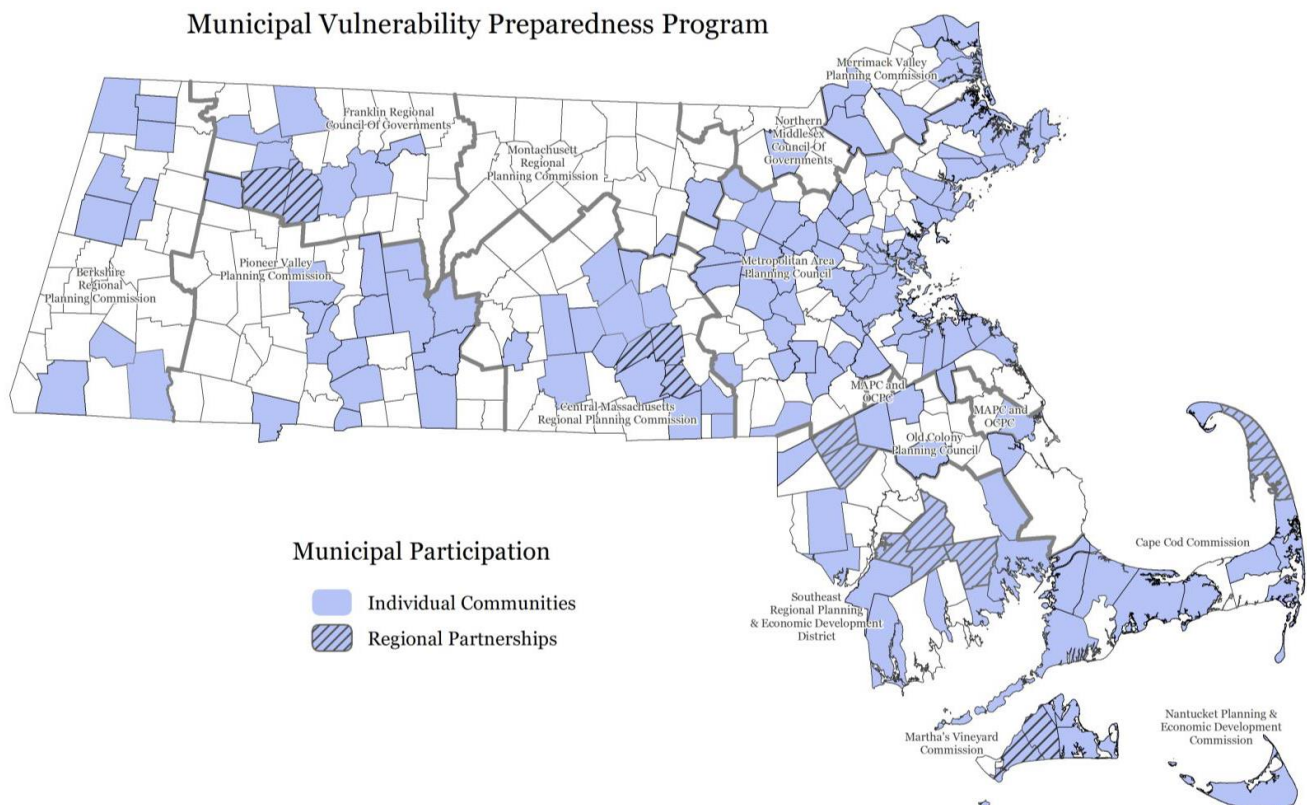
Figure 8. 2013 Hazard Assessment—Hazards of Greatest Concern

Source: Commonwealth of MA 2013 State Hazard Mitigation Plan (mass.gov)

Hazard	Frequency[b]	Likely Level	Potential Worst-Case	Area of Impact	Area of Occurrence
Natural Hazards					
Flood (including Ice Jam)	High	Serious	Catastrophic	Regional	Statewide
Dam Failure	Very low	Extensive	Catastrophic	Local	Regional
Coastal Hazards	High	Serious	Extensive	Regional	Regional
Hurricane/ Tropical Storm	Medium	Serious	Catastrophic	Widespread	Statewide
Nor'easter	High	Minor	Extensive	Widespread	Statewide
Earthquake	Very low	Serious	Catastrophic	Regional	Statewide
Landslide	Low	Minor	Extensive	Local	Statewide
Snow & Blizzard (Severe Winter Weather)	High	Minor	Extensive	Widespread	Statewide
Ice Storm (Severe Winter Weather)	Medium	Minor	Extensive	Regional	Statewide
Wildland Fire	Medium	Minor	Extensive	Local	Regional
Major Urban Fires	Low	Minor	Serious	Isolated	Statewide
Thunderstorm (Severe Weather)	High	Minor	Extensive	Regional	Statewide
High Wind (Severe Weather)	High	Minor	Extensive	Regional	Statewide
Tornado (Severe Weather)	Medium	Serious	Extensive	Local	Statewide
Drought (Severe Weather)	Low	Minor	Serious	Widespread	Statewide
Extreme Temperature (Severe Weather)	Medium	Minor	Serious	Widespread	Statewide
Tsunami	Very low	Extensive	Catastrophic	Widespread	Regional
Non-Natural Hazards of Concern – Not profiled in SHMP but data are available in Annex 1					
Public Health Hazard (epidemic or pandemic)		Extensive	Catastrophic	Widespread	Widespread
Blackout		Minor	Extensive	Widespread	Widespread
Bridge Failure		Minor	Extensive	Local	Regional
Commodity Shortage		Serious	Extensive	Widespread	Widespread
Nuclear Power Station Radiological Release		Serious	Catastrophic	Widespread	Regional
Transportation Accident		Minor	Serious	Isolated	Statewide
Terrorist Related Risk - Not profiled in SHMP - Privileged data					
Active Shooter		Minor	Serious	Isolated	Statewide
Biological Weapon		Serious	Extensive	Local	Statewide
Chemical Weapon		Serious	Extensive	Local	Statewide
Cyber Attack - Data		Serious	Extensive	Widespread	Statewide
Cyber Attack – Infrastructure		Serious	Extensive	Widespread	Statewide
Explosive Device (improvised or vehicle-borne)		Serious	Catastrophic	Widespread	Statewide
Radiological Device		Extensive	Catastrophic	Local	Statewide

a. Two severity ratings were assigned for each hazard: A likely level used in the risk assessment, and a potential worst-case defined for consideration in developing the THIRA and mitigation goals and actions.
b. Frequency analysis is not included for non-natural hazards; the criteria are specific for natural hazard frequency and are not transferable. See Annex 1 for details on the non-hazards.

- Area of Impact (extent of impact on any locality for a particular event):

Flooding

People settle in flood plains to be near water for transportation, farming, recreation, and easier construction. The federal flood map below show data for Berkshire, Hampden, and Hampshire Counties. (Note no data available for Franklin County)

29

Figure 9. FEMA Flood Hazard Areas in the Commonwealth of Massachusetts

Source: Massachusetts State Hazard Mitigation and Climate Adaptation Plan (mass.gov)

