

Chapter 3. Profile of Massachusetts' Setting and Climate Projections

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Abbreviations

ACS	American Community Survey
DCAMM	Division of Capital Asset Management and Maintenance
DCR	Department of Conservation and Recreation
EEA	Energy & Environmental Affairs
EOEEA	Executive Office of Energy & Environmental Affairs
EJ	Environmental Justice
FEMA	Federal Emergency Management Agency
RCP	Representative Concentration Pathway
SHMCAP	State Hazard and Climate Adaptation Plan

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3.1 Introduction

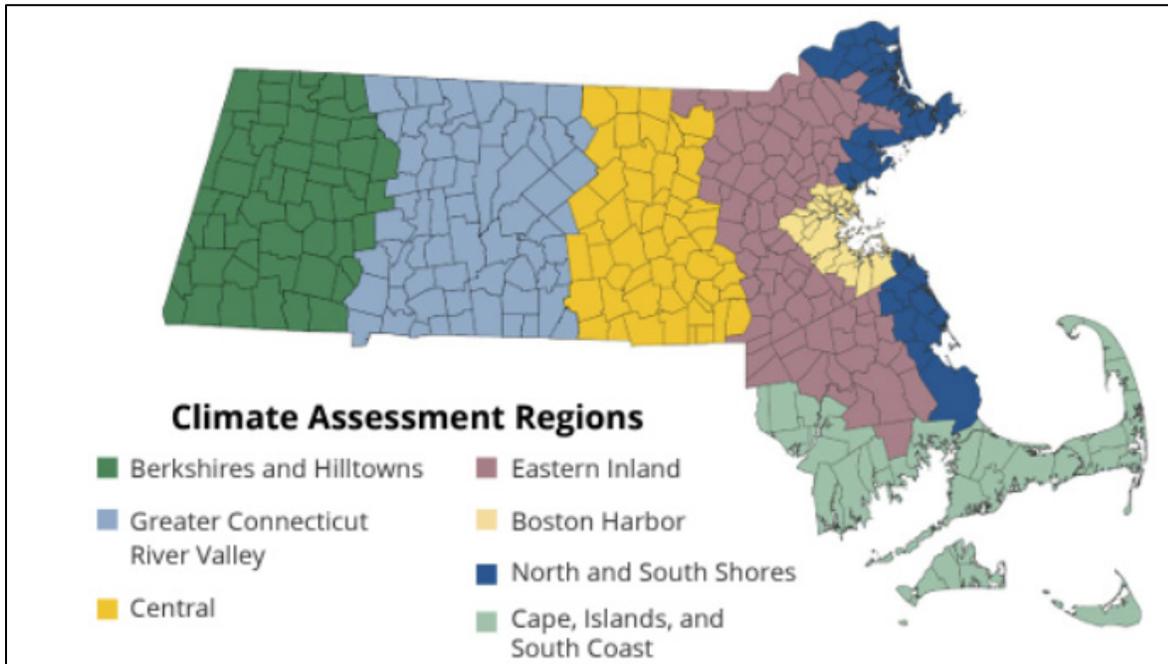
To better understand the hazards that pose the greatest risk to Massachusetts, to identify the changes to those hazards that are occurring and will likely accelerate due to climate change, and to determine the most effective actions to include in the 2023 Massachusetts State Hazard Mitigation and Climate Adaptation Plan (MA SHMCAP), it is necessary to understand the Commonwealth’s natural environment, resources, communities and populations, lifelines, and critical assets and services. This chapter describes that setting and the factors that influence current and future risk and resilience in Massachusetts—part of the foundation for an understanding of how to prioritize hazard mitigation and climate adaptation actions to reduce the most urgent risks and most effectively build resilience.

Regional variations such as geography, natural resources, demographics, population density, development patterns, cultural resources, and economy shape the experience of and response to hazards and climate impacts. At a higher level, there are some common factors across the Commonwealth that provide critical context and insights into complexities that should be considered at each level of hazard mitigation and climate adaptation planning. The following subsections provide an overview of the local demographics, geography, climate, economy, transportation, natural resources, land management, and state assets.

3.1.1 Key Resources and Assets

Massachusetts is a small and diverse state with a wealth of natural, historic, and cultural resources. The Commonwealth is home to many communities, economic, and natural

assets that must be protected from hazards—and the increases in frequency, intensity, duration, and areas affected by these hazards due to climate change. Recognizing the diversity of geography and demographic characteristics across the Commonwealth, the *2022 Massachusetts Climate Change Assessment* (MA Climate Assessment) subdivided the state into seven climate regions, as shown in Figure 3-1. The 2023 MA SHMCAP uses these regional designations, where relevant, to describe various populations, demographics, and risks. (In some cases, when describing circumstances at the county or municipal scale would be more informative, the MA SHMCAP uses those scales instead.)



Source: MA Climate Assessment (Commonwealth of Massachusetts, 2022).

Figure 3-1. Map of the seven regions used in the MA Climate Assessment.

