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SECTION 4. STATE PROFILE

The Commonwealth of Massachusetts is one of six New England states that make up FEMA Region I. The name Massachusetts comes from Algonquian Indian words that mean the great mountain, an apparent reference to the tallest of the Blue Hills, a recreation area south of the Town of Milton. Massachusetts is one of the original 13 states (6th) of the Union (February 6, 1788). Its motto is *Ense Petit Placidam Sub Libertate Quietem*, which means “By the Sword We Seek Peace, But Peace Only Under Liberty.” The state nickname is “the Bay State.”

Massachusetts is the 14th most populated state in the nation. The state capital, Boston, is the most densely populated metropolitan area in the state. With a well-educated population, the state maintains a relatively high income level (\$51,304 average per capita income—ranked 3rd in the nation) and a relatively diversified economy.

4.1 GOVERNMENT

4.1.1 Constitution

The Massachusetts constitution was ratified in 1780 during the Revolutionary War, nine years before the United States Constitution was adopted. It is the oldest written constitution still in use in the world. It specifies three branches of government: executive, legislative, and judicial.

4.1.2 Designation as Commonwealth

Massachusetts, like Pennsylvania, Virginia, and Kentucky, is called a “commonwealth,” the term used in its constitution. When the constitution was ratified, commonwealth was a popular term for a body of people constituting a nation or state. The title was incorporated into the second draft of the state constitution, written by John Adams. This draft, under the heading “Frame of Government,” states, “that the people...form themselves into a free, sovereign, and independent body politic, or state by the name of The Commonwealth of Massachusetts.” The people had rejected the first draft of the constitution in 1778, which, along with all previous acts and resolves, used the name “State of Massachusetts Bay.”

4.1.3 Organization of State Government

The State House in Boston is the primary seat of Massachusetts government. Six constitutional officers are elected for four years: The following are the officers as of January 2013:

- Governor: Deval Patrick
- Lieutenant Governor: Timothy P. Murray
- Secretary of the Commonwealth: William Francis Galvin
- Treasurer and Receiver General: Steven Grossman
- Attorney General: Martha Coakley
- Auditor: Suzanne Bump

The official name of the legislative body for Massachusetts is the General Court. It consists of a Senate, with 40 members elected every two years, and a House of Representatives, with 160 members elected every two years.

The Supreme Judicial Court consists of Chief Justice Margaret H. Marshall and five associate justices. The governor, with the advice and consent of an executive council, appoints all justices.

4.1.4 Counties

County government in Massachusetts, as in all of New England, is not a strong entity. The county level of government is not mentioned in the state constitution. It was established later by legislative action. The 14 counties, roughly from west to east, are Berkshire, Franklin, Hampshire, Hampden, Worcester, Middlesex, Essex, Suffolk, Norfolk, Bristol, Plymouth, Barnstable, Dukes, and Nantucket.

Massachusetts' counties were regional administrative districts before the Revolutionary War. Throughout Massachusetts' history the counties administered jails, health facilities, agricultural schools, registries of deeds and probate, county courthouses, county roads, and extension services.

For many years, there was criticism of county government as wasteful and inefficient. There were recommendations to abolish all county governments and transfer most of their functions to state agencies and their assets (land and buildings) to the Commonwealth. Counties as geographical and/or political regions have not been abolished or restructured, but their governments have been. Registers of deeds and probate, sheriffs, and district attorneys are still elected in county political districts, even where county government has been abolished. In counties that have not been abolished, county commissioners and treasurers are still elected.

Home rule legislation allows officials or voters in a county to establish a regional charter commission to study its government. The commission can submit one of three model charters for voter approval in that county at a statewide election or it can submit a special charter, which must first be approved by the state legislature. Cities and towns may choose a regional council of government charter, which is binding on cities or towns where a majority of voters approve it. The regional council of governments can provide services to cities and towns such as planning, public safety, engineering, water, and waste disposal. The participating communities pay assessments based on local property valuation. The legislature approved special charters to allow several counties to become regional councils of government.

4.1.5 Municipalities

There are 351 cities and towns in Massachusetts, each with its own governing body. Typically, elected mayors govern Massachusetts' cities and elected officials called selectmen govern the towns; however, there are exceptions. A board of selectmen is usually elected for a one-or-two-year term, and citizens participate in an annual town meeting. The open town meeting is the active legislature in a town. Some communities have a representative open town meeting, while others; have a true "open" town meeting. A current listing of state, county, and municipal government agencies and contacts may be found at the Commonwealth of Massachusetts website at www.mass.gov.

4.1.6 Planning Regions

Chapter 40B of the Massachusetts General Laws established 13 planning regions throughout the Commonwealth in 1963. These planning regions work in concert with partnering jurisdictions and organizations to complete planning tasks such as development of regional mitigation plans, transportation planning, economic growth studies, land use and energy planning, historic preservation, open space and natural resources, water and coastal resources, and mapping/GIS. These planning regions also support the Commonwealth's District Local Technical Assistance Program to pursue a variety of municipal shared-service initiatives and planning projects through a region-wide solicitation process. The regions are established as commissions or councils (collectively referred to as commissions in this SHMP), which are not federal, state or county agencies but regional advisory boards with representatives from each member

community. The commissions are composed of a member from each community represented. The 13 planning commissions represent jurisdictions as shown in Figure 4-1.

4.2 GEOGRAPHY

The following is a general overview of Massachusetts geography:

- Area: 8,257 square miles (land and water), 7,838 square miles (land only)—45th largest in the U.S.
- Largest body of water: Quabbin Reservoir (39 square miles)
- Longest river: Charles River (80 miles)
- Highest elevation: Mt. Greylock (3,491 feet)
- Lowest elevation: Atlantic Ocean (sea level)
- Number of state parks: 107
- Largest state park: October Mountain State Forest (15,710 acres)
- Number of national historical parks, seashores, and historic sites: 20
- Largest national area: Cape Cod National Seashore (43,500 acres)
- Municipal watershed lands: 245,000 acres
- Privately owned forest land: 3.2 million acres
- State forests and parks: 285,000 acres



Figure 4-1. Massachusetts Regional Planning Agencies

4.2.1 Coastal Areas

Massachusetts features six coastal zones (North Shore, Boston Harbor/Massachusetts Bay, South Shore, Cape Cod and Islands, and South Coast), and varying inland regions. Each area has characteristics that affect its susceptibility to the hazards known to occur in the Commonwealth. Massachusetts' topography varies from rocky shores, sandy beaches, and salt marshes on the east coast, through rolling hills and fertile valleys, to wooded hills in the western part of the state.

4.2.2 Mountains

Substantial ranges in Massachusetts are the Berkshire Hills, Blue Hills, Holyoke Range, and Wapack. Mount Greylock in Berkshire County is the highest mountain in Massachusetts, at 3,491 feet. Other noteworthy mountains are Mount Williams in North Adams (2,951 feet); East Mountain in Hancock (2,660 feet); Mount Everett in Mt. Washington (2,602 feet); Spruce Hill in Adams (2,588 feet); Mount Frissel in Mt. Washington (2,453 feet); Potter Mountain in Lanesboro (2,391 feet); French Hill in Peru (2,214 feet); and Mount Wachusett in Princeton (2,006 feet).

4.2.3 Rivers

There are 4,230 miles of rivers in the Commonwealth of Massachusetts. The longest in-state river is the Charles, flowing 80 miles. The longest river in New England is the Connecticut, which flows from north to south for 67.5 miles in Massachusetts. Its tributaries are the Deerfield, Westfield, Chicopee, and Miller's rivers. Other major rivers in western Massachusetts are the Housatonic River, which flows south, and the Hoosic River, which flows north between the Hoosic and Taconic mountain ranges.

The Merrimack River, in the northeast, originates in New Hampshire and empties into the Atlantic Ocean. The Nashua and Concord rivers are major tributaries of the Merrimack. The Blackstone River flows south from the center of Massachusetts. The Mystic and Charles rivers flow into Boston Harbor, and the Taunton River enters Mount Hope Bay at Fall River.

4.2.4 Lakes

Massachusetts has more than 3,000 lakes and ponds. The largest of these are the Quabbin Reservoir (24,704 acres) and Wachusett Reservoir (4,160 acres), which are manmade. These two reservoirs provide metropolitan Boston with most of its public water supply.

The largest lakes of natural origin are Assawompsett Pond (2,656 acres) in Lakeville and Middleborough, drained by the Taunton River; North Watuppa Pond (1,805 acres) and South Watuppa Pond (1,551 acres) in Fall River and Westport, drained by the Quequechan River; Long Pond (1,361 acres) in Lakeville and Freetown, drained by the Taunton River; Lake Chargoggagogmanchaugagogchaubunagungamaug (1,188 acres)—usually called Lake Webster—in Webster, drained by the French River; Herring Pond (1,157 acres) in Edgartown on the island of Martha's Vineyard; Great Quittacas Pond (1,128 acres) in Lakeville, Rochester, and Middleborough, drained by the Taunton River; Lake Quinsigamond (1,051 acres) in Worcester, Shrewsbury, and Grafton drained by the Blackstone River; and Monponsett Pond (756 acres) in Halifax and Hanson, drained by the Taunton River.

4.2.5 Islands

Lying off Cape Cod are Martha's Vineyard, Nantucket, and the Elizabeth Islands:

- Martha's Vineyard, triangular in shape, is about 19 miles long and less than 10 miles wide. It contains the towns of Edgartown, Chilmark, Tisbury, West Tisbury, Aquinnah, and Oak Bluffs and is a popular summer resort.

- Nantucket, also roughly triangular, about 15 miles long and 3 to 4 miles wide, was once famed for its whaling industry. It too is now a popular summer resort.
- The Island of Tuckernuck is an island in the town of Nantucket, west of Nantucket Island and east of Muskeget. The island has an area of about 900 acres (1.4 square miles), and is privately owned by summer residents. The oldest home on the island was built in the mid-18th century. The island has no paved roads or public utilities.
- Muskeget Island is a low sandy island west of Tuckernuck Island and Nantucket, in the town of Nantucket. It has an area of 292 acres, and is primarily owned by the Town of Nantucket. Muskeget has a high elevation of 14 feet. Its northern shore is mostly sand dunes, and its southern shore is mainly marshes.
- The Elizabeth Islands are a group of about 22 small islands between Vineyard Sound and Buzzards Bay.

The Boston Harbor Island group includes the Four Brewsters, Bumpkin, Calf, Deer, Gallop's, George's, Grape, The Graves, Green, Hangman, Langley, Long, Lovell's, Moon, Nixes Mate, Peddock's, Raccoon, Ragged, Rainsford, Sara, Sheep, Slate, Spectacle, and Thompson's. Some islands have been made part of the mainland by the great amount of landfill that has gone on over the years. Governor's Island, where the first apple and pear trees in America were planted, is now a part of Boston's Logan International Airport. Most of the islands have been used for farming, resort-recreation areas, public facilities, or fortifications.

4.3 CLIMATE

The Commonwealth of Massachusetts, in general, has a humid continental climate with temperatures that average 68°F to 72°F in the summer and 28°F to 32°F in the winter. The mean annual precipitation ranges from 40 to 46 inches; one-third of this in snow. The growing season varies from area to area, with the period between the last killing frost in the spring and the first killing frost in the fall lasting approximately 160 days. The area is subject to a variety of severe weather events, which are further discussed in the risk assessment portion of this SHMP.

4.4 DEMOGRAPHIC CHARACTERISTICS

4.4.1 Current Population

Massachusetts is a relatively slow-growing, densely populated state. The 2010 population was 6,547,629, ranking 14th in the U.S. The state's population is concentrated in its eastern portion. According to current statistics, 99.6 percent of the state's population lives in a metropolitan area. As of July 1, 2011, population density was estimated to be 840.2 persons per square mile, compared to 88.1 for the United States as a whole. Among the 50 states, only Rhode Island and New Jersey have a greater population density (University of Massachusetts, 2013). The average household size is 2.50 persons, and the average family size is 3.10 persons.

The city of Boston is the largest city in New England, accounting for 9.5 percent of the Commonwealth's population. Boston is the hub of the Boston-Cambridge-Quincy Metropolitan Statistical Area, which includes the two southeastern New Hampshire counties and had a total population as of July 1, 2011 estimated at 4,591,112, or 34.8 percent of the total New England population. The three-county Boston-Quincy, MA metropolitan division is the largest component of that Metropolitan Statistical Area, with a total population as of July 1, 2011 estimated at 1,903,947 (University of Massachusetts, 2013).

The Commonwealth's 14 counties vary in size and population from Nantucket (44.97 square miles and population of 10,172) to Middlesex (817.82 square miles and population of 1,503,085) and Worcester

(1,510.77 square miles and population of 798,552). Table 4-1 lists county populations and areas. Table 4-2 lists the largest and smallest municipalities in Massachusetts. The largest municipality is the City of Boston, with a 2010 population of 617,594. More than half of Massachusetts' total population lives in the Greater Boston area. The smallest is the Town of Gosnold, with a 2010 population of 75.

TABLE 4-1. COUNTY POPULATION AND AREA		
County	Population (2010)	Total Area (sq. miles)
Barnstable	215,888	393.72
Berkshire	131,219	926.83
Bristol	548,285	553.10
Dukes	16,535	103.25
Essex	743,159	492.56
Franklin	71,372	699.32
Hampden	463,490	617.14
Hampshire	158,080	527.26
Middlesex	1,503,085	817.82
Nantucket	10,172	44.97
Norfolk	670,850	396.11
Plymouth	494,919	659.08
Suffolk	722,023	58.15
Worcester	798,552	1,510.77

Source: 2010 U.S. Census Data

TABLE 4-2. LARGEST AND SMALLEST MUNICIPALITIES BY POPULATION					
Municipality	County	2010 Population	Municipality	County	2010 Population
Largest			Smallest		
Boston	Suffolk	617,594	Alford	Berkshire	494
Worcester	Worcester	181,045	Tolland	Hampden	485
Springfield	Hampden	153,060	Rowe	Franklin	393
Lowell	Middlesex	106,519	Hawley	Franklin	337
Cambridge	Middlesex	105,162	Tyringham	Berkshire	327
New Bedford	Bristol	95,072	Aquinnah	Dukes	311
Brockton	Plymouth	93,810	New Ashford	Berkshire	228
Quincy	Norfolk	92,271	Mount Washington	Berkshire	167
Lynn	Essex	90,329	Monroe	Franklin	121
Fall River	Bristol	88,857	Gosnold	Dukes	75

Source: 2010 U.S. Census Data

4.4.2 Population Trends

Statewide Population Trends

Statewide population trends indicate a slow population growth, below the national average. According to Census Bureau revised estimates released in February 2011, the Massachusetts population growth since 2010 was estimated at 0.6 percent, ranking the Commonwealth 32nd in the U.S. By 2020, the Massachusetts population is anticipated to reach 6,767,732, only about 172,000 more (3 percent more) than the current population. Table 4-3 shows population changes between 1920 and 2010. The Commonwealth experienced a growth of 3.13 percent, or 198,532 people, between 2000 and 2010, and 15.1 percent, or 858,459 people, from 1970 to 2010. Population grew only 0.84 percent from 1970 to 1980, which was the slowest growing decade between 1920 and 2010. The fastest growing decade was between 1960 and 1970, with a 10.5 percent increase. Figure 4-2 compares Massachusetts annual growth since 1982 to the growth rates for all of New England and for the United States.