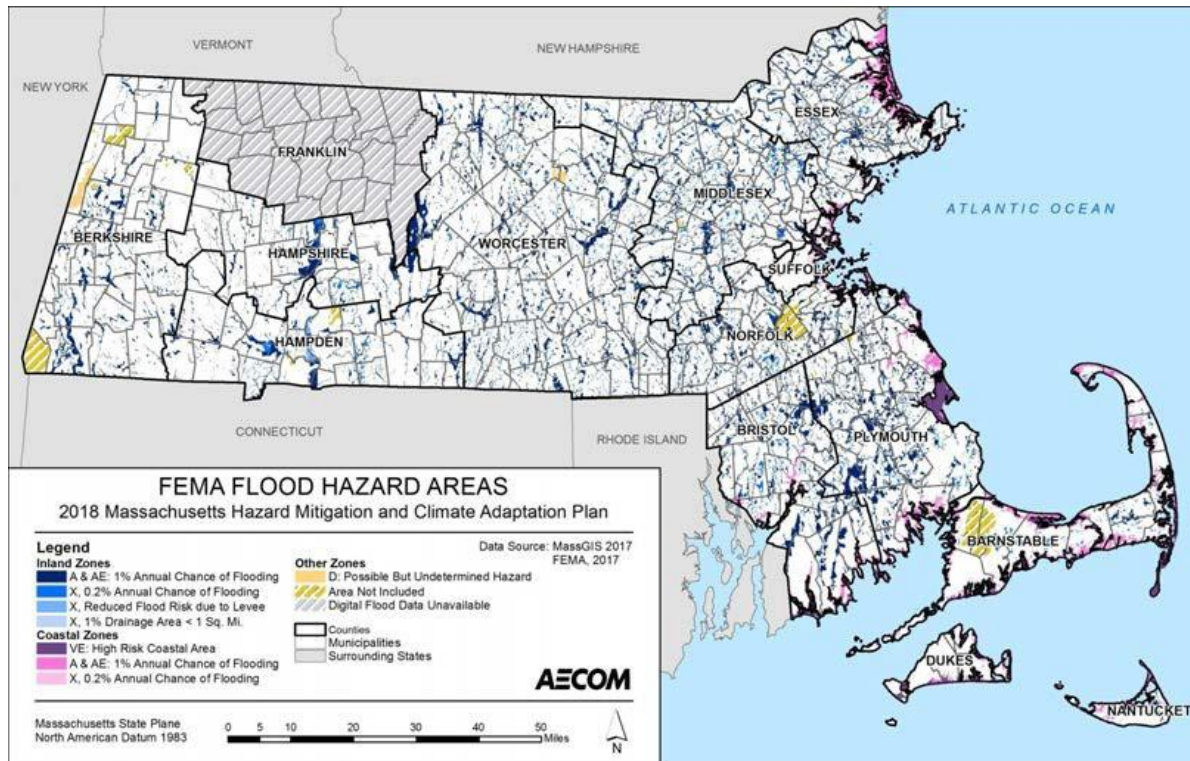**Figure 10. Changes and Heat Vulnerability Indicators**

Source: Massachusetts State Hazard Mitigation and Climate Adaptation Plan (mass.gov)

County	Estimated Increase in Average Temperature by 2100 (°F)	General Vulnerability Indicators			Heat Vulnerability Indicators			
		Proportion of Population Aged 65 or Older	Proportion of Population Aged Younger than 5 Years	Proportion of the Population Living Below Poverty Level	Rate of Emergency Room Visits for Heat Stress (per 10,000 residents)	Rate of Hospital Admissions for Heart Attacks (per 10,000 residents)	Rate of Emergency Department Visits for Asthma per 10,000 Residents	Rate of Emergency Department visits for Asthma for Children under age 15 per 10,000 Residents
Barnstable	+6.6°	25%	4%	9%	0.07	3.51	89.1	82.8
Berkshire	+8.3°	19%	5%	13%	0.07	4.39	90.7	82.5
Bristol	+6.5°	14%	6%	13%	0.12	4.41	88.1	97.6
Dukes	+6.9°	16%	5%	12%	NS	3.08	118.9	151.3
Essex	+6.6°	14%	6%	11%	0.10	3.76	76.0	107.7
Franklin	+5.6°	17%	5%	15%	0.13	4.29	68.5	83.7
Hampden	+6.4°	6%	6%	17%	0.11	4.25	120.3	164.8
Hampshire	+7.5°	5%	4%	15%	0.12	3.96	48.0	69.1
Middlesex	+6.2°	13%	6%	8%	0.11	3.56	49.6	76.9
Nantucket	+7°	12%	7%	12%	—	2.84	125.6	155.2
Norfolk	+6.7°	15%	6%	7%	0.10	3.85	48.6	79.0
Plymouth	+6.2°	14%	6%	8%	0.14	4.71	70.8	87.1
Suffolk	+6°	10%	5%	21%	0.16	3.38	122.3	241.7
Worcester	+6.6°	13%	6%	12%	0.09	4.13	76.7	120.4

Sources: U.S. Census Fact Finder n.d.; Massachusetts Environmental Public Health Tracking n.d.; NS = suppressed (number of cases or rate is below reporting threshold)

Environmental Justice Areas in Western Massachusetts

Source: Massachusetts 2020 Environmental Justice Populations (arcgis.com)
Environmental Justice Populations (see: https://mass.gov/dph/ej-tool)

Environmental justice populations are those segments of the population that the Executive Office of Energy and Environmental Affairs (EEA) has determined to be most at risk of being unaware of or unable to participate in environmental decision-making or to gain access to state environmental resources. They are defined as neighborhoods (U.S. Census Bureau census block groups or for health data, census tract levels) that meet one or more of the following criteria: • The median annual household income is at or below 65 percent of the statewide median income for Massachusetts; or • 25 percent of the residents are minority; or • 25 percent of the residents are lacking English language proficiency; or • Childhood cancer/lead poisoning or asthma rates are statistically significantly higher than the statewide averages.

Figure 11. Electricity-Dependent Medicare Beneficiaries by County

Source: HHS emPOWER Map

Geographic Area	Medicare Beneficiaries	Electricity-Dependent Medicare Beneficiaries
Berkshire	36,067	1,014
Franklin	19,657	631
Hampden	104,173	4,528
Hampshire	36,741	1,000

Health Outcomes by Race and Ethnicity

This report acknowledges that many indicators are primarily due to the oppression and systemic racism that POC and particularly Black individuals in our communities have been subjected to for centuries. These systems have specifically led to poorer health outcomes, vast economic disparities, lack of educational opportunities and fair pay practices, to name a few.

"The data show that racial and ethnic minority groups, throughout the United States, experience higher rates of illness and death across a wide range of health conditions, including diabetes, hypertension, obesity, asthma, and heart disease, when compared to their White counterparts. Additionally, the life expectancy of non-Hispanic/Black Americans is four years lower than that of White Americans. Black and Hispanic individuals are more likely than their White counterparts to have babies with low birth weight, become parents as teenagers, have children living in poverty, be hospitalized, skip preventative care, be evicted, and earn lower incomes.

Source: Minority Health and Health Equity: Racism and Health | CDC
(Compare Counties in Massachusetts - Berkshire vs. Franklin | County Health Rankings & Roadmaps)

Political Trust in Authority Varies by Race

Trust in authority varies over time by race and other factors related to the US political climate. For example, during Obama's administration there was a high recorded level of Black trust in the political system.

Figure 12. Vaccination Rates by Race/Ethnicity in Western MA, as of 2/16/23

	American Indian/Alaska Native	Asian	Black	Hispanic/Latino(a)	Multi	Native Hawaiian/Pacific Islander	White	Total**
Berkshire	54%	72%	64%	63%	41%	*	77%	76%
Franklin	51%	85%	66%	57%	35%	*	77%	77%
Hampden	58%	71%	61%	51%	56%	>95%	71%	69%
Hampshire	49%	52%	53%	50%	44%	>95%	76%	73%
Massachusetts	53%	79%	76%	68%	67%	>95%	79%	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 3-4% 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 – February 15, 2023 https://www.mass.gov/info-details/massachusetts-covid-19-vaccination-data-and-updates

Cell Service

Unlike most of Massachusetts, cell phone coverage in Berkshire's deep valleys and remote areas is very spotty. Coverage maps don't really tell the story of usable services, especially in emergencies when cell service may be out or overwhelmed. Many people now rely on Wi-Fi-based calling at home, though these services are also spotty in rural or remote areas.