3.1.1.1 Demographics and Population Characteristics

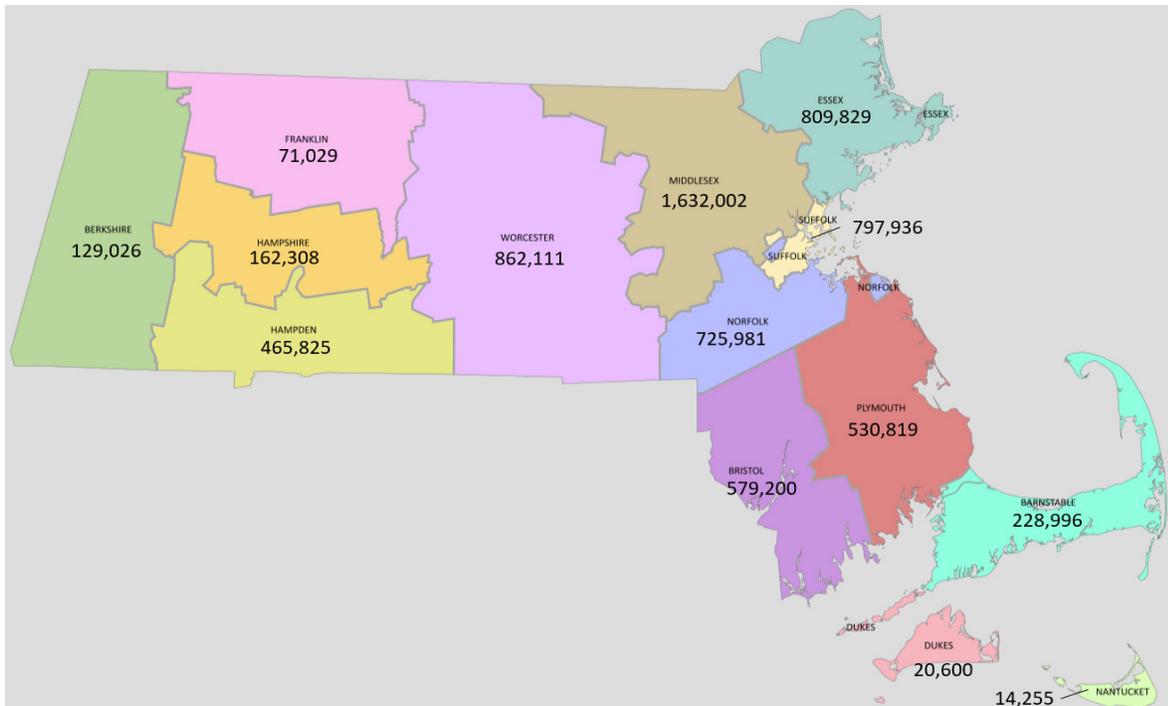
Massachusetts is a relatively small state. It is densely populated, particularly in the eastern regions. The western and island regions are more rural and less populated, with smaller towns of concentrated populations. Demographically, the Commonwealth has a diverse population, with a range of incomes, racial and ethnic backgrounds, and languages spoken in the home. According to information from the 2020 Census, the population is about 7 million, having increased by 7.4 percent between 2010 and 2020 (U.S. Census Bureau, 2021). Table 3-1 (from the MA Climate Assessment) summarizes a subset of demographics for each climate assessment region, as informed by the 2020 U.S. Census for population, the Massachusetts Executive Office of Energy and Environmental Affairs’ environmental justice and priority populations data, and the 2019 American Community Survey five-year estimates (provided as part of the Census Bureau’s demographic survey). This table confirms that population density and characteristics are diverse across

Massachusetts, with higher densities in the eastern regions and low income and racial and ethnic diversity spread throughout the Commonwealth.

Table 3-1. Summary Demographics Based on Climate Region from the MA Climate Assessment

Region	Total Population (2020)	% Minority	% Low Income	% Household with Limited English Language Proficiency	% of Block Groups with Any Environmental Justice Designation
Berkshires and Hilltowns	156,440	12.7%	24.9%	1.2%	37.7%
Greater Connecticut River Valley	788,189	32.8%	30.9%	4.7%	52.0%
Central	960,236	27.4%	20.4%	4.7%	39.9%
Eastern Inland	2,112,456	31.4%	16.7%	4.9%	37.0%
Boston Harbor	1,623,633	50.7%	27.0%	10.2%	66.5%
North and South Shores	731,000	25.4%	20.1%	4.1%	30.9%
Cape, Islands, and South Coast	657,963	20.4%	25.4%	4.4%	38.6%
Statewide	7,029,917	33.4%	22.5%	5.9%	45.9%

Source: MA Climate Assessment (Commonwealth of Massachusetts, 2022).



Sources: MassGIS (n.d.); U.S. Census Bureau (2021).

Figure 3-2. Massachusetts population by county.

As shown in Figure 3-2, Massachusetts is divided into 14 counties. Middlesex County is the most populous of these (about 23 percent of the Commonwealth’s population lives there, according to 2020 Census data), and Nantucket County is the least populous (housing 0.20 percent of the state’s population).

In accordance with the 2020 Census, the racial and ethnic composition of the population across the Commonwealth, in decreasing order, is presented in Table 3-2.

Table 3-2. Racial and Ethnic Composition of Massachusetts’ Population in Decreasing Percentage

Ethnicity	Percentage
White	61.6%
Hispanic	18.7%
Black	12.4%
Two or more races	10.2%
Other race	8.4%
Asian	6.0%
American Indian and Alaska Native	1.1%
Native Hawaiian and Other Pacific Islander	0.2%

Source: U.S. Census Bureau (n.d.).

Across the Commonwealth, 75.5 percent of households only speak English, while 9.4 percent speak Spanish, 9.2 percent speak other Indo-European languages, 4.4 percent speak Asian and Pacific Islander languages, and 1.6 percent speak other languages (U.S. Census Bureau, n.d.)