Year	Population	Change	% Difference
1920	3,852,356	N/A	N/A
1930	4,249,614	397,258	10.31
1940	4,316,721	67,107	1.58
1950	4,690,514	373,793	8.66
1960	5,148,578	458,064	9.77
1970	5,689,170	540,592	10.50
1980	5,737,037	47,867	0.84
1990	6,016,425	279,388	4.87
2000	6,349,097	332,672	5.53
2010	6,547,629	198,532	3.13

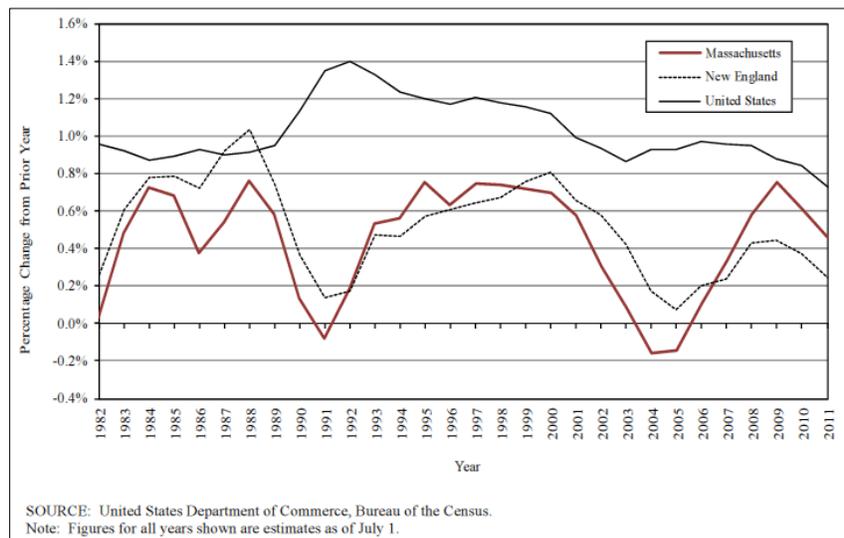


Figure 4-2. Annual Percentage Change in Population, 1982 - 2011

Population Trends by County

Table 4-4 summarizes growth projections by county. The highest growth was in Suffolk and Worcester counties. According to the U.S. Census data, four of the fastest growing cities are in Worcester County and three are in Berkshire County (see Figure 4-3).

	Population			Population Change		2020 Projection		Housing Units	
	2000	2009	2011	2009- 2011	2000- 2011	Population	Change from 2011	2009	2011
Barnstable	222,230	221,151	215,769	-5,382	-6,461	299,035	39%	155,686	161,001
Berkshire	134,953	129,288	130,458	1,170	-4,495	118,452	-9%	68,539	68,497
Bristol	534,678	547,433	548,922	1,489	14,244	576,868	5%	225,670	231,083
Dukes	14,987	15,974	16,766	792	1,779	21,822	30%	16,381	17,385
Essex	723,419	742,582	748,930	6,348	25,511	787,032	5%	299,508	307,559
Franklin	71,535	74,778	71,599	-3,179	64	73,806	3%	33,362	33,806
Hampden	456,228	471,081	463,783	-7,298	7,555	453,115	-2%	191,380	192,197
Hampshire	152,251	156,044	157,822	1,778	5,571	163,233	3%	61,949	62,766
Middlesex	1,465,396	1,505,006	1,518,171	13,165	52,775	1,469,494	-3%	598,481	614,036
Nantucket	9,520	11,322	10,142	-1,180	622	14,426	42%	10,657	11,776
Norfolk	650,308	666,303	675,436	9,133	25,128	652,440	-3%	266,793	271,502
Plymouth	472,822	498,344	497,579	-765	24,757	517,664	4%	194,237	201,419
Suffolk	689,807	753,580	730,932	-22,648	41,125	776,811	6%	305,127	317,327
Worcester	750,963	803,701	801,227	-2,474	50,264	843,534	5%	320,551	328,586
State Total	6,349,097	6,596,587	6,587,536	-9,051	238,439	6,767,732	3%	2,748,321	2,818,940

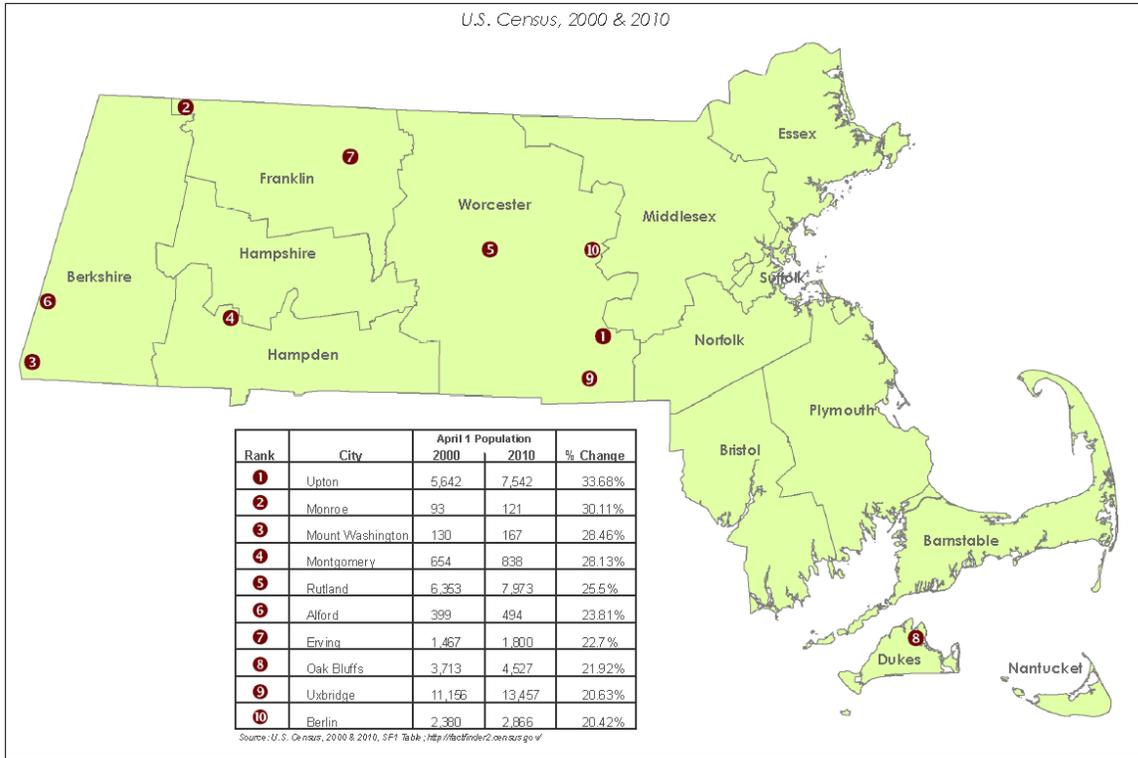


Figure 4-3. Fastest Growing Cities by Population

4.4.3 Socioeconomic Status

This section provides information on characteristics of potentially at-risk populations in the Commonwealth. This information was captured from various sources, including the U.S. Census data, the University of Massachusetts 2013 Due Diligence Report, and the various plans reviewed (as indicated).

Poverty

Income influences the type of housing people live in, whether they can engage in mitigation actions to reduce the impacts of hazards, and how long it takes to recover from a disaster event. In addition, individuals in lower income brackets often live in hazard-prone areas because the cost of living may be lower. The ability to prepare for self-sustainment is often also influenced by the ability to maintain surplus supplies, which may not be feasible for families with limited income beyond a month-to-month capacity.

Table 4-5 summarizes poverty data by county. Income is based on factors including the individual, the economy, availability of jobs, and educational opportunity. Expenses can vary by location. Rural places are less expensive but may offer fewer jobs; urban areas can be costly, even for renters.

TABLE 4-5. AMERICAN COMMUNITY SURVEY 2009 – 2011 3-YEAR ESTIMATES FOR POVERTY, BY COUNTY			
	Total Population	Below Poverty Level	
		Number	%
Barnstable	212,204	19,939	9.40%
Berkshire	125,418	16,121	12.90%
Bristol	534,497	63,244	11.80%
Dukes*	16,217	1,649	10.20%
Essex	728,751	79,988	11.00%
Franklin	70,312	8,840	12.60%
Hampden	448,128	77,672	17.30%
Hampshire	135,184	17,274	12.80%
Middlesex	1,455,244	115,804	8.00%
Nantucket*	9,990	880	8.80%
Norfolk	653,134	40,407	6.20%
Plymouth	484,536	37,497	7.70%
Suffolk	684,311	148,692	21.70%
Worcester	772,817	81,125	10.50%

* These estimates are from the American Community Survey 2007-2011 5-year estimates; 3-year estimates are not available for these counties.

Education

Historically, education impacts salary levels. Availability of a skilled and well-educated population is an important resource for the Commonwealth. Only the District of Columbia had a higher percentage of adults with a bachelor's degree or higher in 2011, according to the Census Bureau's American Community Survey (ACS). The ACS also found that Massachusetts had a smaller portion of persons who had not completed high school, 10.8 percent, than the national average of 14.1. Massachusetts' black and Hispanic populations achieved college degrees at roughly half the rate of its white population but their rates were higher than the national averages. The most current Census data are shown in Figure 4-4 through Figure 4-6. Current education by county is presented in Table 4-6.

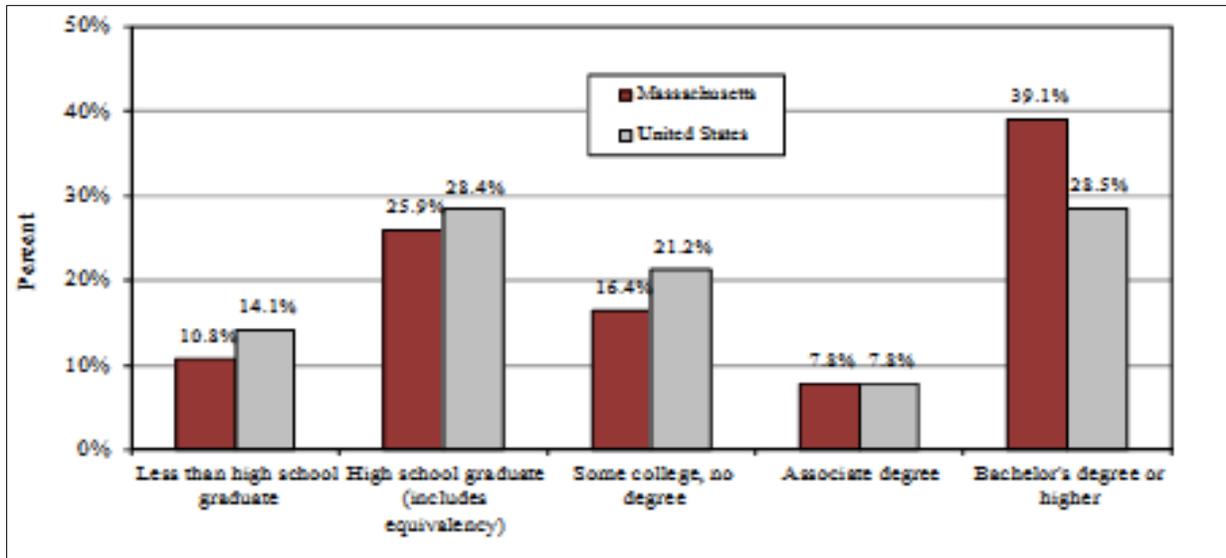


Figure 4-4. Educational Attainment of Population 25 and Older, 2011

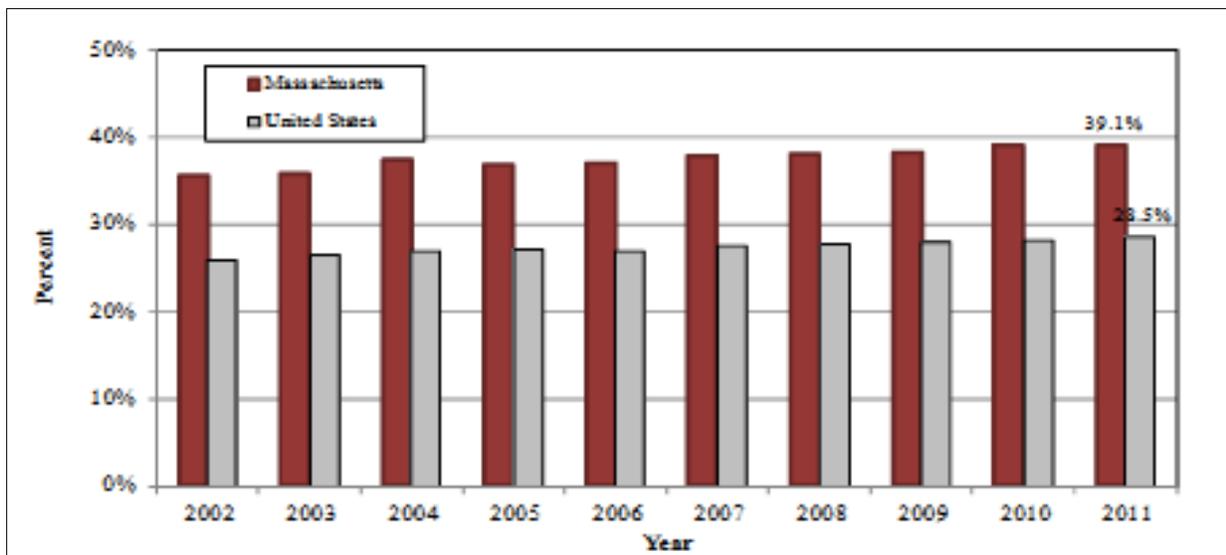


Figure 4-5. Percent of Population with a Bachelor's Degree or Higher, 2002 - 2011

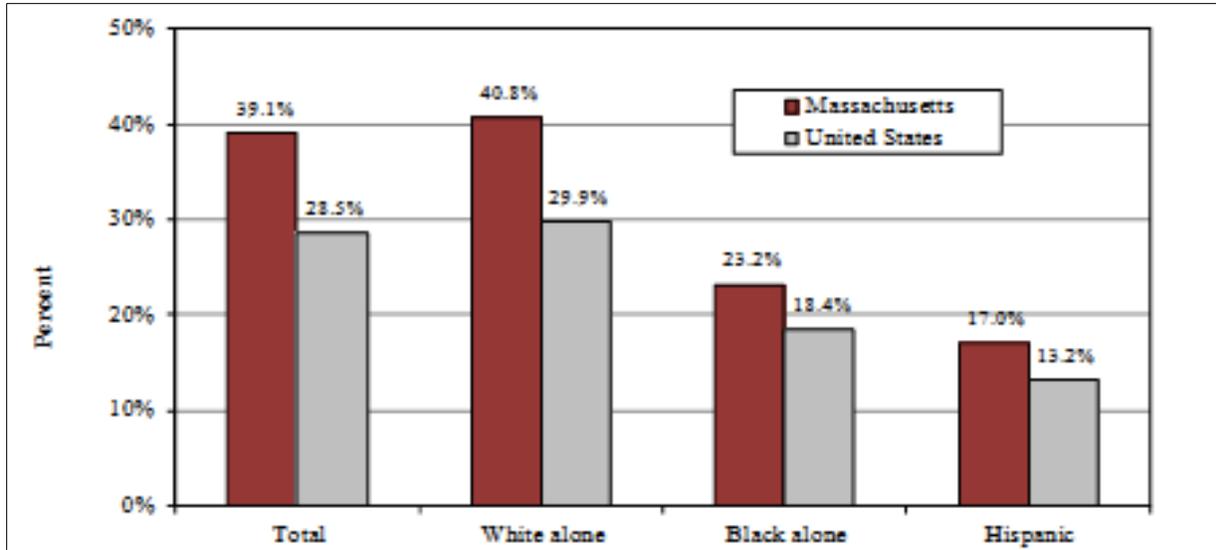


Figure 4-6. Percent of Population with a Bachelor's Degree or Higher, by Ethnic Origin, 2011

TABLE 4-6. AMERICAN COMMUNITY SURVEY 2009 – 2011 3-YEAR ESTIMATES FOR EDUCATION, BY COUNTY				
	Less than High School Graduate	High School Graduate/ GED	Some College/ Associate's Degree	Bachelor's Degree or higher
Barnstable	8,726	40,042	49,512	64,031
Berkshire	8,862	30,698	25,215	26,917
Bristol	67,048	110,704	96,512	93,907
Dukes *	844	2,631	3,254	5,031
Essex	54,875	132,632	130,024	183,040
Franklin	4,074	14,619	15,560	16,767
Hampden	49,895	94,282	83,754	72,264
Hampshire	6,887	24,194	24,530	40,212
Middlesex	81,045	225,257	204,251	516,702
Nantucket*	496	1,871	18,442	3,051
Norfolk	26,915	97,594	108,106	224,588
Plymouth	25,093	99,667	94,312	110,116
Suffolk	75,327	113,310	88,764	184,511
Worcester	56,527	146,961	143,419	178,293

* These estimates are from the American Community Survey 2007-2011 5-year estimates; 3-year estimates are not available for these counties

Ethnicity

History has demonstrated that certain population groups generally experience longer recoveries due to lower incomes, lower savings and insurance, and their use of relief organizations differently. Table 4-7 summarizes ethnicity in the state. In 2010, 97.4 percent of the population reported only one race. Hispanics (of any race) made up 9.6 percent of the state's population, African-Americans 6.6 percent, Asians 5.3 percent and Native Americans 0.03 percent. Distribution by county is presented in Table 4-8.