The map below is from an interactive site where users can see coverage for various cell service providers. This screen capture specifically shows T Mobile coverage, and while the state is generally well-covered, there are patches of spotty areas, especially directly east of Pittsfield.

Figure 13. Cell Service Coverage Information

Source: Best Cell Phone Coverage in Massachusetts | WhistleOut

32
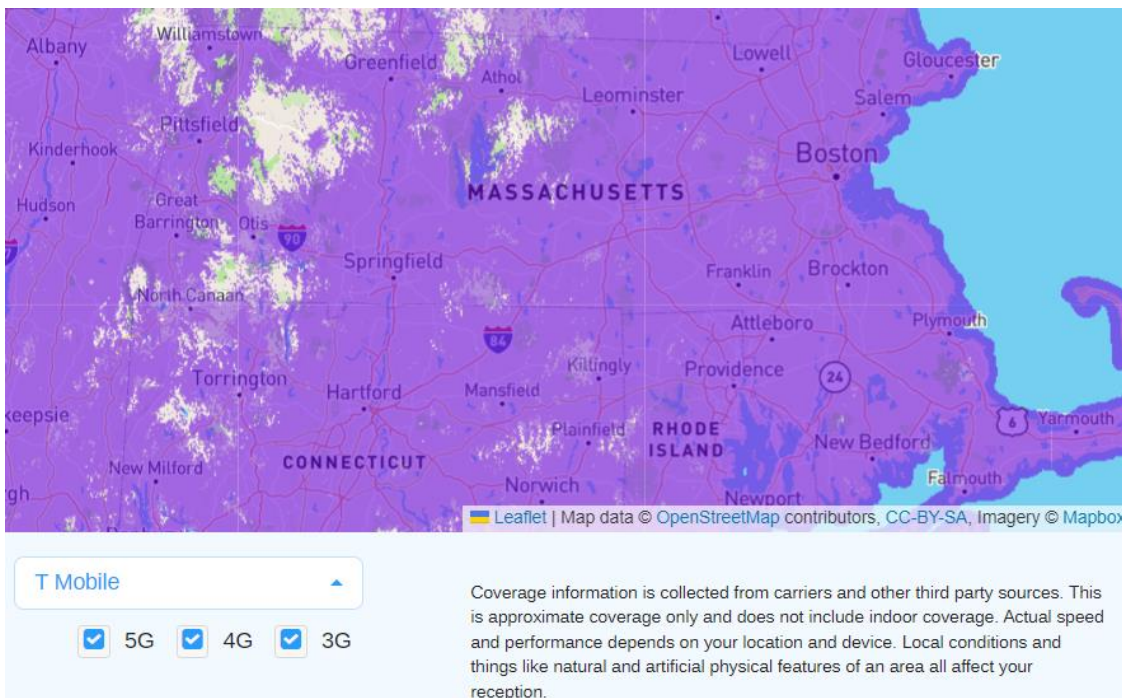
Internet Service

While many areas in Western Mass have joined the Wired West initiative to bring fiber and cable to every community, many areas remain underserved by Internet providers, especially in rural areas often referred to has the "hill towns." Monthly fees are also a barrier. Lack of services and high costs limit the ability of many to access Internet-based services, attend remote meetings, or get information in real-time.

Figure 14. Cable Internet Availability in Western Massachusetts

Source: Cable Internet Availability with Speed and Coverage Analysis | BestNeighborhoods.org
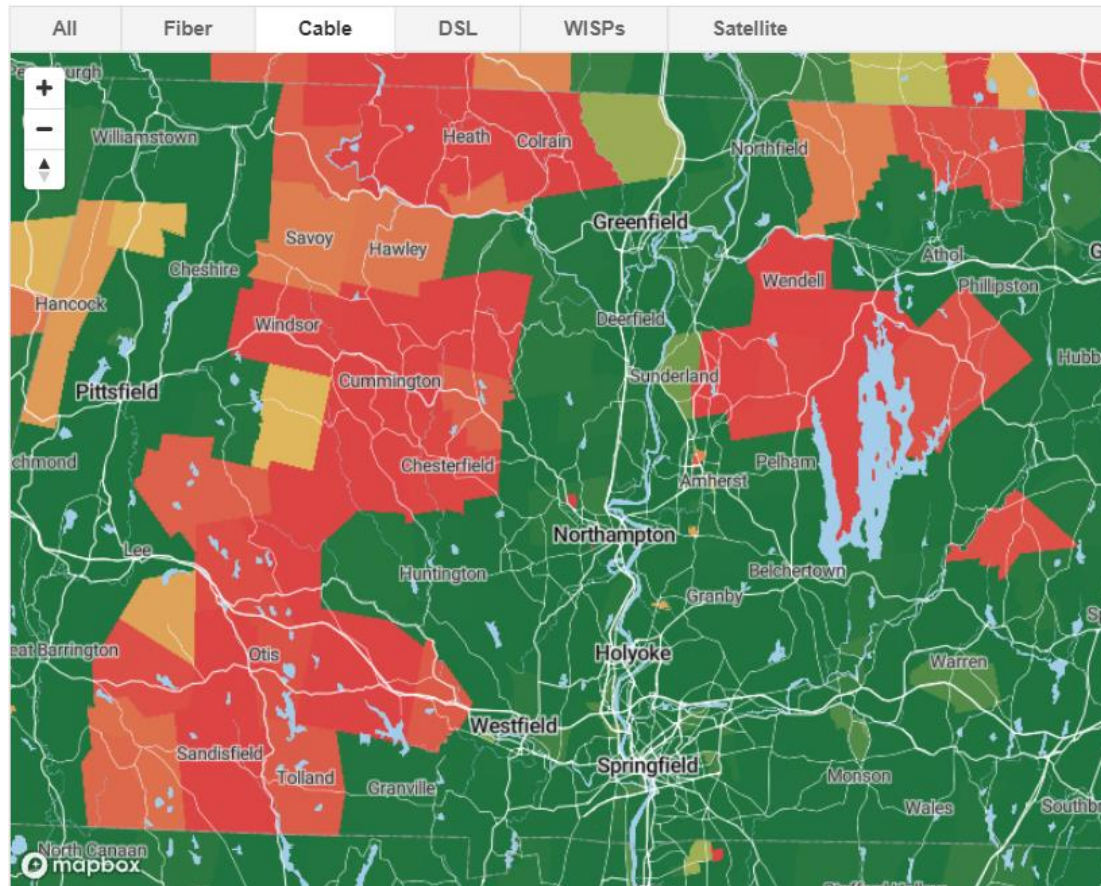
Figure 15. DSL Availability in Western Massachusetts
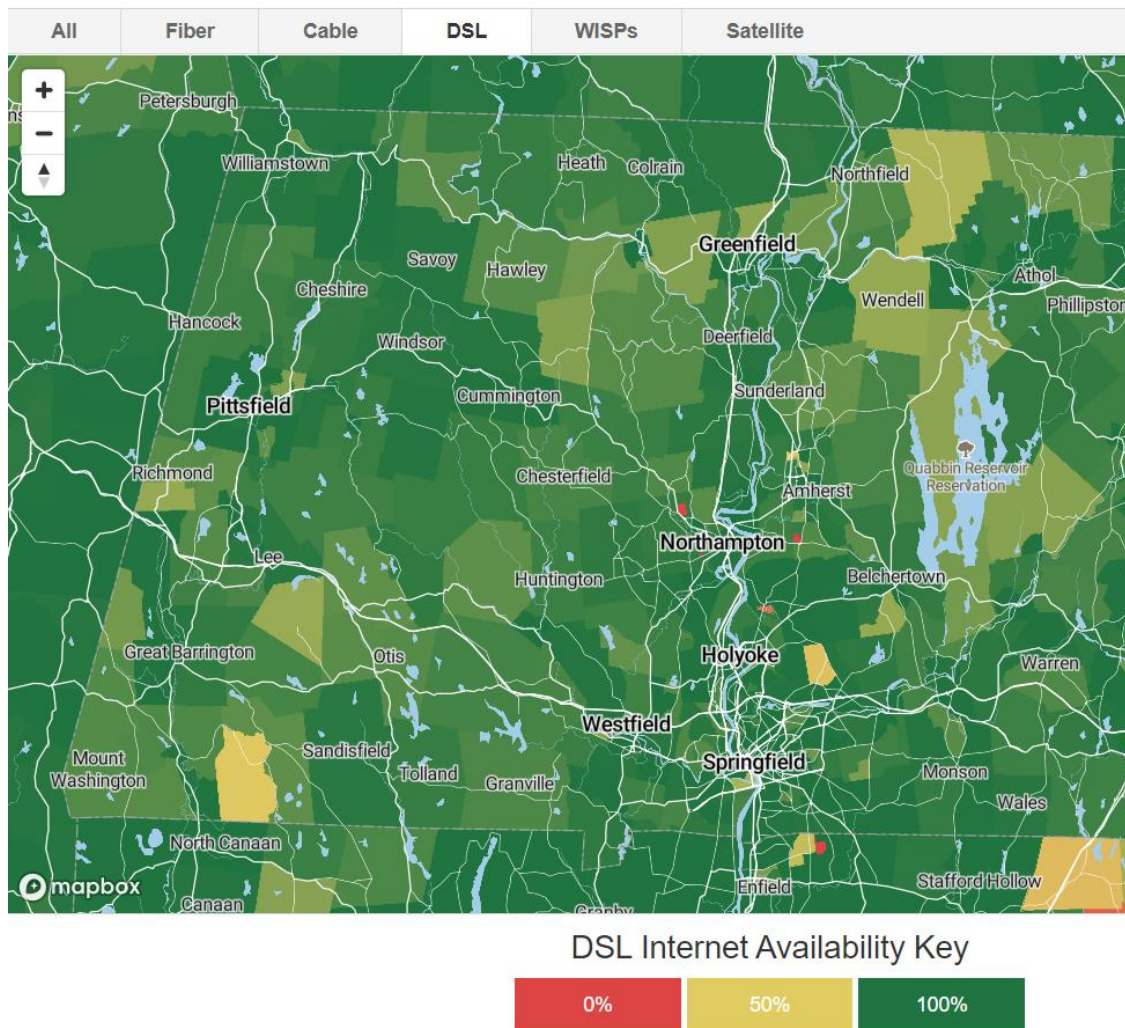
Housing