The median household income was reported as \$89,645; 10.4 percent of residents live in poverty. For education, 46.6 percent held bachelor's degrees or higher, with 22.8 percent holding a high school or equivalent degree. Sixty-three percent of the population are homeowners and 24.7 percent rent. The Commonwealth's homeownership rates are near the median for the U.S., which is about 65 percent. While this indicates an average rate of home ownership, note that Massachusetts has high housing costs and affordable housing is an issue for its residents. The median age in the Commonwealth was 39.9 years, with 17.4 percent of the population at least 65 years of age (U.S. Census Bureau, n.d.).

3.1.1.2 Environmental Justice and Other Priority Populations

The Massachusetts Executive Office of Energy Environmental Affairs released updated [maps of environmental justice populations](#) in 2022. The Environmental Justice Maps Update 2022 is an interactive GIS-based tool that incorporates data from the 2020 U.S. Census on environmental justice populations, which the state defined as those meeting the following criteria:

- "The annual median household income is 65 percent or less of the statewide annual median household income."
- "Minorities make up 40 percent or more of the population."
- "Twenty-five percent or more of households identify as speaking English less than 'very well.'"
- "Minorities make up 25 percent or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150 percent of the statewide annual median household income."

According to the Environmental Justice Maps Update 2022, 51 percent of U.S. Census block groups in the Commonwealth are classified as environmental justice (based on the definition provided above), representing nearly 3.5 million people; these populations are further classified based on specific "environmental justice criteria" for minority population, income, and English isolation, as presented in Table 3-3.

Table 3-3. Summary of Environmental Justice Populations Based on Minority, Income, and English Isolation Criteria

Environmental Justice Criteria	Number of Municipalities	Total Population	Population in Environmental Justice Block Group	Percent of Population in Environmental Justice Block Group
Minority, income, and English isolation	38	3,196,017	2,652,715	83.0%
Minority and income	46	1,919,050	463,205	38.9%
Income and English isolation	1	15,119	2,3029	15.4%
Minority	41	846,400	260,959	30.8%
Income	60	605,317	107,060	17.7%
English isolation	1	8,460	1,413	16.7%

Source: Massachusetts Executive Office of Energy and Environmental Affairs (n.d.).

The Commonwealth also defines priority populations as:

People or communities who are disproportionately impacted by climate change due to life circumstances that systematically increase their exposure to climate hazards or make it harder to respond. In addition to factors that contribute to EJ status (i.e., income, race, and language), other factors like physical ability, access to transportation, health, and age can indicate whether someone or their community will be disproportionately affected by climate change. This is driven by underlying contributors such as racial discrimination, economic disparities, or accessibility barriers that create vulnerability. The term priority populations acknowledges that the needs of people with these experiences and expertise must take precedence when developing resilience solutions to reduce vulnerability to climate change.

Throughout the 2023 MA SHMCAP, environmental justice, priority populations, and those that also face social vulnerabilities are referred to as **“environmental justice and other priority populations.”** Environmental justice and other priority populations in Massachusetts include communities of color, low-income groups, certain immigrant groups, and people with limited English proficiency. They live in locations that are more prone to climate-related health hazards, including extreme heat, flooding, and pollution from industrial sources. These populations have greater rates of existing medical conditions including poor mental health and physical disabilities. Additionally, they may live in areas with infrastructure that is aging or has not been properly maintained, making them more vulnerable to effects from climate change. Environmental Justice and other priority populations likely have limited financial support and access to resources to help them overcome cultural, linguistic, and other social barriers (U.S. EPA, 2022).

3.1.1.3 Projected Population Growth

Information from the 2020 Census showed that Massachusetts was one of the five Northeastern states that had experienced a decline in population since the 2020 Census (UMass Donahue Institute, 2018). Information from the 2020 Census showing Minor Civil Division lines identifies the Boston Harbor region as experiencing the most population growth in the Commonwealth, while population is expected to decline slightly in rural Massachusetts through 2040. According to data on nationwide trends from the University of Virginia, Massachusetts is expected to have a 10.9 percent increase in population between 2020 and 2040 (Weldon Cooper Center, 2018).

Based on data from the Metropolitan Area Planning Council’s public database MassBuilds, which tracks construction and development projects posted by planning commissions from 2013 to 2017, the highest number of construction projects occurred in the eastern area of the state, mostly in the Boston Harbor region in Middlesex and Essex counties. Construction projects between 2018 and 2022 were highest in Middlesex and Essex counties but were also substantial in Norfolk, Hampshire, and Hampden counties. Based on this information and projected population growth across the Commonwealth, development is also likely to occur in Hampshire, Hampden, and Worcester counties between 2023 and 2030.

3.1.1.4 Geography

Massachusetts is a small coastal state bordering the Atlantic Ocean in the New England region of the northeastern U.S. The low-lying coastal plain to the east, which includes the city of Boston and the Cape Cod peninsula, is the most populous area. The more rural interior region features varied elevation, with distinctive rolling hills. Continuing westward, the low-lying Connecticut River Valley watershed bisects the state north to south and is a productive agricultural region. The western border represents the highest elevation of the state, holding the scenic Berkshire and Taconic Mountain ranges (whose highest peak, Mount Greylock, measures 3,491 feet in elevation). About 25 percent of the 10,555-square-mile state is composed of water bodies, including several large reservoirs, lakes, and ponds. Massachusetts is heavily wooded, with forestlands covering a little over 60 percent of the state and distributed throughout the regions. The Commonwealth has a significant coastline for its size—1,500 miles. It also has many rivers and streams, as well as over 25,000 river and stream crossings.