	Percent of Total	Population
Hispanic	9.59%	627,654
African-American	6.63%	434,398
Asian	5.34%	349,768
Native Hawaiian and Pacific Islander	0.03%	2,223
Native American	0.29%	18,850
Other	4.66%	305,151
Caucasian	80.41%	5,265,236
Multiple	2.63%	172,003

	Total Population	Black or African American	American Indian/ Alaska Native	Asian	Native Hawaiian/ Pacific Islander	Other Race
Barnstable	212,204	4,599	N/A	2,195	N/A	2,076
Berkshire	125,418	3,013	N/A	N/A	N/A	N/A
Bristol	534,497	18,432	N/A	10,271	N/A	13,997
Dukes*	16,217	679	260	118	N/A	156
Essex	728,751	24,199	1,197	23,514	N/A	69,339
Franklin	70,312	N/A	N/A	N/A	N/A	N/A
Hampden	448,128	38,646	N/A	9,094	N/A	40,531
Hampshire	135,184	2,600	N/A	6,120	N/A	N/A
Middlesex	1,455,244	65,080	1,809	135,914	N/A	36,246
Nantucket*	9,990	799	N/A	111	N/A	28
Norfolk	653,134	36,788	N/A	57,146	N/A	7,432
Plymouth	484,536	40,376	N/A	6,307	N/A	10,341
Suffolk	684,311	157,312	2,001	55,484	N/A	50,851
Worcester	772,817	29,592	1,361	31,822	N/A	20,767

* These estimates are from the American Community Survey 2007-2011 5-year estimates; 3-year estimates aren't available for these counties

Historically, 14.7 percent (957,414 persons) of the Commonwealth's population was not born in the United States. Approximately 50 percent identified with a single-ancestry group and 33 percent with the multi-ancestry group; 11.7 percent were not specified. According to the 2007-2011 American Community Survey, of the single-ancestry groups, the six leading groups were Irish (23.3 percent), Italian (14 percent), English (11.3 percent), French (8.2 percent), German (6.6 percent), and Polish (5.1 percent).

Language

Language differences can pose difficulties in understanding and implementing preparedness and mitigation actions, as well as accessing and using available disaster relief. Those who do not speak English as a primary language have a barrier preventing them from preparing for a disaster, responding to an event, or applying for assistance after a disaster. A knowledge of the languages spoken in a community allows emergency responders to prepare for communication difficulties by establishing resources to help address any issues that may arise. Table 4-9 provides an overview of language data by County.

	Total Population (> 5 years old)	People who speak only English at home	% English Only Speakers	People who speak a language other than English at home	% Other Language Speakers
Barnstable County	207,285	189,823	91.6%	17,462	8.4%
Berkshire County	124,949	115,660	92.6%	9,289	7.4%
Bristol County	517,194	409,665	79.2%	107,529	20.8%
Essex County	700,716	534,930	76.3%	165,786	23.7%
Dukes County*	15,288	14,200	92.9%	1,088	7.1%
Franklin County	67,998	64,216	94.4%	3,782	5.6%
Hampden County	435,794	330,341	75.8%	105,453	24.2%
Hampshire County	151,858	136,446	89.9%	15,412	10.1%
Middlesex County	1,420,438	1,063,720	74.9%	356,718	25.1%
Nantucket County*	9,506	8,247	86.8%	1,259	13.2%
Norfolk County	633,902	517,637	81.7%	116,265	18.3%
Plymouth County	466,970	413,449	88.5%	53,521	11.5%
Suffolk County	683,227	429,076	62.8%	254,151	37.2%
Worcester County	751,856	619,107	82.3%	132,749	17.7%

* 2007-2011 American Community Survey 5-year Estimates, as 3-year ACS estimates are not available for these counties

Age Distribution

Individuals in the very young and elderly age groups are more vulnerable than other age groups to hazards of concern, with reduced ability to self-manage care. Additional care and resources are often required to meet the needs of these age groups. Preparedness and recovery activities may overlook senior citizens. Their age could lead them to have difficulty after a disaster, perhaps not qualify for loans, or become further disabled because of the disaster. Table 4-10 presents current age data by county. Projections through 2030 are shown on Table 4-11 and Figure 4-7. The 65-and-over and 85-and-over age groups are expected to grow in the coming decades.

	Total Population	Age		
		under 18 years	18-64 years	65 years and over
Barnstable	212,204	36,542	122,988	52,674
Berkshire	125,418	24,831	77,143	23,444
Bristol	534,497	120,180	340,402	73,915
Dukes*	16,217	3,505	10,233	2,479
Essex	728,751	170,049	457,123	101,579
Franklin	70,312	13,684	46,064	10,564
Hampden	448,128	107,303	278,016	62,809
Hampshire	135,184	25,589	90,251	19,344
Middlesex	1,455,244	317,352	947,869	190,023
Nantucket*	9,990	2,058	6,777	1,155
Norfolk	653,134	150,432	409,010	93,692
Plymouth	484,536	117,514	300,948	66,074
Suffolk	684,311	125,976	485,963	72,372
Worcester	772,817	183,947	491,867	97,003

* These estimates are from the American Community Survey 2007-2011 5-year estimates; 3-year estimates aren't available for these counties

**TABLE 4-11.
PROJECTED POPULATION BY AGE GROUP, 2000 - 2030**

Year	0-4	5-17	18-24	25-44	45-64	65-84	85+	All Ages	Median Age
2000	397.3	1,102.8	579.3	1,989.8	1,419.8	743.5	116.7	6,349.1	36.5
2005	395.1	1,055.6	488.9	1,844.0	1,602.5	693.1	103.7	6,182.9	38.2
2010	400.7	1,083.1	670.2	1,769.7	1,817.1	750.6	158.0	6,649.4	38.8
2015	409.7	1,064.2	656.0	1,746.1	1,857.1	856.5	168.9	6,758.6	39.2
2020	422.3	1,070.9	617.5	1,775.8	1,809.3	987.8	172.0	6,855.5	39.5
2025	431.0	1,087.7	616.2	1,782.5	1,703.3	1,137.8	180.1	6,938.6	39.7
2030	430.6	1,115.0	610.7	1,783.9	1,608.7	1,251.2	211.9	7,012.0	40.2

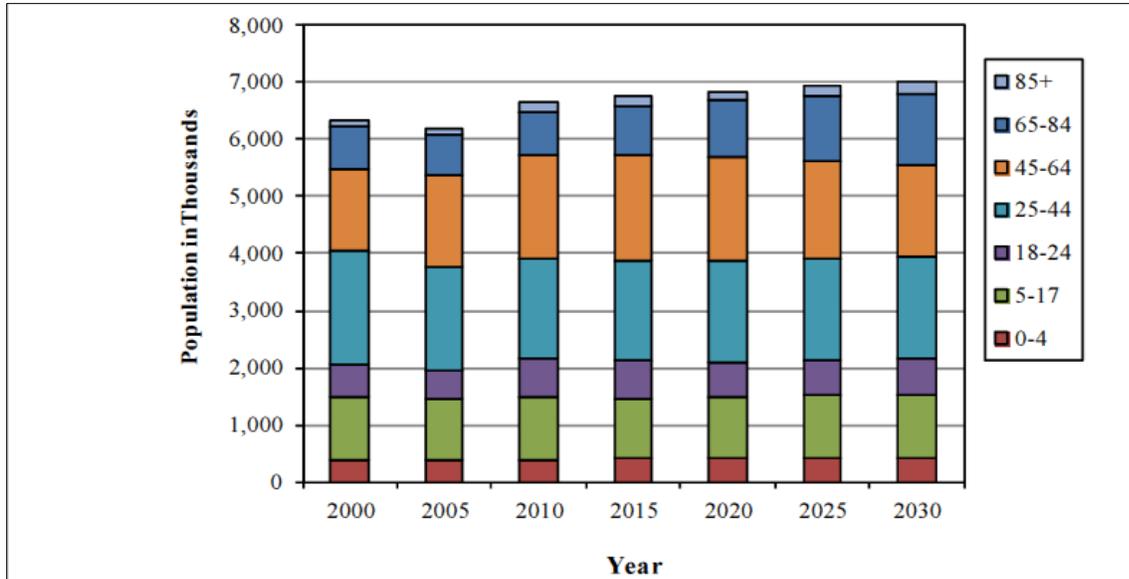


Figure 4-7. Projected Population by Age Group, 2000 – 2030

Disability Status

The 2010 U.S. Census estimates 54 million non-institutionalized Americans with disabilities in the U.S.—about one in five persons. People with disabilities are more likely than the general population to have difficulty responding to a hazard event, due to hearing, sight, mobility or mental impairments. Additionally, a significant percentage of working-age individuals with disabilities may not work, making it difficult for the disabled to prepare in advance of a disaster, or even receive information of a potential event occurring, depending on how the information is presented.

Efforts must be coordinated to meet the access and functional needs of individuals with disabilities. Determining the percentage of population with a disability will provide emergency management personnel and first responders the information necessary to plan by having individuals available to provide services necessary for those with access and functional needs. Emergency managers need to distinguish between *functional* and *medical* needs to allow them to plan for incidents that require evacuations and sheltering.

4.5 HOUSING

The older a home is, the greater the risk that natural disasters pose to it. Homes constructed after international building codes were adopted or after the first flood maps were established are more likely to withstand damage from hazards such as floods, high winds, snow loads, and earthquake because they were built to higher standards. Some jurisdictions are experiencing growth and development at a slightly faster rate than the state average; however, statewide there is no significant increase in development. New residential and commercial development has not experienced a significant amount of change at the statewide level. Statewide during 2011, only 7,725 build permits were issued. Table 4-12 summarizes basic housing data.

	Number	Percent
Occupied housing units	2,443,580	100.0
Owner-occupied housing units	1,508,248	61.7
Renter-occupied housing units	935,332	38.3
Average household size of owner-occupied unit	2.74	(X)
Average household size of renter-occupied unit	2.13	(X)

Source: US Census Bureau, Census 2000 (Most recent as of 2013 writing).
<http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

4.6 LAND DEVELOPMENT

Figure 4-8 shows changes over the past 30 years of the area covered by major land use classifications in Massachusetts. The Executive Office of Environmental Affairs has been encouraging smart growth for more than a decade. The Office’s smart growth efforts include providing information, incentives, and funding to help local leaders and residents make informed decisions about growth and development.



Figure 4-8. 30-Year Change in Land Use

The policies and programs of the Smart Growth and Urban Environments Team attempt to proactively address, through better development and redevelopment, the negative effects of sprawl, which consumes large amounts of open space and farmland, overburdens existing infrastructure, exacerbates tight municipal budgets, and damages natural resources and the environment. Over \$3 million in funding has been provided to municipalities to implement smart growth.

The Community Preservation Act (CPA), signed into law in 2000 (Chapter 267 of the Acts of 2000) and subsequently amended five times, allows communities to create a local Community Preservation Fund to raise money through a surcharge of up to 3 percent of the real estate tax levy on real property for open space protection, historic preservation, and affordable housing. The act also creates a state matching fund, which serves as an incentive to communities to pass the CPA. These principles require communities to incorporate mitigation by protecting, among other things, critical areas and to encourage development in areas outside hazard areas, or standards that reduce vulnerability to hazards and protect public health, safety, and the environment.

4.7 TRANSPORTATION INFRASTRUCTURE

4.7.1 Statewide Authority

The Massachusetts Department of Transportation (Mass DOT) is responsible for maintaining the transportation infrastructure in the Commonwealth of Massachusetts. The Mass DOT Secretary appoints an administrator for each of Mass DOT's four divisions:

- **Highway Division**—The Highway Division includes the roadways, bridges, and tunnels of the former Massachusetts Highway Department and Massachusetts Turnpike Authority, as well as the Tobin Bridge. The Division also includes many bridges and parkways previously under the authority of the Department of Conservation and Recreation. The Highway Division is responsible for the design, construction, and maintenance of the Commonwealth's state highways and bridges. The Division is responsible for overseeing traffic safety and engineering activities including the Highway Operations Control Center to ensure safe road and travel conditions.
- **Rail and Transit Division**—This Division is responsible for all transit initiatives and oversees all regional transit authorities of the Commonwealth. The Mass DOT Board of Directors serves as the governing body of the Massachusetts Bay Transportation Authority. The Rail and Transit Division is responsible for maintaining buses, trolleys, and ferry terminals accounting for 1.2 million weekday trips servicing 175 cities and towns throughout the Commonwealth.
- **Aeronautics Division**—The Aeronautics Division has jurisdiction over the Commonwealth's public use airports, private use landing areas, and seaplane bases. It is responsible for airport development and improvements, aviation safety, aircraft accident investigation, navigational aids, and statewide aviation planning. The Division certifies airports and heliports, licenses airport managers, conducts annual airport inspections, and enforces safety and security regulations. It is responsible for 39 public use airports, which collectively contain approximately 49 miles of paved runways, 23 of which are 5,000 feet or longer. Based on 2008 airport rankings, Logan International Airport was the 20th-busiest airport in North America in terms of passenger volume, and 21st in terms of aircraft movement. In 2009, Logan served over 25.5 million passengers arriving and departing, with over 345,000 total flight operations. (Mass DOT Transportation Facts, 2009).
- **Registry of Motor Vehicles**—The Registry of Motor Vehicles Division is responsible for vehicle operator licensing and vehicle and aircraft registration, available online and at branch offices across the Commonwealth. The Registry oversees commercial and non-commercial vehicle inspection stations.