Quality of housing is strongly associated with health outcomes. It is one of the strongest social determinates of health. Unsafe, uncertain, or unhealthy housing is strongly associated with multiple physical and mental health issues including "morbidity from infectious diseases, chronic illnesses, injuries, poor nutrition, and mental disorders. We present some of this evidence in the following section."

Figure 16. Number of Persons with Disabilities: U.S., Massachusetts, and Berkshire County

Source: B18108: Census Bureau Table

Label	United States Estimate	Margin of Error	Berkshire County, Massachusetts Estimate	Margin of Error
⌄ Total:	323,120,678	±17,674	122,886	±569
⌄ With a disability:	41,089,958	±115,466	17,465	±2,374
With a hearing difficulty	11,495,247	±58,968	4,479	±964
With a vision difficulty	7,467,040	±58,337	2,299	±711
With a cognitive difficulty	15,797,245	±87,227	7,447	±1,696
With an ambulatory difficulty	20,843,415	±86,983	9,333	±1,729
With a self-care difficulty	8,004,156	±51,486	3,681	±1,154
With an independent living difficulty	14,987,954	±72,450	7,231	±1,632
No disability	282,030,720	±115,085	105,421	±2,375

Label	United States Estimate	Margin of Error	Massachusetts Estimate	Margin of Error
⌄ Total:	323,120,678	±17,674	6,820,969	±1,160
⌄ With a disability:	41,089,958	±115,466	785,093	±13,365
With a hearing difficulty	11,495,247	±58,968	211,104	±6,664
With a vision difficulty	7,467,040	±58,337	112,017	±6,167
With a cognitive difficulty	15,797,245	±87,227	324,784	±9,352
With an ambulatory difficulty	20,843,415	±86,983	372,584	±9,835
With a self-care difficulty	8,004,156	±51,486	157,832	±7,049
With an independent living difficulty	14,987,954	±72,450	295,904	±9,823
No disability	282,030,720	±115,085	6,035,876	±13,406

**Figure 17. Top Health / Mental Health Challenges in Berkshire County**

Source: 2021 Community Health Needs Assessment | Berkshire Health Systems

Health / Mental Health Challenges	Berkshire County	Massachusetts
Heart Disease: Annual Death Rate per 100K	291.1	254.4
Cancer: Annual Death Rate per 100K	152.9	146.9
Opioid-Related Overdose: Death Rate per 100K	48.1	32.6
Suicides per 100K	17.4	10
Adult Obesity	27%	25%
Excessive Drinking	26%	24%

Adult Smoking Prevalence: *2nd highest in MA*	19%	14%
Diabetes Prevalence: *2nd highest in MA*	10.70%	8.40%

Figure 18. Teen Birth Rates among Females Ages 15-19 Years by Mother's Race/Ethnicity, Massachusetts: 2009 and 2019

Source: Massachusetts Births 2019 | mass.gov
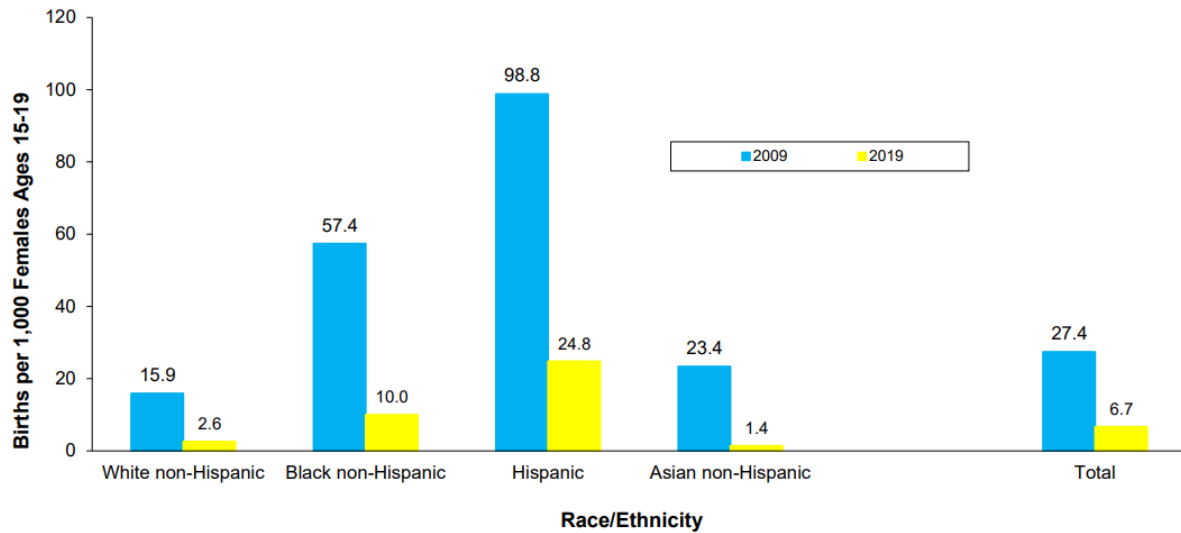
NOTE: Teen birth rate is number of births to females ages 15-19 per 1,000 females ages 15-19. 2009 birth rates are based upon the 2009 population estimates from the National Center for Health Statistics. 2018 birth rates are based upon UMass Donahue Institute population estimates for 2019

Figures 19-23. Findings from Covid Community Impact Survey

Much of this data suggest the impact of location and access to services/resources on health and mental health outcomes.