3.1.1.5 Climate

Statewide, Massachusetts has traditionally experienced hot, humid summers and cold winters with significant precipitation. Average annual temperatures vary across the state, with the coast and Greater Boston experiencing the highest temperatures. The Islands and Cape Cod have the highest average winter temperatures and moderate temperatures during the summer months. Central and western Massachusetts have lower average winter and summer temperatures than Greater Boston. The coastal region is classified as

temperate, a slightly warmer climate type characterized by the coldest month between 32°F and 50°F and at least one month averaging above 50°F. Table 3-4 lists average temperatures and precipitation for each Massachusetts county between 1901 and 2000.

Table 3-4. Average Massachusetts Climate Data: 1901–2000

County	Annual Average Precipitation (Inches)	Annual Average Temperature (°F)
Barnstable	35.48	51.0
Berkshire	38.00	46.9
Bristol	36.45	51.5
Dukes	35.11	51.5
Essex	34.84	50.1
Franklin	37.41	48.2
Hampden	38.56	49.6
Hampshire	38.56	49.2
Middlesex	38.12	50.4
Nantucket	35.58	50.4
Norfolk	33.98	50.9
Plymouth	36.79	51.3
Suffolk	36.25	51.1
Worcester	36.75	49.0

Source: NOAA NCEI (2023).

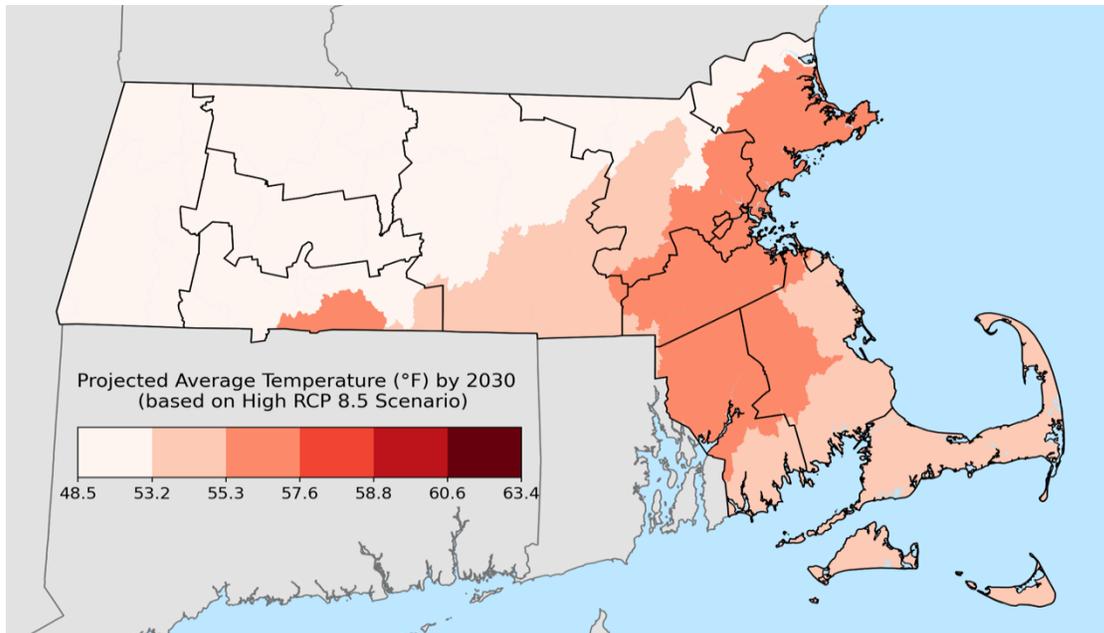
3.1.1.6 Climate Change

The Commonwealth is already experiencing the impacts of climate change, including changes to temperature, precipitation, and water levels due to sea level rise. The following subsections provide an overview of climate change information on temperature, levels of precipitation, and sea level rise. Additional information on these subjects is provided in Chapter 5 (Risk Assessment).