According to the American Public Transportation Association, every dollar invested in transportation produces \$4 in economic return. The *Massachusetts Statewide Airport Economic Impact Study*, a recent analysis by the Mass DOT Aeronautics Division, estimates that the 39 airports of the Commonwealth, including Logan International Airport, generate \$11.9 billion in total annual economic activity and \$4.9 billion in total annual payroll from the 124,369 jobs that can be traced to the aviation industry. Likewise, commuter rail service to the South Coast is projected to create 3,800 new jobs and generate nearly \$500 million in new statewide economic activity every year.

Mass DOT's single largest operating expense is for snow and ice removal.

4.7.2 Roadways and Traffic Counts

Automobiles are the most common mode of commuting in Massachusetts, as shown in Figure 4-9. Currently, there are 36,000 miles of roadways statewide, with drivers collectively travelling in excess of 54 billion miles annually, consuming approximately 4 billion gallons of gas annually. In Boston, the Central Artery/Tunnel project processes approximately 536,000 vehicles per weekday. This includes 323,000 vehicles entering on the expressways, and 213,000 from local ramps (including the Logan tunnels). The highest traffic volume location in the state is the I-93/I-95 Interchange in Woburn and Reading, processing in excess of 375,000 vehicles per weekday.

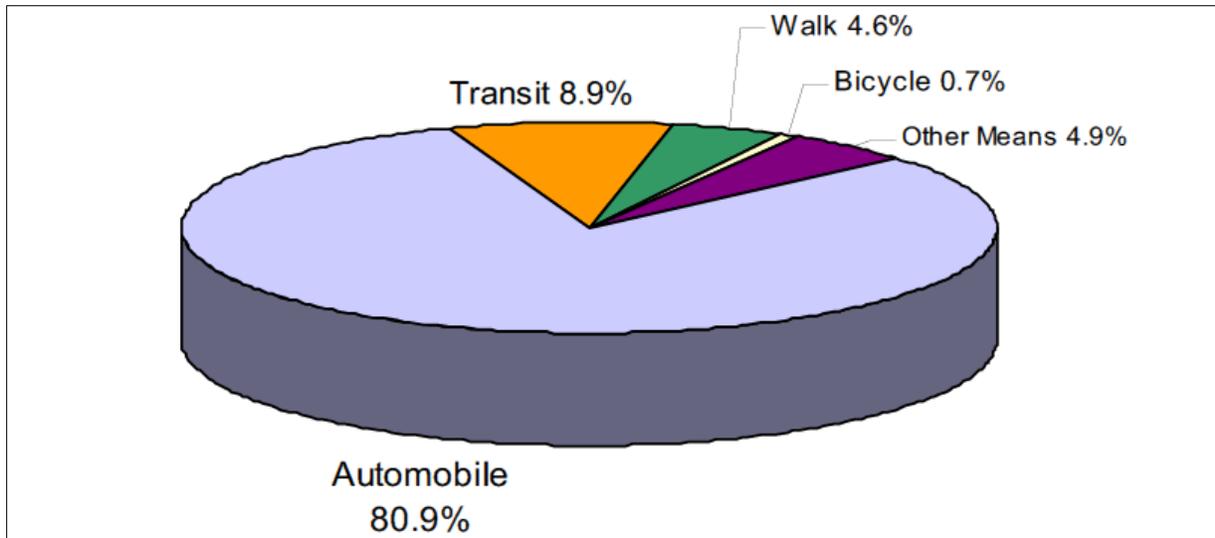


Figure 4-9. Massachusetts Commuting Modes, 2008

4.7.3 Bridges

Bridges are an integral part of the highway infrastructure system and need to be designed to provide safety for the traveling public. Bridge failures can result in the disruption of commerce and services, significant repair costs, and loss of human life. Bridge failure can also leave motorists stranded. If a bridge failure occurs as a result of a disaster event, the impact can be significant, as a lack of ingress and egress to areas by citizens or by first responders can increase risks.

The Commonwealth has been proactive in maintaining the integrity of its bridges. According to the 2010 Annual Report prepared by Mass DOT, the “Governor’s landmark eight-year, \$3 billion Accelerated Bridge Program: has been responsible for repairing deficient and obsolete bridges across the Commonwealth. Since the Patrick-Murray Administration filed legislation approved by the Legislature creating the program in 2008, the number of structurally deficient bridges has dropped from 543 to 494, a decline of nearly 10 percent. Through early fall 2010, Mass DOT advertised more than 110 Accelerated Bridge Program construction projects with a combined construction budget value of nearly \$700 million.” Enhancements to the bridges include structural retrofits to sustain impact from hazard events such as earthquakes, as well as enhancements to improve resiliency from flooding. The Accelerated Bridge Program projects included the I-495 Bridge Bundle, which will replace six major bridges carrying northbound and southbound traffic on I-495.

Ownership of bridges varies from federal highway system bridges to locally owned or private bridges. The 2010 National Bridge Inventory identified 4,299 bridges in the Commonwealth, divided by bridge type as follows:

- Slab—595
- Stringer /Multi-Beam or Girder—2,870
- Girder & Floor Beam System—124
- Tee Beam—220
- Box Beam or Girders (Multiple)—215
- Box Beam or Girders (Single or Spread)—136
- Frame (Except Culverts)—123
- Orthotropic—0
- Truss-Deck—16.

The potential impacts on bridges from hazard incidents are described in the hazard profiles of this SHMP.

4.8 ECONOMY

4.8.1 Business Sectors

Economic vitality is a significant contributor to the Commonwealth’s ability to rebound after a disaster event. A strong economy allows industries to pre-plan for events, such as through development of business continuity plans or continuity of operations plans, which have proven to be significant contributors in sustaining businesses impacted by disaster (Tierney, 1997). The Massachusetts economy is diversified among several sectors, the four largest being real estate and rental/leasing, professional and technical services, manufacturing, and health care and social assistance (see Figure 4-10 and Table 4-13). Combined, these sectors contributed 46 percent of the 2011 gross domestic product (GDP). Manufacturing replaced the finance and insurance sector during 2011 as the third largest sector.

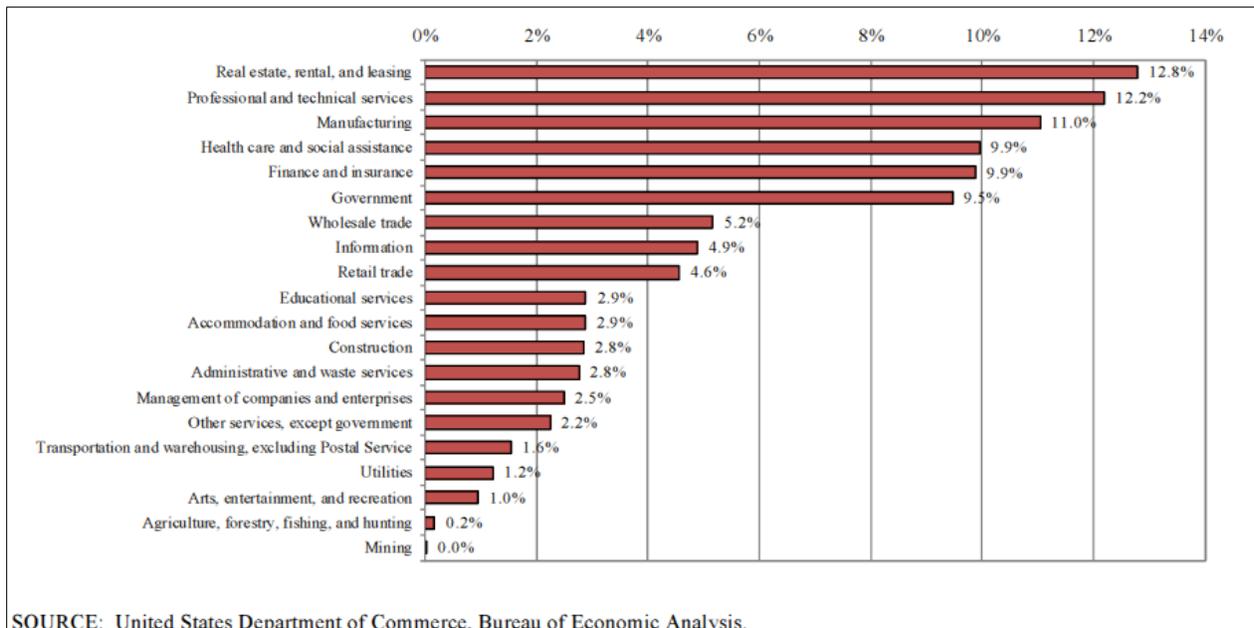


Figure 4-10. North American Industry Classification System (NAICS) Composition of Massachusetts Gross Domestic Product, 2011

TABLE 4-13. RANK OF INDUSTRY CONTRIBUTION TO MASSACHUSETTS GDP, 2002 – 2011

NAICS* Industry Sector	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total Gross Domestic Product by State										
Private industries										
Agriculture, forestry, fishing, and hunting	19	19	19	19	19	19	19	19	19	19
Mining	20	20	20	20	20	20	20	20	20	20
Utilities	17	17	17	17	17	17	17	17	17	17
Construction	9	9	9	10	10	10	10	10	10	12
Manufacturing	5	3	4	4	3	2	3	3	2	1
Wholesale trade	8	7	7	7	7	7	7	8	9	8
Retail trade	7	8	8	8	8	9	9	9	8	9
Transportation and warehousing, excluding Postal Service	16	16	16	16	16	16	16	16	16	16
Information	10	10	10	9	9	8	8	7	7	7
Finance and insurance	2	2	2	3	4	4	4	4	4	4
Real estate, rental, and leasing	1	1	1	1	1	1	1	1	1	2
Professional and technical services	3	4	3	2	2	3	2	2	3	3
Management of companies and enterprises	13	14	15	15	15	15	14	14	15	14
Administrative and waste services	15	13	13	11	11	11	11	11	11	10
Educational services	11	12	12	13	13	13	13	13	13	13
Health care and social assistance	6	6	6	6	5	5	5	5	5	5
Arts, entertainment, and recreation	18	18	18	18	18	18	18	18	18	18
Accommodation and food services	12	11	11	12	12	12	12	12	12	11
Other services, except government	14	15	14	14	14	14	15	15	14	15
Government	4	5	5	5	6	6	6	6	6	6

4.8.2 Trade Volume

Total trade volume (exports and imports) increased 7.0 percent, to \$61 billion, from 2010 in 2011, returning to pre-recession levels. Canada, at \$11.4 billion and 18.6 percent, was by far the Commonwealth's most valuable trading partner. The trade deficit, \$5.7 billion, grew at a slower pace of 29.5 percent in 2011, versus 53.1 percent in 2010. Export and import data are as follows.

- Exports: Massachusetts ranked 15th in the United States in 2011 and first in New England with \$27.7 billion in exports. This was a 5.5 percent increase from the previous year's export value from the Commonwealth, while national exports increased almost three times as much by 15.9 percent. Total exports from New England also grew by 4.2 percent. Canada was the Commonwealth's top export destination in 2011, with \$3.7 billion.
- Imports: Imports grew to \$33.4 billion in 2011 but at a slower pace, 8.8 percent, than in 2010. Canada was also the largest source for Massachusetts imports in 2011: \$7.7 billion or 22.9 percent of the statewide total.

Figure 4-11, Figure 4-12 and Figure 4-13 summarize key trade data.