Source: COVID-19 Community Impact Survey Data Dashboard | mass.gov

Figure 19

Housing: Are you worried about paying your mortgage, rent, or utilities in the next few weeks?

Percent Answering "Yes" by County
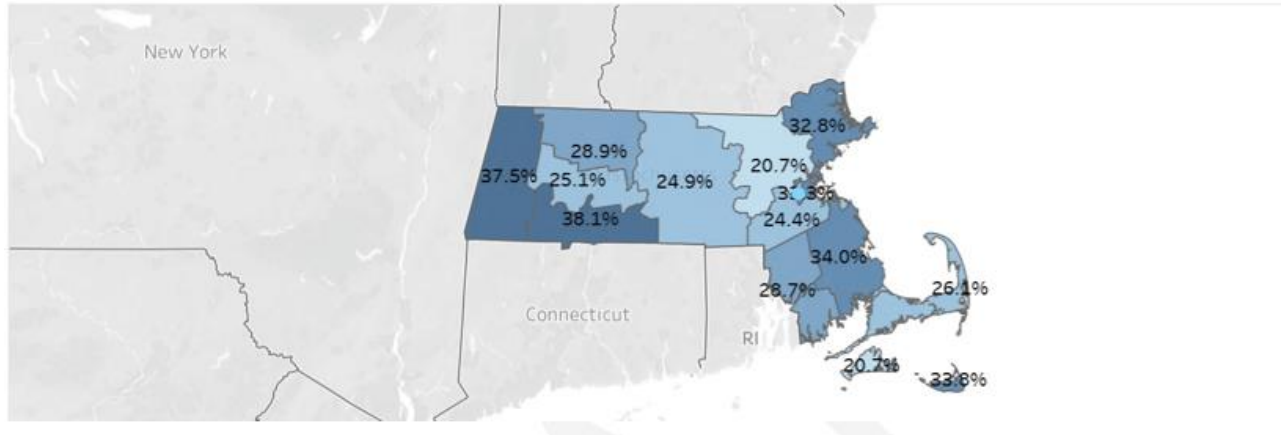
Figure 20

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
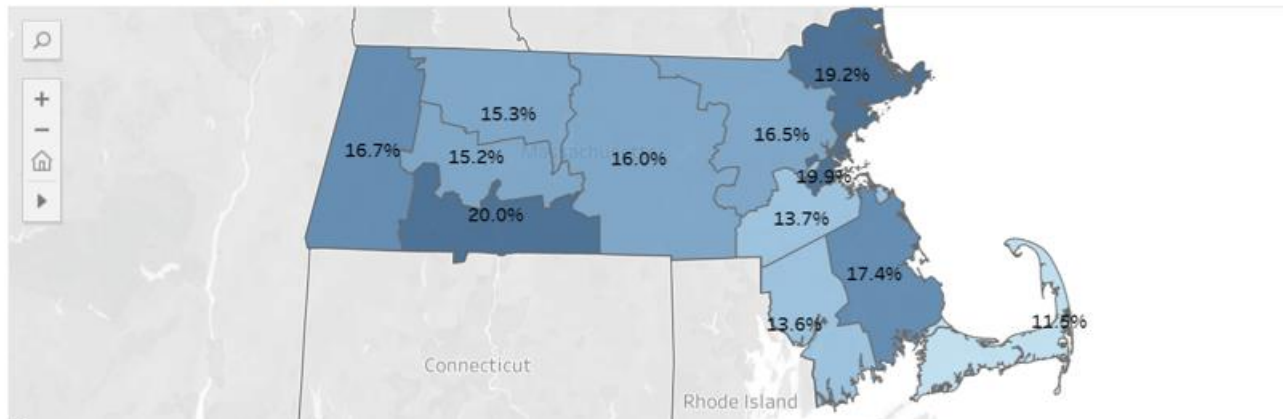
Figure 21

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

Percent Answering "Yes" by County
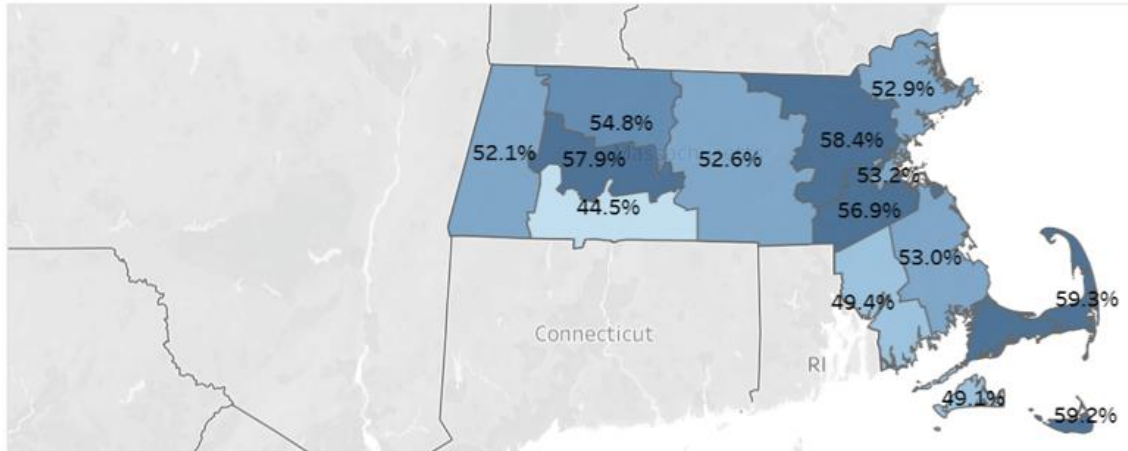
Figure 22

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?
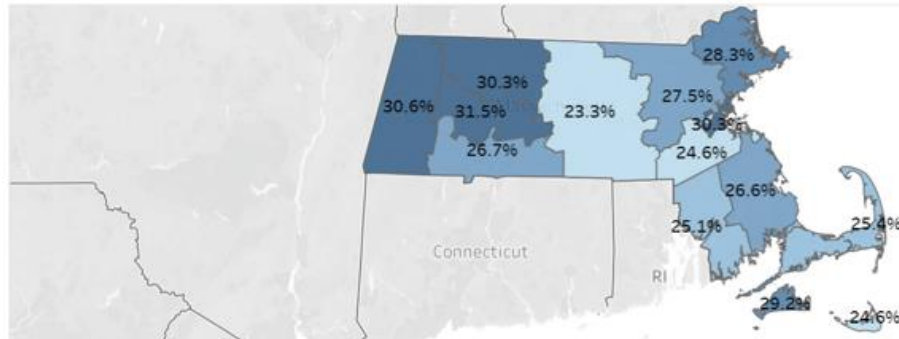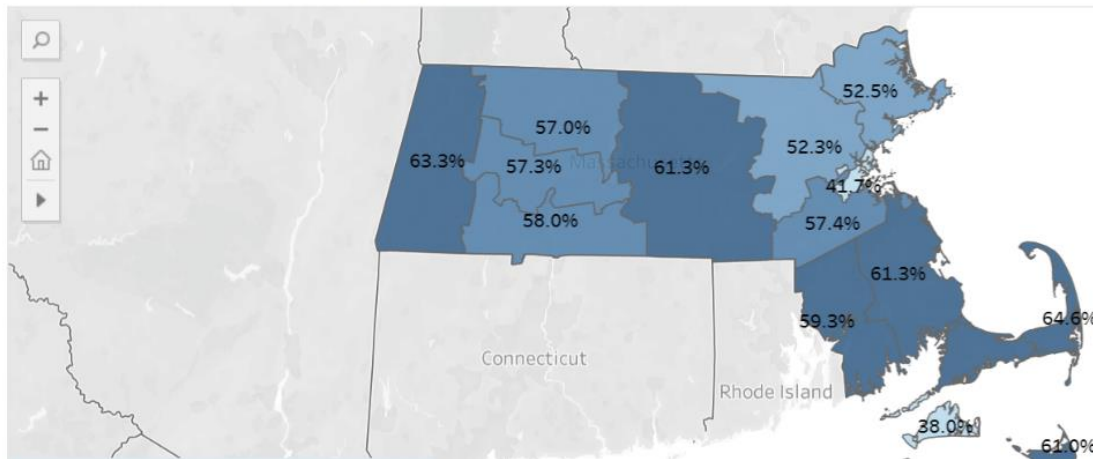
Percent Answering "3+ Reactions" by County