3.1.1.6.1 Temperature

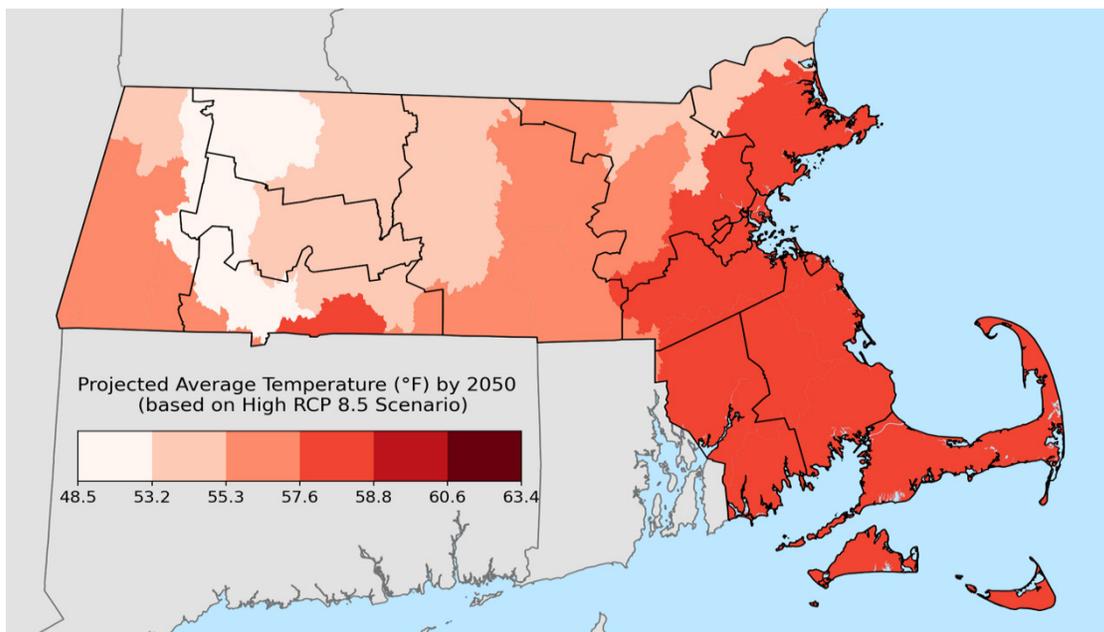
According to the *Resilient MA: Climate Change Clearinghouse for the Commonwealth* website, Massachusetts has experienced a recorded 3.5°F increase in average temperatures since 1900. Average temperatures during the winter are expected to increase more than average summer temperatures, resulting in less snow and ice, increased invasive species, challenging timber harvests, and other issues related to increasing hazard intensity. Also, according to the Resilient MA website, with increased temperatures, extreme heat days (days with temperatures over 90 degrees) will also increase across the state, increasing public health implications such as heat-related illness and mortality. Between 1971 and 2000, the Commonwealth experienced four days with temperatures over 90°F. By mid-century, it is expected to experience between 10 and 28 such days. Figure 3-3 and Figure 3-4 show the areas of the Commonwealth that are expected to experience the

greatest change in projected average temperature assuming a representative concentration pathway (RCP) of 8.5—that is, assuming the amount of greenhouse gases emitted today will be similar to those in the future.



Source: MA Climate Assessment (Commonwealth of Massachusetts, 2022), using Stochastic Weather Generator data.

Figure 3-3. Geospatial distribution of projected annual temperature: 2030.

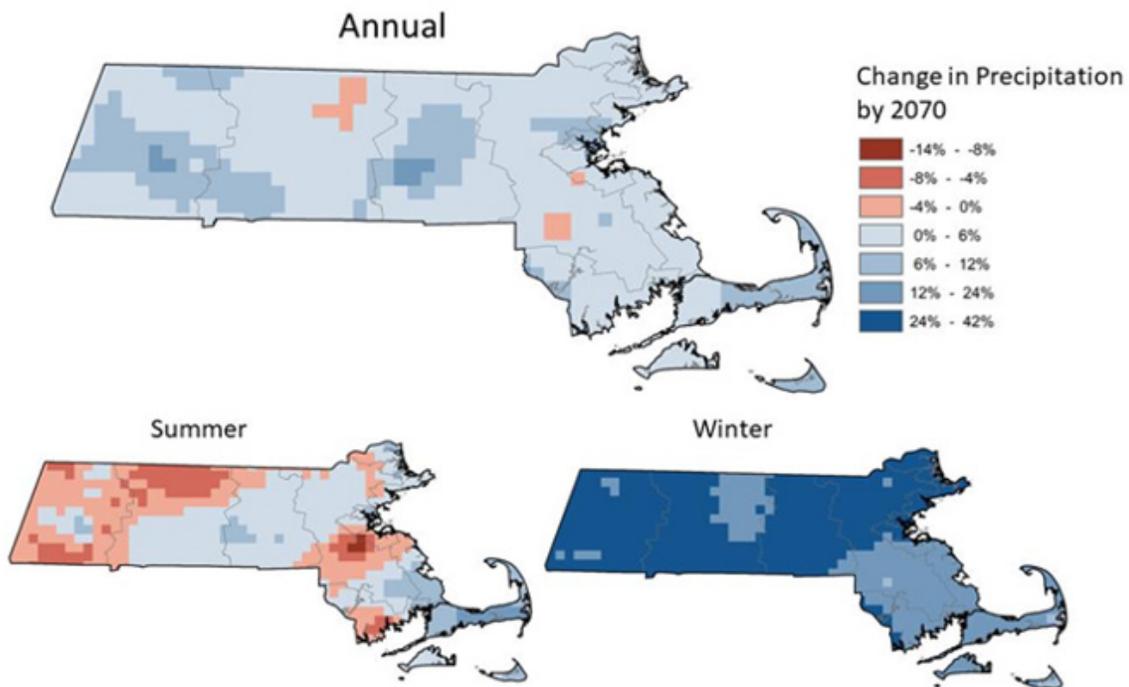


Source: MA Climate Assessment (Commonwealth of Massachusetts, 2022), using Stochastic Weather Generator data.

Figure 3-4. Geospatial distribution of projected annual temperature: 2050.

3.1.1.6.2 Precipitation

Extreme precipitation is contingent on temperature increases and atmospheric capacity to hold water. According to the MA Climate Assessment, annual precipitation is generally expected to increase across Massachusetts overall but occur over fewer days. These trends imply that precipitation events will increase in intensity. Figure 3-5 shows that most areas across the Commonwealth can expect an increase in annual total precipitation, as shown in blue. Most of the changes in precipitation levels are based on seasonal variation, with the most significant changes occurring during winter months.