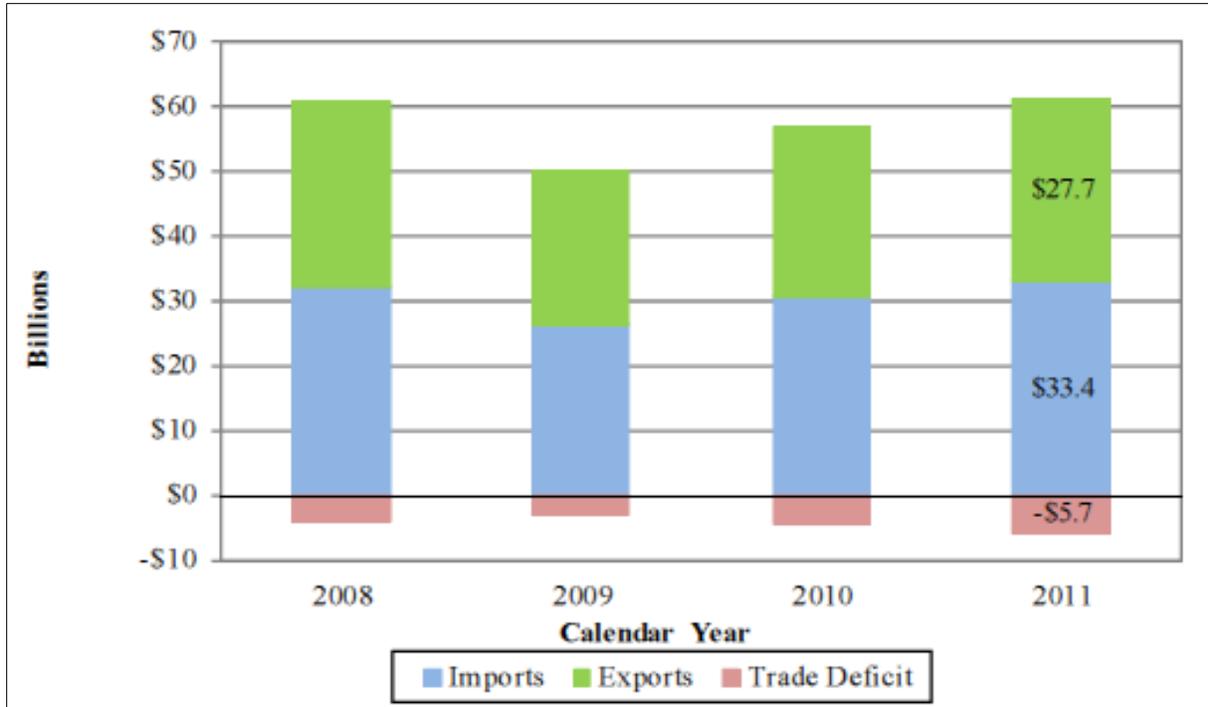


Figure 4-11. Massachusetts Imports, Exports and Trade Deficit

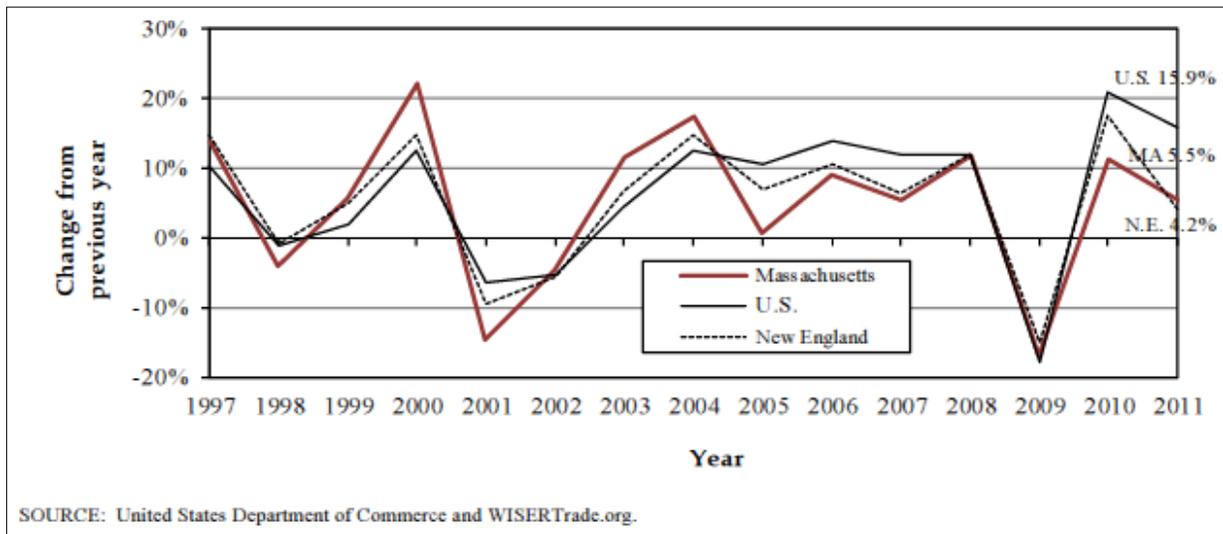


Figure 4-12. Export Growth for Massachusetts, U.S. and New England

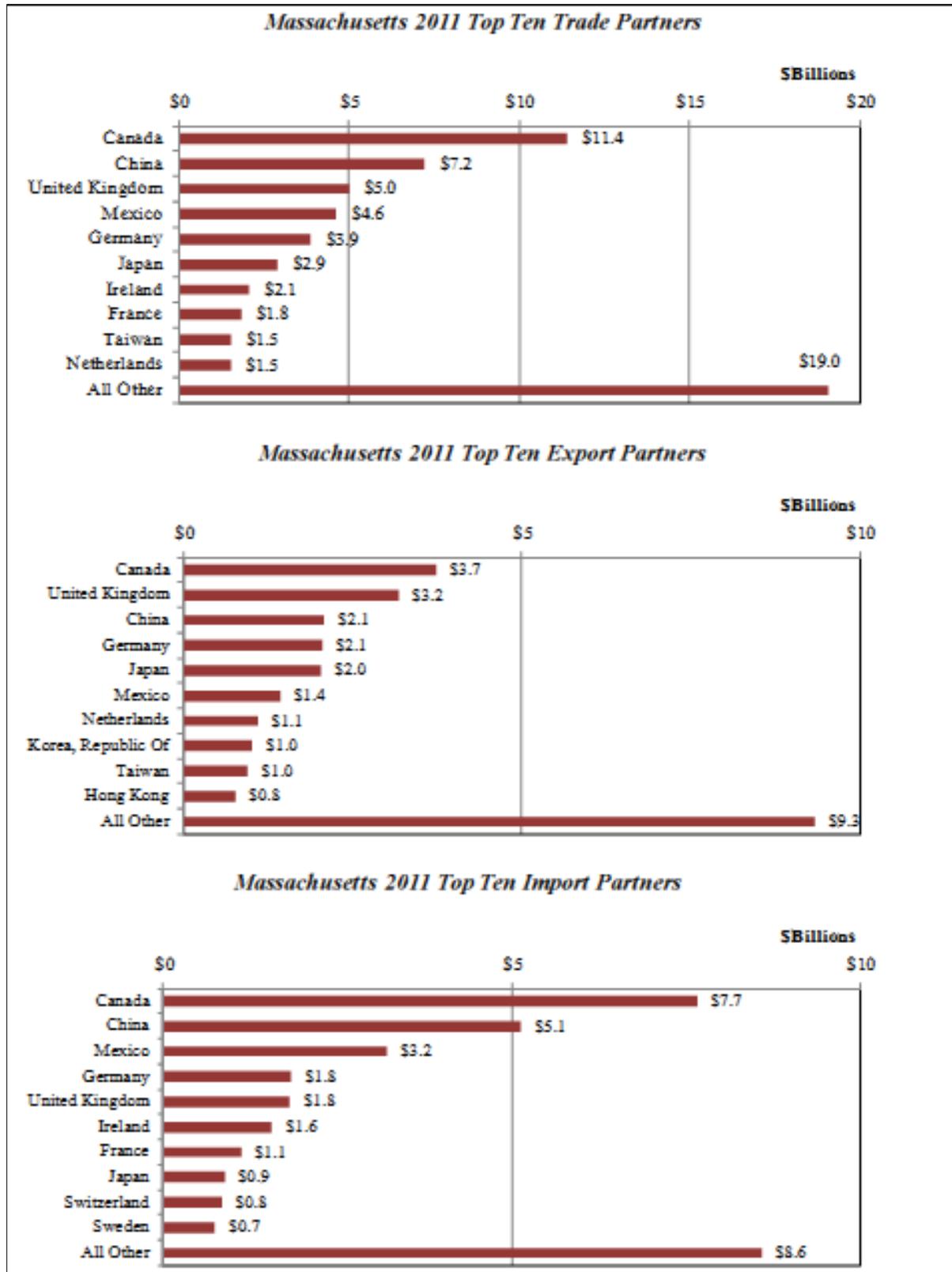


Figure 4-13. Top Ten Trade Partners by Trade Type

4.8.3 Agriculture

Agriculture information by county and for the entire state is provided in the following sections, based on 2007 reports from the U.S. Department of Agriculture Statistics Services. The reports are updated on a five-year cycle, but the 2012 reports were not yet available as of March 2013; they will be incorporated in the next plan update, as appropriate. Generalized data are presented in Table 4-14 through Table 4-16.

TABLE 4-14.			
2011 TOP FIVE AGRICULTURE COMMODITIES			
	Farm Receipts (\$1,000s)	% of State Total	% of U.S. Total
1. Greenhouse/nursery	158,300	30.7	1.0
2. Cranberries	102,164	19.8	29.7
3. Dairy products	47,960	9.3	0.1
4. Aquaculture	21,900	4.2	1.6
5. Apples	20,569	4.0	0.9
All commodities	515,598		0.1

Source: <http://www.ers.usda.gov/data-products/state-fact-sheets/state-data.aspx>

TABLE 4-15.		
2011 TOP FIVE AGRICULTURE EXPORTS		
	Exports (\$1 millions)	Rank Among States
1. Other products*	133.6	38
2. Fruits, fresh	39.3	13
3. Fruits, processed	25.1	13
4. Vegetables, processed	12.0	32
5. Vegetables, fresh	7.4	32
Total exports	225.7	43

Source: <http://www.ers.usda.gov/data-products/state-fact-sheets/state-data.aspx>
 * Other products include live animals, other meats, animal parts, eggs, wine, beer, other beverages, coffee, cocoa, hops, nursery crops, pet food, inedible materials, and prepared foods.

TABLE 4-16.		
2007 TOP 5 COUNTIES IN AGRICULTURAL SALES		
	Total Receipts (\$1,000s)	% of State
1. Middlesex County	81,708	16.7
2. Worcester County	80,550	16.4
3. Plymouth County	78,440	16.0
4. Franklin County	56,844	11.6
5. Bristol County	44,245	9.0
State Total	489,820	

Source: <http://www.ers.usda.gov/data-products/state-fact-sheets/state-data.aspx>

Statewide

In 2007, there were 7,691 farms in the Commonwealth, with a total land area of 517,879 acres. The average size of a farm was 67 acres. According to the 2007 Census of Agriculture, 3,688 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the Commonwealth was over \$489.8 million, with total sales averaging \$63,687. Crop sales, including nursery and greenhouse, accounted for over \$364.4 million (74.4 percent) of total sales. Livestock, poultry and their products accounted for over \$125.3 million (25.5 percent) of total sales. The lead agricultural products sold were nursery, greenhouse, floriculture and sod (\$169.1 million); fruits, tree nuts and berries (\$100.6 million); and vegetables, melons, potatoes, and sweet potatoes (\$15.7 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Barnstable County

In 2007, there were 406 farms in Barnstable County, with a total land area of 5,233 acres. The average size of a farm was 13 acres. According to the 2007 Census of Agriculture, 217 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$17.6 million, with total sales averaging \$43,475. Crop sales accounted for over \$10.1 million (57.4 percent) of total sales. Livestock, poultry and their products accounted for over \$7.5 million (42.5 percent) of total sales. The lead agricultural products sold were aquaculture (\$7.3 million); fruits, tree nuts and berries (\$5.4 million); and nursery, greenhouse, floriculture and sod (\$3.8 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Berkshire County

Berkshire County has the third largest agricultural sector in the Commonwealth. In 2007, there were 522 farms in Berkshire County, with a total land area of 66,352 acres. The average size of a farm was 127 acres. According to the 2007 Census of Agriculture, 254 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$20.6 million, with total sales averaging \$39,465. Crop sales accounted for \$7.726 million (38 percent) of total sales. Livestock, poultry and their products accounted for \$12.875 million (62 percent) of total sales. The lead agricultural products sold were milk and other dairy products from cows (\$10.6 million); nursery, greenhouse, floriculture and sod (\$2.6 million); and vegetables, melons, potatoes, and sweet potatoes (\$2.1 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Bristol County

In 2007, there were 777 farms in Bristol County, with a total land area of 39,252 acres. The average size of a farm was 51 acres. According to the 2007 Census of Agriculture, 368 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$44.2 million, with total sales averaging \$56,944. Crop sales accounted for \$36.56 million (83 percent) of total sales. Livestock, poultry and their products accounted for \$7.67 million (17 percent) of total sales. The lead agricultural products sold were nursery, greenhouse, floriculture and sod (\$22.49 million); fruits, tree nuts and berries (\$6.5 million); and vegetables, melons, potatoes, and sweet potatoes (\$6.3 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Dukes County

In 2007, there were 81 farms in Dukes County, with a total land area of 7,916 acres. The average size of a farm was 98 acres. According to the 2007 Census of Agriculture, 37 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$3.3 million, with total sales averaging \$41,193. Crop sales accounted for \$2.261 million

(68 percent) of total sales. Livestock, poultry and their products accounted for \$1.076 million (32 percent) of total sales. The lead agricultural products sold were nursery, greenhouse, floriculture and sod (\$1.45 million); vegetables, melons, potatoes, and sweet potatoes (\$714,000); and cattle and calves (\$105,000) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Essex County

In 2007, there were 531 farms in Essex County, with a total land area of 27,834 acres. The average size of a farm was 52 acres. According to the 2007 Census of Agriculture, 240 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$25 million, with total sales averaging \$47,122. Crop sales accounted for \$18.9 million (76 percent) of total sales. Livestock, poultry and their products accounted for \$6.03 million (24 percent) of total sales. The lead agricultural products sold were nursery, greenhouse, floriculture and sod (\$11.5 million); fruits, tree nuts and berries (\$2.05 million); and vegetables, melons, potatoes, and sweet potatoes (\$3.9 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Franklin County

In 2007, there were 741 farms in Franklin County, with a total land area of 79,465 acres. The average size of a farm was 107 acres. According to the 2007 Census of Agriculture, 350 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$56.8 million, with total sales averaging \$76,712. Crop sales accounted for \$36.23 million (64 percent) of total sales. Livestock, poultry and their products accounted for over \$20.614 million (36 percent) of total sales. The lead agricultural products sold were nursery, greenhouse, floriculture and sod (\$16.25 million); milk and other dairy products from cows (\$13.02 million); and vegetables, melons, potatoes, and sweet potatoes (\$10.64 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Hampden County

In 2007, there were 508 farms in Hampden County, with a total land area of 36,841 acres. The average size of a farm was 73 acres. According to the 2007 Census of Agriculture, 226 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was \$25.735 million, with total sales averaging \$50,659. Crop sales accounted for \$21.424 million (83 percent) of total sales. Livestock, poultry and their products accounted for \$4.311 million (17 percent) of total sales. The lead agricultural products sold were nursery, greenhouse, floriculture and sod (\$7.58 million); vegetables, melons, potatoes, and sweet potatoes (\$7.34 million); and milk and other dairy products from cows (\$2.7 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Hampshire County

In 2007, there were 711 farms in Hampshire County, with a total land area of 52,756 acres. The average size of a farm was 74 acres. According to the 2007 Census of Agriculture, 358 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$38.6 million, with total sales averaging \$54,314. Crop sales accounted for over \$28.5 million (74 percent) of total sales. Livestock, poultry and their products accounted for over \$10.1 million (26 percent) of total sales. The lead agricultural products sold were vegetables, melons, potatoes, and sweet potatoes (\$13.02 million); milk and other dairy products from cows (\$6.25 million); and tobacco (\$5.7 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Middlesex County

In 2007, there were 700 farms in Middlesex County, with a total land area of 33,893 acres. The average size of a farm was 48 acres. According to the 2007 Census of Agriculture, 341 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$81.7 million, with total sales averaging \$116,726. Crop sales accounted for over \$68.7 million (84 percent) of total sales. Livestock, poultry and their products accounted for over \$12.9 million (16 percent) of total sales. The lead agricultural products sold were nursery, greenhouse, floriculture and sod (\$56.7 million); other animals and other animal products (\$6.7 million); and vegetables, melons, potatoes, and sweet potatoes (\$6.2 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Nantucket County

In 2007, there were 14 farms in Nantucket County, with a total area of 615 acres. The average farm size was 44 acres. According to the 2007 Census of Agriculture, 12 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$2.8 million, with total sales averaging \$206,131. Crop and livestock sales information was not provided. Information regarding lead agricultural products sold was not provided in the 2007 Census of Agriculture (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Norfolk County

In 2007, there were 264 farms in Norfolk County, with a total land area of 11,654 acres. The average size of a farm was 44 acres. According to the 2007 Census of Agriculture, 126 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$13.9 million, with total sales averaging \$52,926. Crop sales accounted for over \$12.9 million (93 percent) of total sales. Livestock, poultry and their products accounted for over \$987,000 (7 percent) of total sales. The lead agricultural products sold were nursery, greenhouse, floriculture and sod (\$8.1 million); horses, ponies, mules, burros and donkeys (\$420,000); and other crops and hay (\$317,000) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Plymouth County

In 2007, there were 882 farms in Plymouth County, with a total land area of 49,612 acres. The average size of a farm was 56 acres. According to the 2007 Census of Agriculture, 464 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$78.4 million, with total sales averaging \$88,935. Crop sales accounted for over \$73.08 million (93 percent) of total sales. Livestock, poultry and their products accounted for over \$5.3 million (7 percent) of total sales. The lead agricultural products sold were fruits, tree nuts and berries (\$60.5 million); nursery, greenhouse, floriculture, and sod (\$9.6 million); and aquaculture (\$3.3 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

Suffolk County

The 2007 Census of Agriculture Profiles was not provided for Suffolk County.

Worcester County

In 2007, there were 1,547 farms in Worcester County, with a total land area of 106,357 acres. The average size of a farm was 69 acres. According to the 2007 Census of Agriculture, 690 farm operators reported farming as their primary occupation. The market value of agricultural products sold from all farms in the County was over \$80.5 million, with total sales averaging \$52,069. Crop sales accounted for over \$44.7 million (55 percent) of total sales. Livestock, poultry and their products accounted for over

\$35.8 million (45 percent) of total sales. The lead agricultural products sold were nursery, greenhouse, floriculture and sod (\$23.3 million); fruits, tree nuts and berries (\$10.4 million); and milk and other dairy products from cows (\$9.2 million) (U.S. Department of Agriculture National Agricultural Statistics Service, 2007).