Figure 23

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

Percent Answering "No" by County

Health Needs Assessment of Black Non-Hispanic, White Non-Hispanic, and Hispanic Persons with Disabilities in Massachusetts

Source: Massachusetts Behavior Risk Factor Surveillance System (MA BRFSS) 2012-2013

Figure 25. MA Adults with Disabilities with Fair or Poor Self-Reported Health Status by Race/Ethnicity, 2012-2013

"Two different indicators were used to measure the general health of an individual. All respondents in the MA BRFSS were asked to report:
1. General health status as either excellent, very good, good, fair, or poor. Presented here are the percentages of adults with disabilities by race/ethnicity who reported fair or poor overall health.
2. Number of days during the past month that physical health, which includes physical illness and injury, had not been good. Presented here are the percentages of adults with disabilities by race/ethnicity who reported 15 or more days of poor physical health."
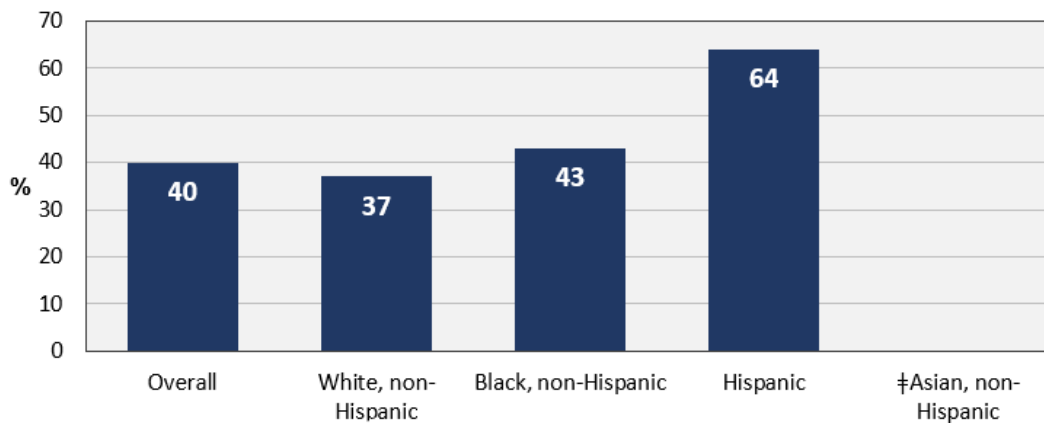
‡ Suppressed due to insufficient data (n < 11)

Figure 26. MA Adults with Disabilities Who Have Ever Been Diagnosed with Depression by Race/Ethnicity, 2012-2013
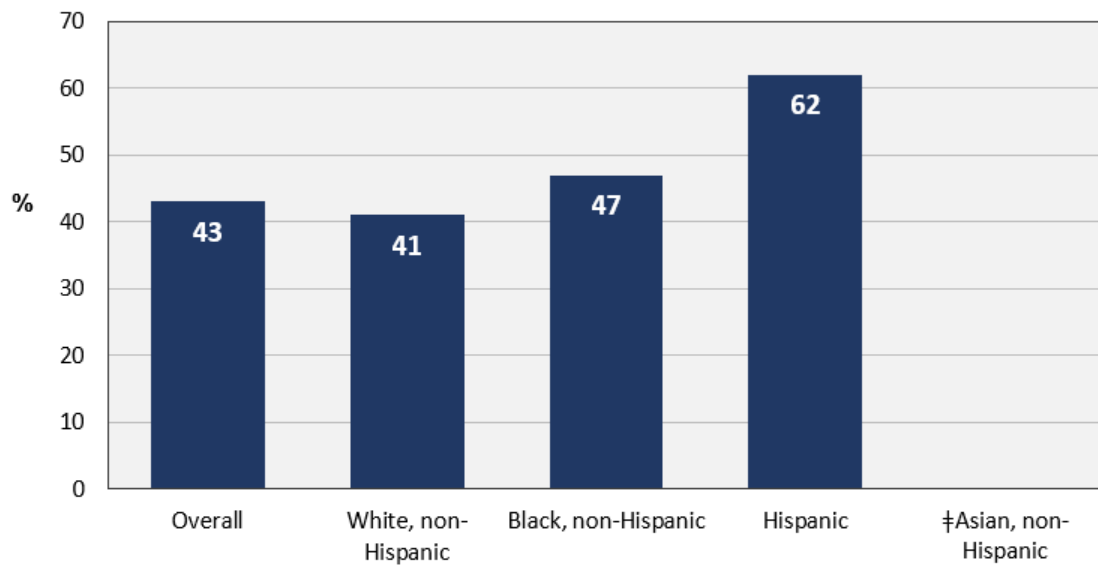
‡ Suppressed due to insufficient data (n < 11)

Crime

Intimate Partner Violence (IPV)

Eighty percent of IPV cases are filed as misdemeanors and between 93 and 98 percent of all criminal cases are resolved through a plea bargain. An investigation that recommends a single misdemeanor charge has little chance of being prosecuted or resulting in a criminal conviction.

By far, the single most important optional action a first-responding police officer can take to increase rates of prosecution and criminal conviction for domestic violence crime is to include other viable charges in the written report. When a police officer's report indicates that more than one crime occurred, the prosecution likelihood improves by between 260 and 300 percent, while the conviction likelihood grows by 140 to 150 percent.

Source: Investigating Domestic Violence: Raising Prosecution and Conviction Rates - LEB (fbi.gov)

Intimate partner violence accounts for 15% of all violent crime. 1 in 15 children are exposed to intimate partner violence each year, and 90% of these children are eyewitnesses to this violence.

Source: Statistics (ncadv.org)

33.9% of Massachusetts women and 31.7% of Massachusetts men experience intimate partner physical violence, intimate partner sexual violence and/or intimate partner stalking in their lifetimes. As of December 31, 2019, Massachusetts had submitted 2,442 domestic violence misdemeanor records and no active protective orders to the NICS Index.

Source: ncadv_massachusetts_fact_sheet_2020.pdf (speakcdn.com)

Violent Victimization by Sexual Orientation and Gender Identity, 2017-2020

During 2017 to 2020—

- The rate of violent victimization of lesbian or gay persons (43.5 victimizations per 1,000 persons age 16 or older) was more than two times the rate for straight persons (19.0 per 1,000).

- The rate of violent victimization against transgender persons (51.5 victimizations per 1,000 persons age 16 or older) was 2.5 times the rate among cisgender persons (20.5 per 1,000).

- About 58% of violent victimizations of lesbian or gay persons were reported to police.

- Intimate partner violence was eight times as high among bisexual persons (32.3 victimizations per 1,000 persons age 16 or older) and more than twice as high among lesbian or gay persons (10.3 per 1,000) as it was among straight persons (4.2 per 1,000).