Source: MA Climate Assessment (Commonwealth of Massachusetts, 2022), using Stochastic Weather Generator data.

Differences between the 50th percentile of projections for 2060–2080 and a baseline of 1986–2005.

Figure 3-5. Change in annual, summer, and winter season precipitation in 2070 compared to current climate.

3.1.1.6.3 Sea Level Rise

Sea level is projected to increase by 0.6 to 1.1 feet above 2000 levels by 2030, and up to 4.2 feet above 2000 levels by 2070 (Massachusetts Department of Public Health, n.d.). The combination of sea level rise and increased levels of precipitation will likely result in the increase of duration, intensity, and frequency of both tidal and storm-related flooding. Additionally, increased frequency of extreme weather could also cause stronger and more frequent storm surges and coastal flooding.

Over half of Massachusetts residents live in coastal communities. Coastal residents, threatened by sea level rise and coastal flooding as well as hurricanes and winter storms, are critically susceptible to the effects of climate change. Both coastal and inland flooding present risks to populations, particularly environmental justice and other priority populations, in addition to infrastructure, assets, economy, and natural resources. Table 3-5 presents the sea level rise projects for 2030, 2050, and 2070 based on the data and scenarios used to inform the MA Climate Assessment.

Table 3-5. Sea Level Rise Projection Relative to the 2008 Present Day Tidal Epoch

Sea Level Rise Projection	2030	2050	2070
Northern coast of Massachusetts	1.2 feet (14.4 inches)	2.4 feet (28.8 inches)	4.2 feet (50.4 inches)
Southern coast of Massachusetts	1.2 feet (14.4 inches)	2.5 feet (30.0 inches)	4.3 feet (51.6 inches)

Source: Woods Hole Group (2022).

3.1.1.6.4 Massachusetts Climate Planning Initiatives

The 2018 MA SHMCAP was the first state hazard mitigation plan to explicitly integrate climate change vulnerabilities and adaptation strategies with hazard mitigation planning. The 2023 MA SHMCAP has continued this integrated planning approach. Historically, the Commonwealth has successfully conducted hazard mitigation planning efforts through a range of programs, research, initiatives, and legislation. Some recent examples include:

- [2023 Resilient Lands Initiative](#). Guides actions that aim to conserve, restore, and care for the land to help nature and improve the quality of life for residents—especially environmental justice and other priority populations.
- [Municipal Vulnerability Preparedness \(MVP\) Program](#). Provides funding and technical assistance to localities conducting vulnerability assessments and developing resilience plans.
- [2022 Massachusetts Climate Change Assessment](#). Describes how residents, the environment, governance, economy, and infrastructure may be affected by climate change and related hazards through the end of the century, informing the 2023 MA SHMCAP.

Resilient MA: Climate Change Clearinghouse for the Commonwealth

Resilient MA is a repository for data and information relevant to climate change adaptation and mitigation across the Commonwealth. It provides local climate change science and support tools to support decision-making that enhances climate resilience for local planners, practitioners, policymakers, and the public.

- [2022 Healthy Soils Action Plan](#). Assesses soil conditions and provides a blueprint for how to effectively conserve, protect, restore, and manage soils to improve the vitality of nature and the health and quality of life of residents.
- [Clean Energy and Climate Plan for 2025 and 2030](#). Outlines details on actions that the Commonwealth will undertake through the next decade to ensure that 2025 and 2030 emissions limits are met.
- [Clean Energy and Climate Plan for 2050](#). Sets a goal to achieve net zero greenhouse gas emissions in 2050 through a robust set of goals, strategies, policies, and actions.

3.1.1.7 Economy, Key Sectors, and Employment

Massachusetts is home to a range of job sectors, including technology, science, health care, and maritime. The state is also home to, and supported by, over 120 colleges and universities, many of which are the most prestigious in the U.S. Massachusetts' workforce is composed of more than 3.7 million people, with growth in professional/scientific/technical services, leisure and hospitality, and education and health services. Other key sectors in the Commonwealth include professional/scientific/business services, government, manufacturing, and construction (Massachusetts Executive Office of Labor and Workforce Development, 2023b).

The unemployment rate in the Commonwealth was 3.6 percent as of March 2023 (Massachusetts Executive Office of Labor and Workforce Development, 2023a). The Commonwealth gained nearly 682,000 jobs since April 2020, but labor shortages remain concerning. In 2030, it is expected that the number of Massachusetts jobs will increase by 21 percent but the workforce may increase by only 1.5 percent due to earlier retirements and slower population growth (Turken, 2023).

Current and future hazards, as influenced by climate change, have already affected both local and statewide economies across the Commonwealth. Rising temperatures, extreme precipitation, invasive species, drought, extreme weather, and sea level rise have already begun to have direct impacts on the state's economy and those impacts are projected to increase. For example, high heat days could result in workers across the state losing over 10 million hours of work by the end of 2090, equating to over \$778 million in lost wages for the time period (Neidell et al., 2021). Similarly in a report released in December 2022, increasing temperatures throughout the Commonwealth will result in a 30 percent increase in per capita annual municipal expenditures from 2090 to 2099. The greatest increases in municipal expenses due to increasing temperatures are related to heating and cooling of buildings and other services including road maintenance and operations (Zhao, 2022).