4.8.4 Local County Business Patterns

The County Business Pattern is an annual U.S. Census Bureau series that presents sub-national economic data by industry. It covers most of Massachusetts' economic activity.

Statewide

According to the 2010 County Business Patterns, Massachusetts had 169,790 business establishments. The retail trade industry had the highest number of establishments in the Commonwealth, making up 14.38 percent of all businesses. Following retail trade was professional, scientific, and technical services, making up 12.56 percent of all business. The third largest industry in 2010 was health care and social assistance, making up 10.66 percent of all businesses. Table 4-17 provides 2010 industry and employment information for the Commonwealth.

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	16,437	\$4,813,348	252,157
Administrative and support and waste management and remediation services	9,730	\$7,431,235	191,267
Agriculture, forestry, fishing and hunting	356	\$31,955	1,061
Arts, entertainment, and recreation	3,050	\$1,738,271	51,323
Construction	16,844	\$6,233,410	102,086
Educational services	2,669	\$7,560,289	192,514
Finance and insurance	9,437	\$20,673,481	197,247
Health care and social assistance	18,102	\$26,344,109	564,011
Industries not classified	473	\$13,900	630
Information	3,492	\$8,363,745	96,450
Management of companies and enterprises	1,141	\$9,227,956	84,941
Manufacturing	6,907	\$13,898,053	226,698
Mining, quarrying, and oil and gas extraction	86	\$82,834	1,039
Other services (except public administration)	16,947	\$3,442,274	116,647
Professional, scientific, and technical services	21,334	\$22,751,895	247,470
Real estate and rental and leasing	6,366	\$2,357,982	41,659
Retail trade	24,412	\$9,163,826	343,890
Transportation and warehousing	3,565	\$2,947,799	75,037
Utilities	281	\$1,318,818	12,861
Wholesale trade	8,161	\$10,009,076	129,557

Source: U.S. Census, 2010
* = This number only includes paid employees

Barnstable County

Barnstable County had 8,214 business establishments in 2010. The retail trade industry had the highest number of establishments, making up 18.41 percent of all businesses. Following retail trade was accommodations and food services, making up 13.51 percent of all business. The third highest industry in 2010 was construction, making up 12.17 percent of all businesses. Table 4-18 provides 2010 industry and employment information for Barnstable County.

**TABLE 4-18.
2010 ECONOMIC CENSUS FOR BARNSTABLE COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	1,110	\$42,295	10,593
Administrative and support and waste management and remediation services	594	\$17,551	2,534
Agriculture, forestry, fishing and hunting	37	\$293	58
Arts, entertainment, and recreation	224	\$10,792	1,688
Construction	1,000	\$38,477	3,827
Educational services	96	\$8,460	1,196
Finance and insurance	348	\$35,103	2,321
Health care and social assistance	805	\$147,886	15,519
Industries not classified	18	\$148	33
Information	138	\$16,051	1,451
Management of companies and enterprises	22	\$8,013	532
Manufacturing	184	\$24,541	2,065
Mining, quarrying, and oil and gas extraction	4	D	b
Other services (except public administration)	697	\$24,405	3,822
Professional, scientific, and technical services	733	\$57,391	4,624
Real estate and rental and leasing	333	\$9,843	1,191
Retail trade	1,512	\$83,407	14,131
Transportation and warehousing	144	\$12,797	1,596
Utilities	9	\$8,816	336
Wholesale trade	206	\$13,415	1,260

Source: U.S. Census, 2010

* = This number only includes paid employees

b = 20-99 employees

D = Withheld to avoid disclosing data for individual companies; data are included in higher level totals

In 2007, the majority of jobs on Cape Cod were in two sectors tied to tourism: retail (18 percent) and accommodation and food services (15 percent). The average annual wage in the retail sector was \$27,557, while average wage in accommodations and food service was \$19,829. The 2007 County average wage was \$37,691. Actual wages in both sectors may be marginally higher because employment data do not account for the many part-time or seasonal jobs in these industries. A significant portion of activity in

these industries is related to tourism and second homeowners, particularly on the Outer Cape, where the year-round population is very small.

The Cape Cod economy is made up of trade sectors and local service sectors. The dominant trade sector is tourism (tourists and second homeowners earn their money off-Cape but spend it on Cape Cod). Traditional industries such as fishing, shell-fishing, and cranberry cultivation are trade/export sectors. Based on previous research, Cape Cod has a number of emerging industries with the potential to diversify and expand the region's economy. These include marine research and technology, arts and culture, information and related technology, renewable energy and related technology, and education and knowledge creation.

Unemployment in Barnstable County is greatly influenced by the seasonality of the Cape's summer tourist season, with employers either eliminating or reducing staff during the fall, winter, and spring. The Lower/Outer Cape, in particular, experiences high unemployment during the off-season. Provincetown's unemployment rate is well above 20 percent for six months of the year. The average annual rate of unemployment for the Lower/Outer Cape from May 2008 through April 2009 was 7 to 10 percent, while the average for Provincetown was 10 percent. In the Barnstable Metropolitan Statistical Area, which includes all of Cape Cod, the unemployment rate was 4.8 percent in May 2008, with the state rate at 4.9 percent. The unemployment rate in the Metropolitan Statistical Area was 7.8 percent in May 2009.

Berkshire County

Much of Berkshire County is rural, but the economy is dominated by the health care and social assistance industries. The three largest employers in the Berkshires are Berkshire Health Systems, Pittsfield Public Schools, and General Dynamic Advanced Information Systems. Based on the American Community Survey of 2006-2008, the per capita personal income estimate for the County was \$28,074. The labor force (16 years and older) was 73,188. The 2009 annual average unemployment for the region was 5,892 and was at a rate of 8.1 percent. The unemployment trend for the County shows a gradual trend of increased unemployment until 2004; in 2007 the number of unemployed individuals rose sharply.

Berkshire County had 4,029 business establishments in 2010. The retail trade industry had the highest number of establishments in the County, making up 17.65 percent of all businesses. Following retail trade was construction, making up 12.88 percent of all business. The third highest industry in 2010 was accommodation and food services, making up 12.56 percent of all businesses in Berkshire County. Table 4-19 provides 2010 industry and employment information for Berkshire County.

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	506	\$134,434	7,385
Administrative and support and waste management and remediation services	223	\$61,437	1,554
Agriculture, forestry, fishing and hunting	10	\$1,097	41
Arts, entertainment, and recreation	102	\$40,155	1,628
Construction	519	\$115,211	2,381
Educational services	58	\$135,240	4,083
Finance and insurance	168	\$124,946	2,249

**TABLE 4-19.
2010 ECONOMIC CENSUS FOR BERKSHIRE COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Health care and social assistance	436	\$463,485	11,291
Industries not classified	14	\$332	b
Information	74	\$48,582	978
Management of companies and enterprises	16	\$83,611	779
Manufacturing	158	\$273,718	4,911
Mining, quarrying, and oil and gas extraction	5	\$3,509	81
Other services (except public administration)	359	\$49,400	2,213
Professional, scientific, and technical services	361	\$152,612	2,559
Real estate and rental and leasing	118	\$23,831	742
Retail trade	711	\$209,062	8,576
Transportation and warehousing	64	\$21,032	779
Utilities	13	D	c
Wholesale trade	114	\$55,556	1,217

Source: U.S. Census, 2010

* = This number only includes paid employees

b = 20-99 employees

c = 100-249 employees

D = Withheld to avoid disclosing data for individual companies; data are included in higher level totals

Bristol County

Bristol County had 12,804 business establishments in 2010. The retail trade industry had the highest number of establishments in the County, making up 17.46 percent of all businesses. Following retail trade was construction, making up 11.81 percent of all business. The third highest industry in 2010 was health care and social assistance, making up 10.9 percent of all businesses in Bristol County. Table 4-20 provides 2010 industry and employment information for Bristol County.

**TABLE 4-20.
2010 ECONOMIC CENSUS FOR BRISTOL COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	1,234	\$272,470	18,948
Administrative and support and waste management and remediation services	669	\$226,263	7,484
Agriculture, forestry, fishing and hunting	117	\$4,502	300
Arts, entertainment, and recreation	210	\$65,489	3,406
Construction	1,512	\$383,750	6,897

**TABLE 4-20.
2010 ECONOMIC CENSUS FOR BRISTOL COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Educational services	151	\$116,670	5,026
Finance and insurance	573	\$275,992	5,721
Health care and social assistance	1,396	\$1,561,840	39,023
Industries not classified	34	\$798	36
Information	164	\$168,956	3,194
Management of companies and enterprises	64	\$544,180	5,193
Manufacturing	717	\$1,524,341	27,739
Mining, quarrying, and oil and gas extraction	4	D	b
Other services (except public administration)	1,272	\$177,724	7,527
Professional, scientific, and technical services	1,075	\$295,852	6,025
Real estate and rental and leasing	425	\$63,730	1,787
Retail trade	2,236	\$812,974	33,108
Transportation and warehousing	347	\$253,777	7,392
Utilities	25	\$70,381	886
Wholesale trade	579	\$862,762	13,026

Source: U.S. Census, 2010

* = This number only includes paid employees

b = 20-99 employees

D = Withheld to avoid disclosing data for individual companies; data are included in higher level totals

Dukes County

Dukes County had 1,007 business establishments in 2010. The construction industry had the highest number of establishments in the County, making up 19.27 percent of all businesses. Following construction was retail trade, making up 19.07 percent of all business. The third highest industry in 2010 was accommodation and food services, making up 12.61 percent of all businesses in Dukes County. Table 4-21 provides 2010 industry and employment information for Dukes County.

**TABLE 4-21.
2010 ECONOMIC CENSUS FOR DUKES COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	127	\$32,095	553
Administrative and support and waste management and remediation services	71	\$16,605	259
Agriculture, forestry, fishing and hunting	1	D	a
Arts, entertainment, and recreation	39	\$14,918	223
Construction	194	\$35,215	657
Educational services	8	\$1,123	31
Finance and insurance	29	D	e
Health care and social assistance	57	\$37,144	703
Industries not classified	4	\$131	2
Information	17	\$5,504	126
Management of companies and enterprises	1	D	a
Manufacturing	18	\$4,047	105
Mining, quarrying, and oil and gas extraction	72	\$8,922	276
Other services (except public administration)	70	\$13,098	232
Professional, scientific, and technical services	56	\$6,283	138
Real estate and rental and leasing	192	\$42,477	1,024
Retail trade	127	\$32,095	553
Transportation and warehousing	29	\$7,112	154
Utilities	3	D	b
Wholesale trade	19	\$1,723	48

Source: U.S. Census, 2010

* = This number only includes paid employees

a = 0-19 employees

b = 20-99 employees

D = Withheld to avoid disclosing data for individual companies; data are included in higher level totals

Essex County

Essex County had 17,877 business establishments in 2010. The retail trade industry had the highest number of establishments in the County, making up 14.35 percent of all businesses. Following retail trade was professional, scientific, and technical services, making up 11.96 percent of all business. The third highest industry in 2010 was health care and social assistance, making up 11.45 percent of all businesses in Essex County. Table 4-22 provides 2010 industry and employment information for Essex County.

**TABLE 4-22.
2010 ECONOMIC CENSUS FOR ESSEX COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	1,740	\$413,217	24,023
Administrative and support and waste management and remediation services	1,026	\$527,708	14,747
Agriculture, forestry, fishing and hunting	74	\$11,403	253
Arts, entertainment, and recreation	370	\$122,568	5,958
Construction	1,794	\$556,012	9,203
Educational services	269	\$276,428	8,972
Finance and insurance	910	\$779,905	10,497
Health care and social assistance	2,047	\$2,317,626	56,395
Industries not classified	45	\$1,317	65
Information	314	\$479,865	6,766
Management of companies and enterprises	98	\$714,905	6,569
Manufacturing	877	\$2,487,017	37,346
Mining, quarrying, and oil and gas extraction	4	\$2,383	39
Other services (except public administration)	1,795	\$281,555	11,145
Professional, scientific, and technical services	2,138	\$968,907	13,429
Real estate and rental and leasing	578	\$103,323	2,599
Retail trade	2,565	\$997,371	37,026
Transportation and warehousing	334	\$174,857	4,937
Utilities	27	D	f
Wholesale trade	872	\$978,918	12,192

Source: U.S. Census, 2010
 * = This number only includes paid employees
 D = Withheld to avoid disclosing data for individual companies; data are included in higher level totals
 f = 500-999 employees

Franklin County

Franklin County had 1,590 business establishments in 2010. The retail trade industry had the highest number of establishments in the County, making up 17.17 percent of all businesses. Following retail trade was other services (except public transportation), making up 11.89 percent of all business. The third highest industry in 2010 was health care and social assistance, making up 11.01 percent of all businesses in Franklin County. Table 4-23 provides 2010 industry and employment information for Franklin County.

**TABLE 4-23.
2010 ECONOMIC CENSUS FOR FRANKLIN COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	158	\$26,355	1,860
Administrative and support and waste management and remediation services	77	\$13,064	528
Agriculture, forestry, fishing and hunting	6	\$652	b
Arts, entertainment, and recreation	37	\$8,784	572
Construction	168	\$29,618	642
Educational services	33	\$53,640	1,243
Finance and insurance	56	\$24,979	564
Health care and social assistance	175	\$119,688	3,319
Industries not classified	5	\$134	a
Information	31	\$21,530	474
Management of companies and enterprises	11	\$40,470	500
Manufacturing	108	\$168,870	3,882
Mining, quarrying, and oil and gas extraction	3	\$1,857	b
Other services (except public administration)	189	\$15,320	719
Professional, scientific, and technical services	120	\$19,081	482
Real estate and rental and leasing	37	\$2,797	143
Retail trade	273	\$76,250	2,919
Transportation and warehousing	33	\$13,815	454
Utilities	6	\$13,674	138
Wholesale trade	64	\$43,273	873

Source: U.S. Census, 2010
 * = This number only includes paid employees
 a = 0-19 employees
 b = 20-99 employees

Hampden County

Hampden County had 9,709 business establishments in 2010. The retail trade industry had the highest number of establishments in the County, making up 16.23 percent of all businesses. Following retail trade was health care and social assistance, making up 11.84 percent of all business. The third highest industry in 2010 was other services (except public administration), making up 10.85 percent of all businesses in Hampden County. Table 4-24 provides 2010 industry and employment information for Hampden County.