Source: Violent Victimization by Sexual Orientation and Gender Identity, 2017–2020 | Bureau of Justice Statistics (ojp.gov)

Crime Against Persons with Disabilities, 2009–2019

During 2009 to 2019—

- Persons with disabilities were victims of 26% of all nonfatal violent crime, while accounting for about 12% of the population.

- The rate of violent victimization against persons with disabilities (46.2 per 1,000 age 12 or older) was almost four times the rate for persons without disabilities (12.3 per 1,000).

- One in three robbery victims (33%) had at least one disability.

- Persons with cognitive disabilities had the highest rate of violent victimization (83.3 per 1,000) among the disability types measured.

- Nineteen percent of rapes or sexual assaults against persons with disabilities were reported to police, compared to 36% of those against persons without disabilities.

Source: Crime Against Persons with Disabilities, 2009–2019 – Statistical Tables | Bureau of Justice Statistics (ojp.gov)

Report on Indicators of School Crime and Safety, 2020

- In 2019, students ages 12-18 experienced 764,600 victimizations at school and 509,300 victimizations away from school.

- About 22% of students ages 12-18 reported being bullied at school during the school year in 2019, which was lower than the percentage who reported being bullied in 2009 (28%).

- In 2019, of students ages 12-18, about 9% reported a gang presence at their school during the school year, 7% reported being called hate-related words, and 23% reported seeing hate-related graffiti.

- Between 2009 and 2019, the percentage of students in grades 9–12 who reported carrying a weapon anywhere during the previous 30 days decreased (from 17% to 13%), as did the percentage of students who reported carrying a weapon on school property (decreased from 6% to 3%).

- In 2019–20, there were a total of 75 school shootings with casualties, including 27 school shootings with deaths and 48 school shootings with injuries only. In addition, there were 37 reported school shootings with no casualties in 2019–20.

Criminal Victimization, 2020

- About 40% of violent victimizations and 33% of property victimizations were reported to police in 2020.

Violent Victimization by Race or Ethnicity, 2005-2019

- The overall number of violent victimizations decreased over this period by 1.1 million (16 percent).

- The number of violent victimizations of Black persons decreased 32 percent, from 913,000 to 623,000.

- The number of violent victimizations against White persons declined 24 percent, from 4.8 million to 3.6 million.

- Regarding the rate of violent victimizations from 2005 to 2019, the overall decline was 26 percent, from 28.4 to 21.0 victimizations per 1,000 U.S. residents age 12 or older.

- The rate of violent victimizations of Black persons fell 43 percent, from 32.7 to 18.7 violent victimizations per 1,000 Black persons age 12 or older.
- The rate of violent victimization of White persons fell 24 percent, from 22.7 to 21.0 victimizations per 1,000 White persons age 12 or older.

Figure 27. Number of Victims by Age by Gender by County

	Under 18		18 and over		Unknown	
	Female	Male	Female	Male	Female	Male
Berkshire County	150	73	1,569	1,424	10	14
Franklin County	58	31	628	625	6	5
Hampden County	694	516	10,141	8,473	16	19
Hampshire County	118	67	1,321	1,277	16	21

Source: MassCrime *(link is no longer valid—page may have moved)*

Number of Reported Violent Crime Offenses per 100,000 Population

US: 386 | MA: 384 | Min: 158 | Max: 752

Youth Health and Risk Behaviors

Youth in Massachusetts report health and risk behaviors that are likely applicable to Western Mass youth as well. While smoking rates in general are down, vaping is up. There seems to be less stigma associated with marijuana use, and driving under the influence has increased. The number of youth reporting feelings of hopelessness is rising. Bullying has increased and now includes cyber bullying. Nutritional habits such as drinking milk and eating breakfast are down. Physical activity rates go down as children age, and obesity goes up. A quarter of students reported going to bed hungry in the previous week. While most students felt their neighborhoods were safe, 14% of middle schoolers reported seeing

someone physically harmed in their neighborhood.

Sources:
Massachusetts Youth Risk Behavior Survey (MYRBS) (doe.mass.edu)
Massachusetts Youth Health Survey (MYHS) (mass.gov)
Youth Risk Behavior Surveillance System (YRBSS) | CDC

Massachusetts Youth Risk Behavior Survey (MYRBS) and **Massachusetts Youth Health Survey (MYHS)** are the most comprehensive and reliable tools available to monitor and evaluate progress across the Commonwealth of Massachusetts related to preventing or reducing behaviors that endanger the health and academic attainment of youth. These surveys are conducted on odd numbered years and are designed to monitor health indicators, behaviors, and risk factors contributing to the leading causes of illness, injury, mortality, and social and academic problems among adolescents, including:

- Protective factors
- Behaviors that contribute to unintentional injuries and violence
- Sexual behaviors related to unintended pregnancy and sexually transmitted infections (STIs), including HIV
- Alcohol, marijuana, and other drug use
- Tobacco use and electronic vaping device use
- Unhealthy dietary behaviors
- Inadequate physical activity

Data collected through the MYRBS and MYHS enable DESE and DPH to provide estimates for a variety of health indicators, behaviors, and risk factors for Massachusetts youth overall and grouped by certain characteristics (gender, grade, and race-ethnicity). These analyses can highlight inequities in health within and across population sub-groups. In interpreting these results, it is critical to recognize that the social, economic, behavioral, and physical factors experienced by youth have a profound impact on their health.

Spring 2019 Participants

MYRBS	51 HIGH SCHOOLS RANDOMLY SELECTED
MYHS	50 HIGH SCHOOLS RANDOMLY SELECTED
MYHS	63 MIDDLE SCHOOLS RANDOMLY SELECTED
	6,768 STUDENT PARTICIPANTS GRADES 6–12

YRBS and YHS data are collected from a scientifically drawn sample of all Massachusetts middle school and high school students. The data collected are analyzed to evaluate nonresponse bias. Data are weighted to create estimates for all students in Massachusetts. Weighting is a mathematical procedure that makes data representative of the population from which it was drawn.

IN THIS SUMMARY

- 2019 Key Findings
- Results Summary
- Demographic characteristics of students reported in the MYRBS and MYHS
- Appendix of detailed data tables on key health indicators, behaviors, and risk factors in the full report, which include overall prevalence estimates, as well as gender, grade, and race/ethnicity subgroup estimates

MANY YOUTHS REPORT THE PRESENCE OF PROTECTIVE FACTORS

ASSOCIATED WITH LOWER RATES OF RISK BEHAVIORS.

Factors such as academic goals and successes, school-connectedness, and a close relationship with a parent or caregiver have long been recognized as potential protective factors because they promote resiliency in youth.

- Most middle school (86%) and high school (77%) students report earning grades of mostly A's and B's. This has been a consistent finding with each survey administration.

- Most high school students (73%) are planning on completing a post-high school program such as vocational training program, military service, or college.

- Many high school students have adults they can talk to, and this has been a consistent finding since 2009.
    - Seventy-four percent (74%) of high school students report having a teacher in school they could talk to about a problem.
    - Eighty-one percent (81%) of high school students report having a parent or adult family member they could talk to about things.

MANY YOUTH RISK BEHAVIORS AND HEALTH-RELATED FACTORS SHOW SIGNIFICANT LONG-TERM IMPROVEMENTS OVER THE LAST TEN YEARS.

Since 2009, long-term reductions have been observed in cigarette use, pregnancy, and violence rates. Despite the long-term downward trends, the current data show no significant reductions since 2017. Continued monitoring will show whether these behaviors will continue to stay level or will again improve (or decline).

- Cigarette smoking rates remain much lower than a decade ago. Five percent (5%) of high school students report smoking at least one cigarette in the past month (compared to 16% in 2009).

- Among middle school students, 5% report ever smoking cigarettes (compared to 15% in 2009).

- Fewer than 4% of high school students have ever been pregnant or gotten someone pregnant (compared to 6% in 2009).