Damage to the built and natural environment is often costly and has cascading impacts. For example, waterfront damage from a storm could affect anticipated revenue from recreation, tourism, or the maritime industry, as well as affecting access and services if damage includes transportation and utility assets. Meanwhile, the increasing occurrence

of extreme temperatures can also affect people’s ability to perform outdoor jobs (e.g., farmworkers, construction) or to get to work if roads, transit, or utilities are damaged and service is disrupted. For details on the costs of past hazard and climate events, as well as consequences of future events, please refer to Chapter 5 (Risk Assessment).

3.1.1.8 Levels of Government and Organization

When the Massachusetts Constitution was ratified in 1780, the state became a commonwealth—defined as a body of people that constitute a state or nation. In Massachusetts, the Commonwealth government consists of Executive, bicameral Legislature, and Judiciary branches.

The Executive Branch is led by the Governor and five other constitutional officers who serve in four-year terms (Table 3-6). The Executive Branch oversees state programs and services (Table 3-7). Its oversight does not extend to constitutional officers or independent agencies and commissioners.

In January 2023, Governor Healey signed [Executive Order 604](#), which established the Office of Climate Innovation and Resilience within the Office of the Governor to coordinate the Commonwealth’s climate policy across all state agencies and communities. Melissa Hoffer has been appointed as the first Climate Chief—in fact, Massachusetts is the first state in the U.S. to establish this position at the cabinet level.

Table 3-6. Massachusetts Constitutional Officers (as of March 2023)

Title	Name
Governor	Maura Healey
Lieutenant Governor	Kim Driscoll
Secretary of the Commonwealth	William Francis Galvin
Treasurer and Receiver General	Deborah Goldberg
Attorney General	Andrea Joy Campbell
Auditor	Diana DiZoglio

Table 3-7. Executive Branch Functions

Executive Branch	Role
Executive Office for Administration and Finance	Creates and carries out policies and services for state and local government financial stability, efficiency, and effectiveness.
Executive office of Economic Development	Promotes vibrant communities, growing businesses, and a strong middle class.
Executive Office of Education	Creates opportunities for Massachusetts residents through education. Empowers schools and educators, determines different college and career paths, and facilitates educational reform.
Executive Office of Energy and Environmental Affairs	Aims to protect, preserve, and enhance environmental resources in the Commonwealth and create a clean energy future.

Executive Branch	Role
Executive Office of Health and Human Services	Administers public health programs to improve residents' health, resilience, and independence.
Executive Office of Housing and Livable Communities	Creates more homes and lower housing costs throughout the state. Distributes funding to municipalities, oversees the state-aided public housing portfolio, and operates the state's Emergency Assistance family shelter.
Executive Office of Labor and Workforce Development	Conducts and oversees services to protect the rights, safety, health, and wages of the workforce.
Executive Office of Public Safety and Security	Develops policy and oversees the budget of secretariat agencies, programs, and boards focused on preventing crime, preparing for homeland security, and ensuring resident and visitor safety.
Massachusetts Department of Transportation	Provides reliable, safe, and resilient transportation infrastructure.
Executive Office of Technology Services and Security	Provides secure, quality digital services, tools, and information.
Executive Office of Veterans' Services	Advocates for veterans and provides support for veterans and their families.

Source: Commonwealth of Massachusetts (2023a).

The Legislative Branch makes or changes state laws. Is composed of the Senate (40 members serving two-year terms) and the House of Representatives (160 members, also serving two-year terms). Together, these bodies create the General Court.

The Judicial Branch interprets laws. It is composed of the following:

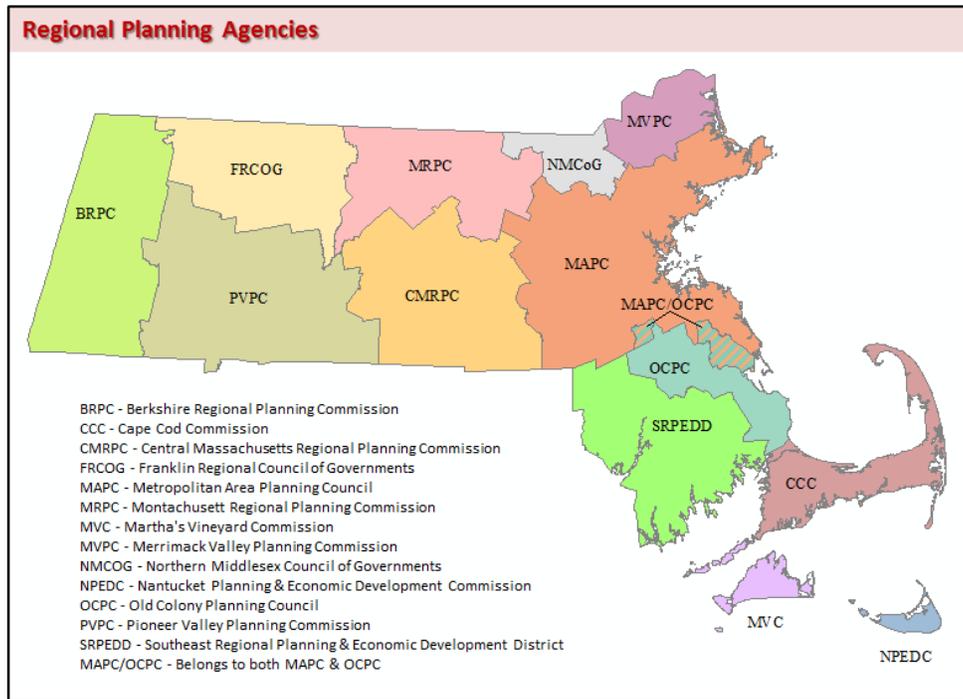
- The Supreme Judicial Court, led by a Chief Justice and six associate, governor-appointed justices
- The Appeals Court
- The Executive Office of the Trial Court
- Seven Trial Court departments
- Massachusetts Probation Services
- The Office of Jury Commissioner