**TABLE 4-24.
2010 ECONOMIC CENSUS FOR HAMPDEN COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	932	\$205,534	14,258
Administrative and support and waste management and remediation services	543	\$188,117	6,316
Agriculture, forestry, fishing and hunting	13	\$1,188	b
Arts, entertainment, and recreation	138	\$53,107	3,510
Construction	895	\$355,691	5,851
Educational services	142	\$209,020	8,805
Finance and insurance	522	\$734,459	10,114
Health care and social assistance	1,150	\$1,468,126	37,004
Industries not classified	14	\$236	a
Information	117	\$136,896	2,835
Management of companies and enterprises	56	\$200,098	2,701
Manufacturing	608	\$1,023,434	20,243
Mining, quarrying, and oil and gas extraction	7	\$2,718	b
Other services (except public administration)	1,053	\$182,874	7,813
Professional, scientific, and technical services	866	\$433,676	7,210
Real estate and rental and leasing	349	\$64,421	1,993
Retail trade	1,576	\$556,754	22,586
Transportation and warehousing	243	\$183,587	4,877
Utilities	19	\$116,808	1,223
Wholesale trade	466	\$324,651	6,393

Source: U.S. Census, 2010
 * = This number only includes paid employees
 a = 0-19 employees
 b = 20-99 employees

Hampshire County

Hampshire County had 3,541 business establishments in 2010. The retail trade industry had the highest number of establishments in the County, making up 15.42 percent of all businesses. Following retail trade was health care and social assistance, making up 12.34 percent of all business. The third highest industry in 2010 was other services (except public administration), making up 10.84 percent of all businesses in Hampshire County. Table 4-25 provides 2010 industry and employment information for Hampshire County.

**TABLE 4-25.
2010 ECONOMIC CENSUS FOR HAMPSHIRE COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	369	\$76,468	5,329
Administrative and support and waste management and remediation services	184	\$37,003	1,313
Agriculture, forestry, fishing and hunting	15	\$833	53
Arts, entertainment, and recreation	77	\$10,900	560
Construction	383	\$67,272	1,534
Educational services	99	\$270,749	8,715
Finance and insurance	149	\$75,253	1,445
Health care and social assistance	437	\$468,893	17,184
Industries not classified	14	\$183	15
Information	67	\$53,677	1,011
Management of companies and enterprises	10	\$6,308	177
Manufacturing	142	\$172,258	3,408
Mining, quarrying, and oil and gas extraction	7	\$1,688	b
Other services (except public administration)	384	\$52,232	2,022
Professional, scientific, and technical services	358	\$78,522	1,630
Real estate and rental and leasing	115	\$13,756	464
Retail trade	546	\$184,987	7,620
Transportation and warehousing	63	\$22,787	837
Utilities	7	\$10,157	c
Wholesale trade	115	\$81,772	1,709

Source: U.S. Census, 2010
 * = This number only includes paid employees
 b = 20-99 employees
 c = 100-249 employees

Middlesex County

Middlesex County had 42,001 business establishments in 2010. The professional, scientific, and technical services industry had the highest number of establishments in the County, making up 16.29 percent of all businesses. Following was retail trade, making up 12.29 percent of all business. The third highest industry in 2010 was health care and social assistance, making up 10.71 percent of all businesses in Middlesex County. Table 4-26 provides 2010 industry and employment information for Middlesex County.

**TABLE 4-26.
2010 ECONOMIC CENSUS FOR MIDDLESEX COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	3,536	\$1,056,359	54,684
Administrative and support and waste management and remediation services	2,456	\$2,386,379	51,483
Agriculture, forestry, fishing and hunting	22	\$2,530	70
Arts, entertainment, and recreation	694	\$211,703	9,388
Construction	3,924	\$1,733,556	27,274
Educational services	739	\$3,485,394	72,824
Finance and insurance	2,092	\$2,314,512	29,081
Health care and social assistance	4,497	\$5,155,772	108,178
Industries not classified	131	\$4,368	190
Information	1,216	\$4,767,443	43,498
Management of companies and enterprises	392	\$4,927,407	40,967
Manufacturing	1,685	\$4,147,982	56,239
Mining, quarrying, and oil and gas extraction	13	\$3,389	b
Other services (except public administration)	4,001	\$910,828	28,755
Professional, scientific, and technical services	6,842	\$12,023,009	117,900
Real estate and rental and leasing	1,537	\$648,278	11,280
Retail trade	5,162	\$2,250,156	79,241
Transportation and warehousing	730	\$581,282	16,029
Utilities	47	\$254,344	2,013
Wholesale trade	2,285	\$4,008,575	42,395

Source: U.S. Census, 2010

* = This number only includes paid employees

b = 20-99 employees

Nantucket County

Nantucket County had 887 business establishments in 2010. The construction industry had the highest number of establishments in the County, making up 25.48 percent of all businesses. Following construction was retail trade, making up 13.08 percent of all business. The third highest industry in 2010 was accommodation and food services, making up 13.08 percent of all businesses in Nantucket County. Table 4-27 provides 2010 industry and employment information for Nantucket County.

**TABLE 4-27.
2010 ECONOMIC CENSUS FOR NANTUCKET COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	116	\$35,134	544
Administrative and support and waste management and remediation services	106	\$30,349	367
Agriculture, forestry, fishing and hunting	1	D	a
Arts, entertainment, and recreation	25	\$13,253	172
Construction	226	\$29,516	550
Educational services	7	\$2,545	b
Finance and insurance	15	\$8,508	124
Health care and social assistance	31	D	e
Industries not classified	1	D	a
Information	13	\$4,406	81
Management of companies and enterprises	2	D	a
Manufacturing	10	\$1,255	27
Mining, quarrying, and oil and gas extraction	1	D	a
Other services (except public administration)	51	\$7,778	167
Professional, scientific, and technical services	51	\$10,040	154
Real estate and rental and leasing	54	\$6,526	102
Retail trade	150	\$34,718	751
Transportation and warehousing	16	\$3,399	74
Utilities	1	D	a
Wholesale trade	10	\$2,695	36

Source: U.S. Census, 2010

* = This number only includes paid employees

a = 0-19 employees

b = 20-99 employees

D = Withheld to avoid disclosing data for individual companies; data are included in higher level totals

e = 250-499 employees

Norfolk County

Norfolk County had 19,033 business establishments in 2010. The professional, scientific, and technical services industry had the highest number of establishments in the County, making up 13.63 percent of all businesses. Following was retail trade, making up 13.42 percent of all business. The third highest industry in 2010 was health care and social assistance, making up 11.14 percent of all businesses in Norfolk County. Table 4-28 provides 2010 industry and employment information for Norfolk County.

**TABLE 4-28.
2010 ECONOMIC CENSUS FOR NORFOLK COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	1,510	\$435,943	24,072
Administrative and support and waste management and remediation services	1,105	\$725,197	18,212
Agriculture, forestry, fishing and hunting	8	\$1,307	b
Arts, entertainment, and recreation	289	\$269,140	5,727
Construction	1,980	\$987,868	16,229
Educational services	290	\$455,948	12,757
Finance and insurance	1,199	\$2,068,011	25,184
Health care and social assistance	2,120	\$2,196,735	58,977
Industries not classified	71	\$3,200	114
Information	390	\$814,165	11,863
Management of companies and enterprises	119	\$625,715	6,513
Manufacturing	615	\$1,207,986	19,658
Mining, quarrying, and oil and gas extraction	13	\$10,616	160
Other services (except public administration)	1,876	\$409,979	13,560
Professional, scientific, and technical services	2,595	\$1,755,459	20,871
Real estate and rental and leasing	776	\$377,900	6,445
Retail trade	2,554	\$1,150,010	41,677
Transportation and warehousing	374	\$301,937	6,692
Utilities	23	D	g
Wholesale trade	1,126	\$1,317,474	17,852

Source: U.S. Census, 2010
 * = This number only includes paid employees
 b = 20-99 employees
 D = Withheld to avoid disclosing data for individual companies; data are included in higher level totals
 g = 1,000-2,499 employees

Plymouth County

Plymouth County had 11,786 business establishments in 2010. The retail trade industry had the highest number of establishments in the County, making up 16.17 percent of all businesses. Following retail trade was construction, making up 12.47 percent of all business. The third highest industry in 2010 was professional, scientific, and technical services, making up 10.68 percent of all businesses in Plymouth County. Table 4-29 provides 2010 industry and employment information for Plymouth County.

**TABLE 4-29.
2010 ECONOMIC CENSUS FOR PLYMOUTH COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	1,022	\$263,662	16,260
Administrative and support and waste management and remediation services	733	\$446,140	9,926
Agriculture, forestry, fishing and hunting	17	\$2,151	b
Arts, entertainment, and recreation	254	\$75,496	3,233
Construction	1,470	\$457,654	7,825
Educational services	151	\$88,323	3,078
Finance and insurance	646	\$428,400	6,376
Health care and social assistance	1,184	\$1,156,930	28,064
Industries not classified	23	\$286	36
Information	156	\$129,133	2,320
Management of companies and enterprises	94	\$429,355	4,071
Manufacturing	488	\$502,858	10,108
Mining, quarrying, and oil and gas extraction	8	\$7,759	126
Other services (except public administration)	1,127	\$197,573	7,087
Professional, scientific, and technical services	1,259	\$377,043	6,901
Real estate and rental and leasing	353	\$55,949	1,352
Retail trade	1,906	\$694,271	26,737
Transportation and warehousing	273	\$156,461	4,231
Utilities	29	\$150,047	1,446
Wholesale trade	593	\$401,221	6,309

Source: U.S. Census, 2010

* = This number only includes paid employees

b = 20-99 employees

Suffolk County

Suffolk County had 19,525 business establishments in 2010. The professional, scientific, and technical services industry had the highest number of establishments in the County, making up 15.45 percent of all businesses. Following was retail trade, making up 12.32 percent of all business. The third highest industry in 2010 was accommodations and food services, making up 12.11 percent of all businesses in Suffolk County. Table 4-30 provides 2010 industry and employment information for Suffolk County.

**TABLE 4-30.
2010 ECONOMIC CENSUS FOR SUFFOLK COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	2,364	\$1,217,512	50,140
Administrative and support and waste management and remediation services	957	\$1,354,295	34,891
Agriculture, forestry, fishing and hunting	7	\$2,051	35
Arts, entertainment, and recreation	311	\$702,720	10,707
Construction	837	\$708,000	8,872
Educational services	348	\$1,983,295	52,516
Finance and insurance	1,796	\$12,660,951	87,124
Health care and social assistance	1,775	\$7,967,937	129,045
Industries not classified	55	\$1,461	63
Information	521	\$1,331,836	16,557
Management of companies and enterprises	173	\$1,443,162	14,566
Manufacturing	324	\$529,421	9,688
Mining, quarrying, and oil and gas extraction	3	\$1,483	b
Other services (except public administration)	2,318	\$743,922	20,488
Professional, scientific, and technical services	3,017	\$5,359,292	50,862
Real estate and rental and leasing	1,045	\$837,863	10,792
Retail trade	2,405	\$819,739	30,157
Transportation and warehousing	488	\$819,823	16,952
Utilities	26	\$167,508	1,574
Wholesale trade	755	\$769,768	11,037

Source: U.S. Census, 2010

* = This number only includes paid employees

b = 20-99 employees

Worcester County

Worcester County had 17,625 business establishments in 2010. The retail trade industry had the highest number of establishments in the County, making up 14.88 percent of all businesses. Following retail trade was health care and social assistance, making up 11.28 percent of all business. The third highest industry in 2010 was construction, making up 11.02 percent of all businesses in Worcester County. Table 4-31 provides 2010 industry and employment information for Worcester County.

**TABLE 4-31.
2010 ECONOMIC CENSUS FOR WORCESTER COUNTY**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees*
Accommodation and food services	1,713	\$353,645	23,508
Administrative and support and waste management and remediation services	958	\$377,315	11,326
Agriculture, forestry, fishing and hunting	28	\$2,311	86
Arts, entertainment, and recreation	280	\$86,586	4,551
Construction	1,942	\$584,416	10,344
Educational services	276	\$444,708	13,208
Finance and insurance	888	\$970,364	15,741
Health care and social assistance	1,988	\$2,708,757	58,069
Industries not classified	44	\$718	b
Information	260	\$302,450	4,933
Management of companies and enterprises	83	\$176,487	2,360
Manufacturing	973	\$1,747,841	31,279
Mining, quarrying, and oil and gas extraction	12	\$8,823	134
Other services (except public administration)	1,751	\$291,207	11,046
Professional, scientific, and technical services	1,829	\$978,263	14,218
Real estate and rental and leasing	590	\$109,175	2,631
Retail trade	2,622	\$934,316	38,335
Transportation and warehousing	427	\$342,412	10,033
Utilities	45	D	h
Wholesale trade	916	\$767,405	12,615

Source: U.S. Census, 2010

* = This number only includes paid employees

b = 20-99 employees

D = Withheld to avoid disclosing data for individual companies; data are included in higher level totals

h = 2,500-4,999 employees

4.8.5 Employment

Employment by Industry

Like many industrial states, Massachusetts has seen a steady decline of its machinery manufacturing jobs base over the last several years, reflected in both the number of jobs and the share of total employment. Several service sectors have grown to take the place of manufacturing. These service sectors now account for over half of the total payroll employment, while financial activities, government, information, trade, transportation, and utilities have remained level, or in some instances, have declined share of economic growth. Between 2000 and 2010 (latest data available), several industries grew faster than the state average, while others fell significantly as shown in Table 4-32.

TABLE 4-32. INDUSTRY SUBSECTORS WITH SUBSTANTIAL GROWTH OR REDUCTION

NAICS* Industry Subsector	Percent change 2000-2010
Computer and electronic product manufacturing	371.5%
Information and data processing services	220.6%
Publishing industries, except Internet	73.2%
Computer systems design and related services	65.9%
Rental and leasing services and lessors of intangible assets	-10.4%
Fabricated metal product manufacturing	-12.1%
Insurance carriers and related activities	-15.6%
Machinery manufacturing	-18.7%

Note: Subsector represents at least a half percent of Massachusetts GDP in the latest year.
 SOURCE: United States Department of Commerce, Bureau of Economic Analysis. Updated June 2012.
 *North American Industry Classification System.

Rebounding from significant declines in 2002 and 2004, non-agricultural employment in Massachusetts increased 0.5 percent in 2005 and continued to increase annually through 2008. With continued growth in 2010 (0.3 percent) and in 2011 (0.6 percent), non-agricultural employment remains 3.9 percent below its all-time peak in 2001. Nationwide, 2011 non-agricultural employment was up 1.1 percent from 2010, but down 0.4 percent from 2001. The seasonally adjusted estimate for the Commonwealth is 142,000 below the 2001 peak.

Figure 4-14 through Figure 4-16 provide the annual average employment breakdown according to the Massachusetts Division of Unemployment Assistance for the time period 1990-2011.