- In 2019, 18% of students were involved in a physical fight (down from 29% in 2009).

SOME YOUTH RISK BEHAVIORS AND HEALTH-RELATED FACTORS HAVE WORSENED SIGNIFICANTLY FROM 2017 TO 2019.

A few indicators, specifically those related to nutrition, electronic vaping use, and mental health have worsened in the last few years.

- The use of electronic vaping devices has increased.

    - Among high school students, 51% have tried them at least once (up from 41% in 2017), and 8% are using them daily (compared to just 2% in 2017).
    - Among middle school students, 15% have tried them at least once (up from 10% in 2017).

- Overall levels of marijuana use have not changed but some associated risk behaviors and perceptionshave, as have parental perceptions.
    - Driving under the influence of marijuana increased (20% in 2019 compared to 15% in 2017).
    - Using marijuana on school property increased (9% in 2019 compared to 5% in 2017).
    - Perception of parental views of marijuana changed. Among high school students, 67% thought parents would disapprove of their marijuana use (down from 71% in 2017).

- The number of youths feeling sad or hopeless continues to rise.
    - In high schools, 34% of students reported feeling so sad or hopeless that they had stopped doing some of their usual activities (compared to 27% in 2017).
    - In middle schools, 24% of students reported feeling so sad or hopeless that they had stopped doing some of their usual activities (compared to 19% in 2017).

- Some nutrition habits have worsened.
    - Fewer high school youth (27%) are drinking milk daily compared to 2017 (32%).
    - Fewer high school students (31%) are eating breakfast every day (a decrease from 38% in 2017).

SOME IMPORTANT RISK AREAS REMAIN STATISTICALLY UNCHANGED SINCE 2017.

A few important indicators, notably those related to marijuana, school safety and nutrition, physical activity,and weight, have seen small fluctuations but no significant change.

- There has been no significant change in the percentage of students using marijuana among middle school and high school students.
    - Seven percent (7%) of middle school students have tried it at least once, and 3% have used it inthe past thirty days.
    - Forty-two percent (42%) of high school students have tried it at least once, and 26% have used it in the past thirty days.

- There has been no significant change in the percentage of middle school and high school students who report bullying.
    - Thirty-five percent (35%) of middle school students report having been bullied.
    - Fourteen percent (14%) of high school students report having been bullied electronically and 16% were bullied on school property.

- Among high school students, 6% report skipping school because they felt unsafe at school or on their way to school.

- Forty-three percent (43%) of high school students and 48% of middle school students were physically active for 60 minutes on five or more days per week.

- One-quarter (25%) of middle school students and 29% of high school students were overweight or obese (based on self-reported height and weight).

AS INFLUENCES ON ADOLESCENT HEALTH AND SOCIAL WELLBEING CHANGE, IT IS CRUCIAL TO KEEP ABREAST OF NEW AND CHANGING BEHAVIORAL PATTERNS AMONG YOUTH.

With the addition of the following new questions to the MYRBS and MYHS, data regarding risk and protective factors as well as the impact of adverse experiences and traumas on these factors may emerge that can help to inform educational and public health initiatives targeting adolescents.

- Many youths are engaged with their community, which is considered a protective factor.
  - Sixty-eight percent (68%) of middle school and 61% of high school students took part inorganized activities.
  - Thirty-seven percent (37%) of high school and 36% of middle school students reported doing volunteer work, community service, or helping people outside of their home without getting paid.

- Students are spending time with family, also thought of as a protective factor.
  - Seventy-nine percent (79%) of high school and 86% of middle school students sat down to dinner with family one or more times in past week.
  - Forty-nine (49%) of high school students have had discussions with their parents or other adults in their family, about their parents'/family members' expectations of them (to do or not to do) when it comes to sex.

- A new question was added in 2019 to increase our knowledge over time of adolescent suicide ideation and behaviors. In this first year of collecting data on this information, 24% of high school students who attempted suicide had asked for help from someone such as a doctor, counselor, or hot line prior to the attempt.

- Food insecurity is considered adverse childhood events that have a negative impact on youth. Twenty-eight percent (28%) of high school students and 25% of middle school students went to bed hungry at least once in previous week because there was not enough food at home.

- Not feeling safe or witnessing violence are also considered adverse childhood events that negatively impact youth. While most youth (90% of high school students and 91% of middle school students) feel their neighborhood was safe from crime, nineteen percent (19%) of high school and 14% of middle school students have witnessed someone being physically harmed in their neighborhood.

Figure 28. Demographic Characteristics of the 2019 MHYS and MYRBS

Demographic Characteristics of the 2019 MYHS and MYRBS [a,b]		
Middle School MYHS (N=2,536)	High School MYHS (N=2,014) MYRBS (N=2,218)	
Sex		
Female	1240 (51.0%)	1034 (50.8%)	1073 (50.6%)
Male	1188 (49.0%0	958 (49.2%)	1124 (49.4%)

Missing	108	22	21
Grade			
6th grade	939 (33.7%)	-	-
7th grade	900 (33.4%)	-	-
8th grade	672 (32.8%)	-	-
9th grade	-	577 (26.7%)	819 (26.1%)
10th grade	-	490 (24.7%)	594 (25.2%)
11th grade	-	580 (24.6%)	444 (24.2%)
12th grade	-	354 (23.9%)	332 (24.1%)
Ungraded or Other	1	2	11
Missing	24	11	18
Race/Ethnicity [a]			
White, non-Hispanic	1166 (59.6%)	1256 (62.0%)	1152 (61.7%)
Black, non-Hispanic	157 (9.1%)	131 (8.9%)	309 (9.0%)
Hispanic or Latino	658 (20.5%)	357 (19.1%)	427 (19.2%)
Asian, non-Hispanic	159 (4.5%)	117 (5.1%)	144 (6.6%)
Other or Multiple Ethnicity, non-Hispanic (NH)	212 (6.3%)	104 (4.8%)	120 (3.4%)
Missing	184	49	66

(a) Students could indicate multiple racial/ethnic categories. If Hispanic/ Latino was indicated as an ethnic identification, whether alone or in combination with other ethnic categories, the student was categorized as Hispanic/Latino. The Other or Multiple Ethnicity category includes American Indian, Alaskan Natives or Pacific Islander and youth who indicated several ethnicities that did not include Hispanic/Latino.

(b) N = number of students with a valid response for the question. Percent (%) = weighted(*) percent of all students with a valid response for the question.*(To correct for slight variations between the Massachusetts Middle/High school populations and the MYRBS/ MYHS samples, cases were statistically weighted. Weighting is a mathematical procedure that makes data representative of the population from which it was drawn.)

Resources

Reg-1-HMCC-HVA-Final-June-2022.pdf (region1hmcc.org)
Available public health research data sets (mass.gov)
Environmental Justice Populations in Massachusetts (arcgis.com)
MA State Health Assessment (mass.gov)
COVID-19 Community Impact Survey | Mass.gov
download (mass.gov)
HMCC Resources – By Topic – Western MA Health and Medical Coordinating Coalition (region1hmcc.org)
Reg-1-HMCC-HVA-Final-June-2022.pdf (region1hmcc.org)
https://www.usnews.com/news/healthiest-communities/massachusetts/berkshire-county
Berkshire, Massachusetts | County Health Rankings & Roadmaps
Franklin, Massachusetts | County Health Rankings & Roadmaps
Hampshire, Massachusetts | County Health Rankings & Roadmaps
Hampden, Massachusetts | County Health Rankings & Roadmaps
Great Barrington Hazard Mitigation & Climate Adaptation Plan (townofgb.org)
HHS emPOWER Map 2014-2018 Median Age in the United States by County (census.gov)
Emergency Preparedness Planning Tool (mass.gov).