The 2023 MA SHMCAP covers the entirety of the Commonwealth of Massachusetts, which has 14 counties. Some of these have county governments and others rely on localities for government services (see Figure 3-6). County governments exist in Barnstable, Bristol, Dukes, Nantucket, Norfolk, and Plymouth counties.

3.1.1.8.1 Regional

The Massachusetts General Laws established 13 planning regions throughout the Commonwealth. Within each of these, a regional planning agency collaborates with local

municipal governments and organizations to develop and implement comprehensive planning projects relating to populations, jobs and economic development, transportation, and environment (MassGIS, 2022). Regarding regional collaboration, the Commonwealth has established the MVP Program, which provides funding and technical assistance to localities in assessing vulnerabilities and developing resilience plans. These plans, combined with local hazard mitigation plans, fulfill certain regulatory requirements described in the FEMA *Local Mitigation Plan Review Guide*. After completing the MVP program, communities are MVP certified; this gives them increased standing in state grant programs and makes them eligible for MVP Action Grant funding, which funds priority action implementation.



Source: MassGIS (2022).

Figure 3-6. The Commonwealth’s 13 planning agencies.

3.1.1.9 Natural Setting and Land Management

Massachusetts has 62 percent forest cover, and 75 percent of its forests are privately owned (UMass Amherst, n.d.). The Commonwealth also has over 1,500 miles of coastal areas and 48,000 acres of wetlands, including tidal and non-tidal wetlands (NOAA, n.d.) The Massachusetts Department of Conservation and Recreation manages over 150 parks across the state, including parks with mountains, freshwater and saltwater beaches, rivers and streams, and other natural features. As of June 2021, over 1.7 million acres of land throughout the Commonwealth were protected or preserved, which encompasses approximately a quarter of the total land in the state (Sutcliffe et al., 2021). Protecting and expanding the state’s natural resources is a critical strategy that will increase resilience,

support climate adaptation, provide for the sequestration and storage of greenhouse gas emissions, and protect people and natural assets.

Massachusetts granted home rule authority to municipal governance, allowing towns and cities to adopt ordinances and bylaws to regulate the use of land, buildings, and structures (Commonwealth of Massachusetts, 2023b). Since the Commonwealth does not manage zoning and construction permits, it does not have direct influence over land use decisions within Massachusetts. However, it has the authority to support local municipalities’ land use decisions by providing information on hazards and climate change risks; providing technical assistance for risk reduction; and encouraging safe and resilient development through funding support, resilient codes, and other best practices.

3.1.1.10 Statewide Assets

According to information provided by the Division of Capital Asset Management and Maintenance (DCAMM), the Commonwealth owns over 657,891 acres and over 5,000 buildings as of 2022 (Table 3-8). Executive offices within the Commonwealth are responsible managing other infrastructure, including roads, bridges, rails, buildings, culverts, open spaces, parks, beaches, trails, ports, pump stations, and dams. The Division’s data set also identifies critical facilities, such as police/fire stations, military facilities, hospitals, residential facilities and housing, and emergency operation centers. The protection, preservation, and resilience of these statewide and critical assets and functions they serve are considered throughout the 2023 MA SHMCAP—as are other state, regional, and local assets, resources, and services as further described in Chapter 5 (Risk Assessment).

Table 3-8. Summary of State-Owned Land and Buildings as of 2022

State Entity	Land (Acres)	Building		Improvements	
		Count	Square Feet	Count	Square Feet
Department of Transportation	6,777	704	3,527,713	290	3,026,096
Executive Office for Administration and Finance	4,077	200	4,487,306	59	100,523
Executive Office of Education	7,602	1,029	46,216	398	12,025,830
Executive Office of Energy and Environmental Affairs	623,715	1,709	6,327,880	2,506	101,771,926
Executive Office of Health and Human Services	2,615	416	8,725,282	63	168,705
Executive Office of Housing and Economic Development	0.33	0	0	0	0
Executive Office of Labor and Workforce Development	1.96	5	67,412	1	0
Executive Office of Public Safety and Security	9,264	774	9,041,916	144	1,644,972

State Entity	Land (Acres)	Building		Improvements	
		Count	Square Feet	Count	Square Feet
Executive Office of Technology Services and Security	2.18	1	146,984	0	0
Independent authorities and quasi-public agencies	2,854	45	1,224,684	28	285,449
Judicial Branch	148	67	5,048	9	60,200
Secretary of the Commonwealth	5.03	1	100,000	0	0
Sheriffs	826	180	4,535,247	37	11,126
Federally owned land with state structures	0	12	4,453	17	5,523,024
Municipality-owned land with state structures	0	18	76,183	22	675,508
Privately owned land with state structures	0	5	28,748	11	10,938
Total	657,891	5,166	89,558,816	3,585	125,304,297

Source: Massachusetts Division of Capital Asset Management and Maintenance (2022).

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