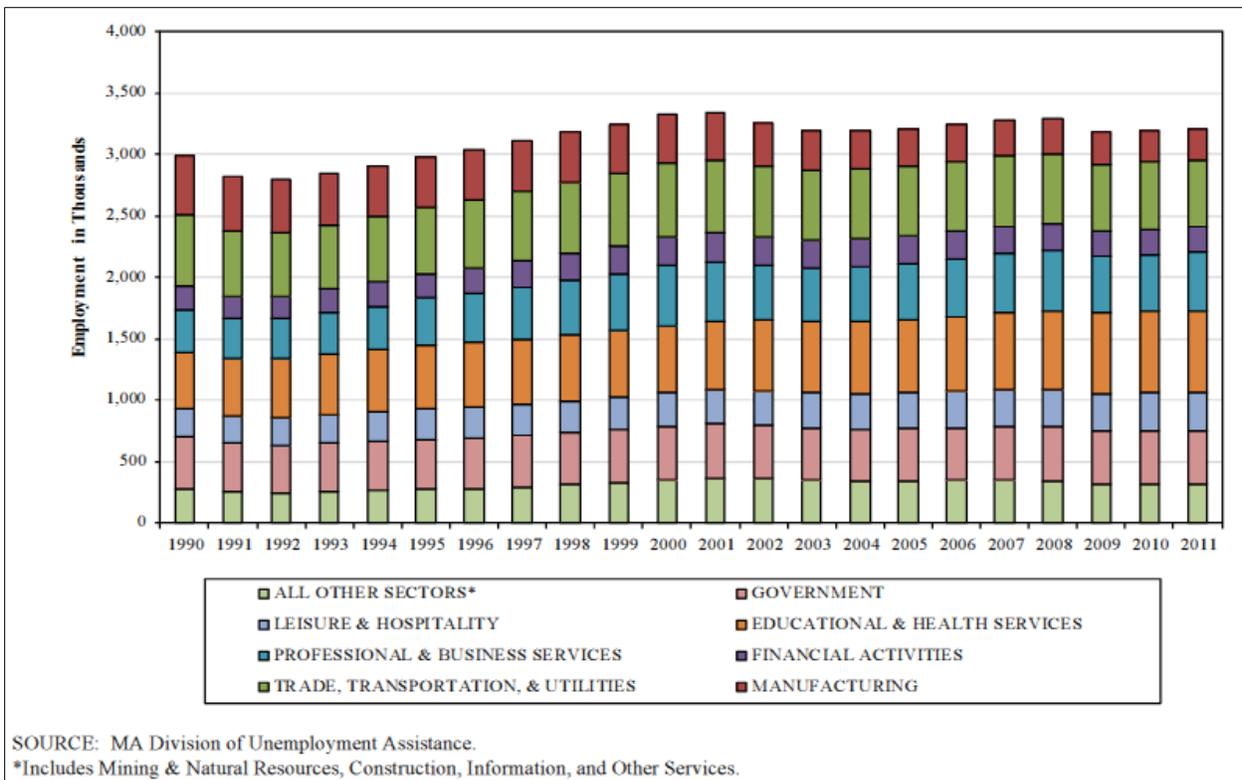


Figure 4-14. Annual Average Employment in Massachusetts by Super-Sector, 1990-2011

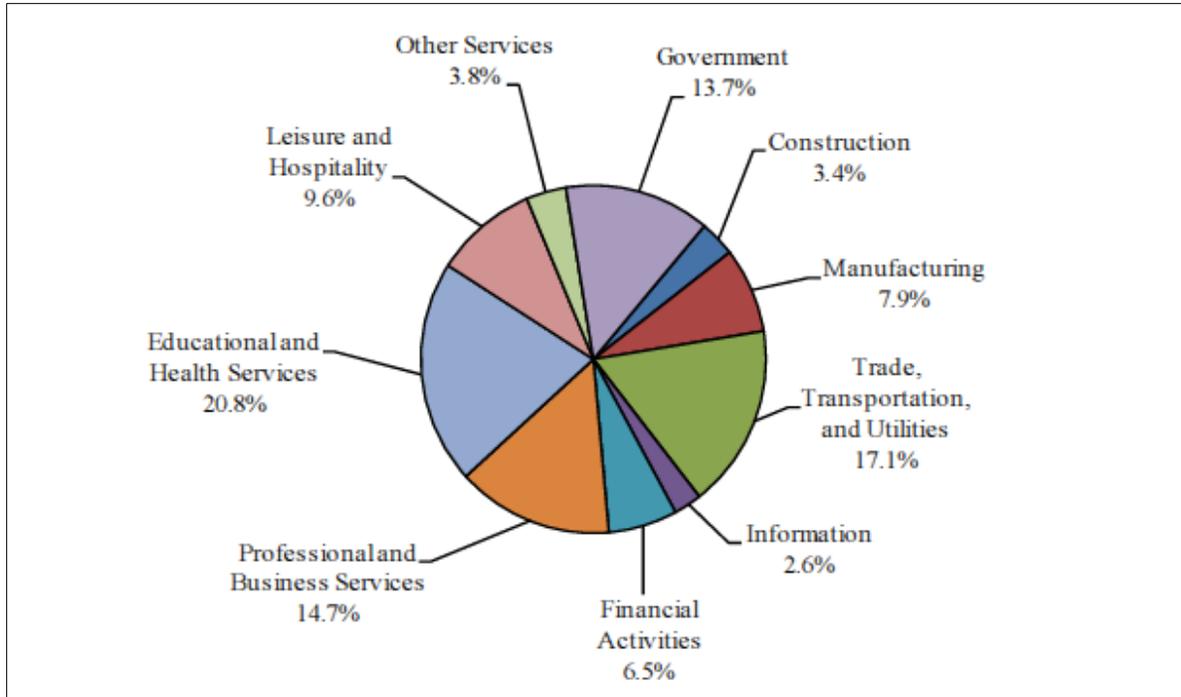


Figure 4-15. Massachusetts Non-Farm Payroll Employment by NAICS Super-Sector, 2010 - 2011

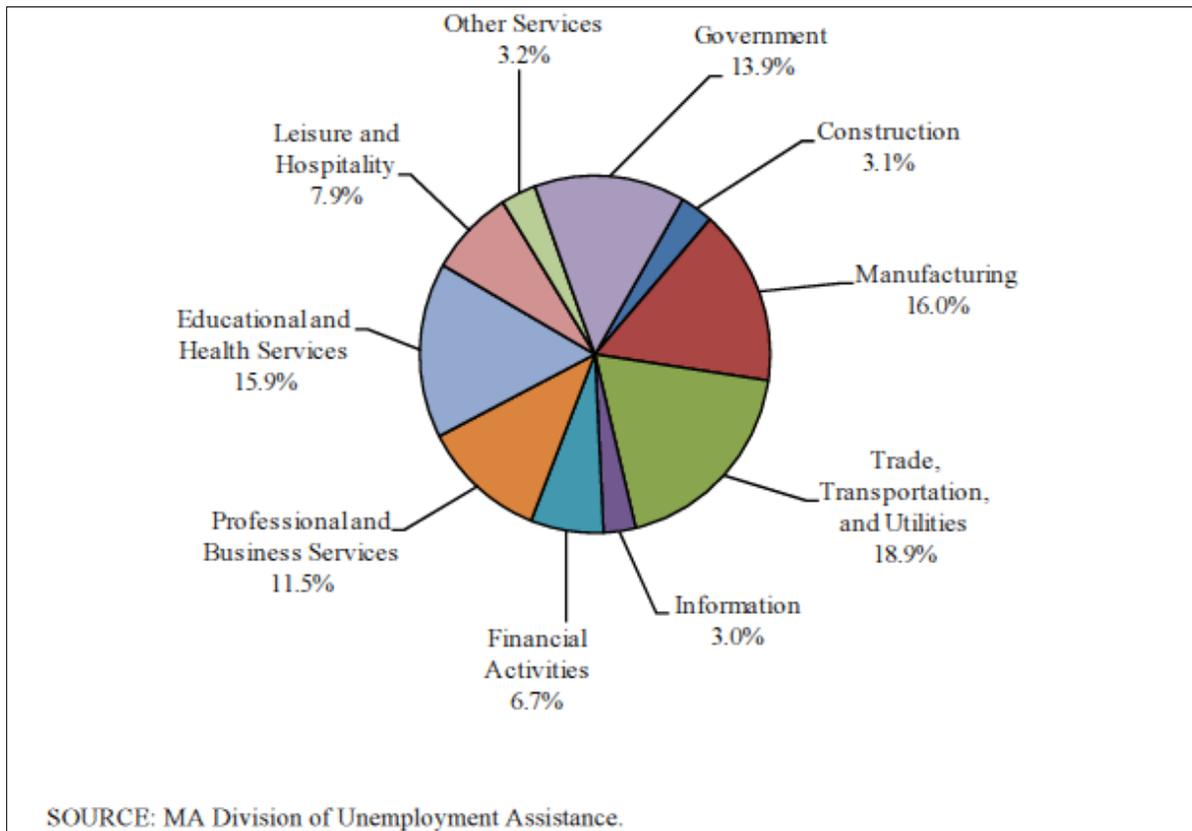


Figure 4-16. Massachusetts Non-Farm Payroll Employment by NAICS Super-Sector, 1990-1991

Largest Employers in Massachusetts

Table 4-33 lists the 25 largest private employers in Massachusetts based upon employment covered by the Unemployment Insurance system as of December 2012. Macy’s replaced Partners Health Care from the March 2011 list. This list may not include some employers who do business in the state under multiple legal names or register each facility as a separate employer. Table 4-34 lists Fortune 500 companies headquartered in Massachusetts. Between 2011 and 2012, three companies gained in that ranking, seven fell, and one remained unchanged. Global Partners, located in Waltham, climbed 124 places on the list, the largest leap for a Massachusetts company.

TABLE 4-33. 25 LARGEST PRIVATE EMPLOYERS IN MASSACHUSETTS, DECEMBER 2011

Bank of America, NA	Massachusetts Institute of Technology
Baystate Medical Center, Inc.	Raytheon Company
Beth Israel Deaconess Medical Center	S & S Credit Company, Inc.
Boston Medical Center Corporation	Shaw's Supermarkets, Inc.
Boston University	Southcoast Hospitals Group, Inc.
Brigham & Women's Hospital, Inc.	State Street Bank & Trust Company
CVS Pharmacy, LLC	Target Corporation
Demoulas Super Markets, Inc.	The Children's Hospital Corporation
E.M.C. Corporation	UMass Memorial Medical Center
General Hospital Corporation	United Parcel Service, Inc.
Harvard University	Verizon New England, Inc.
Home Depot U.S.A., Inc.	Wal-Mart Associates, Inc.
Macy's Retail Holdings, Inc.	

SOURCE: Massachusetts Executive Office of Labor & Workforce Development, Division of Unemployment Assistance, Research Department 7-13-12.
 NOTE: This alphabetic listing includes private employers reporting large numbers of jobs covered by the Massachusetts unemployment insurance program. The information is based on December 2011 employment for employers as registered for unemployment insurance. The list may not include those employers who do business in Massachusetts under multiple legal corporations and those who register each store, facility or franchisee as a separate employer.

TABLE 4-34. MASSACHUSETTS COMPANIES IN 2012 FORTUNE 500 LIST

Rank		Company	Industry	2011 revenues (millions)
2012	2011			
84	82	Liberty Mutual Ins. Group (Boston)	Insurance: P & C (stock)	\$34,671
114	108	Staples (Framingham)	Specialty Retailers: Other	\$25,022
117	104	Raytheon (Waltham)	Aerospace and Defense	\$24,857
121	101	Mass. Mutual Life Ins. (Springfield)	Insurance: Life, Health (mutual)	\$24,226
125	119	TJX (Framingham)	Specialty Retailers: Apparel	\$23,192
139	152	EMC (Hopkinton)	Computer Peripherals	\$20,008
182	306	Global Partners (Waltham)	Wholesalers: Diversified	\$14,836
225	227	Thermo Fisher Scientific (Waltham)	Scientific, Photo, Control Equipment	\$11,780
262	253	State St. Corp. (Boston)	Commercial Banks	\$10,207
335	305	Boston Scientific (Natick)	Medical Products & Equipment	\$7,622
476	476	Biogen Idec (Weston)	Pharmaceuticals	\$5,049

SOURCE: Fortune, May 21, 2012 issue.

Unemployment Rate

The unemployment rate in Massachusetts was consistently below the national average from mid-1995 through November 2005, with similar patterns of gradual improvement after the mid-2003 peak. The Massachusetts rate exceeded the U.S. rate for 17 months starting in December 2005, but only three of those differences exceeded 0.2 percent. Since April 2007, the state rate has been at or below the comparable (seasonally adjusted) U.S. rate. In October 2007, the Massachusetts rate was 4.4 percent, the lowest it had been since October 2001. By September 2012, the Massachusetts rate rose to 6.5 percent from 6.0 percent in June 2012. Figure 4-17 compares the unemployment rate in the state with those in New England and the U.S. Current employment data by county are presented in Table 4-35.

According to the 2013 Due Diligence Report completed by the University of Massachusetts, as of July 31, 2012, the Massachusetts Unemployment Trust Fund had a balance of \$640 million. This balance is the sum of the private contributory account balance of \$547 million and the government contributory account balance of \$93 million. This compares to a March 2012 balance of \$12.6 million, with a private contributory portion of -\$81.6 million. The August 2012 Unemployment Insurance Trust Fund report indicated that the private contributory account balance was estimated to be \$1.761 billion by the end of 2016 according to the Moody's-based outlook.

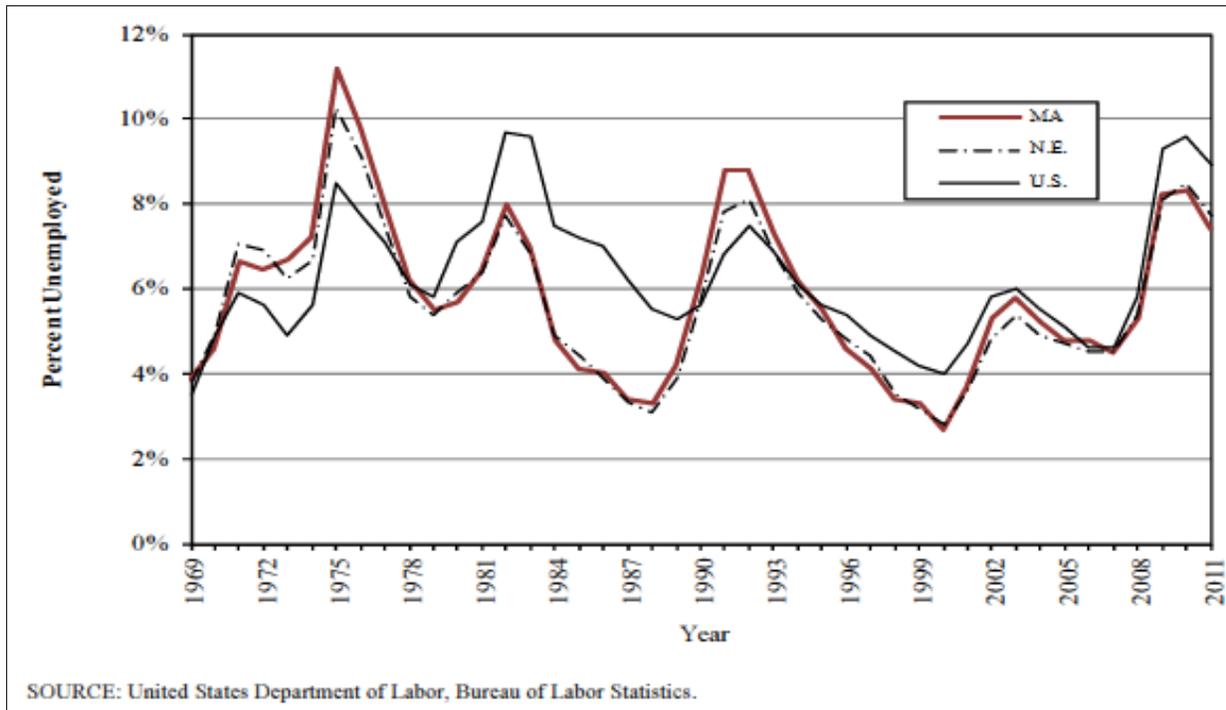


Figure 4-17. Annual Average Unemployment Rate, 1969 – 2011

**TABLE 4-35.
AMERICAN COMMUNITY SURVEY 2009- 2011 3-YEAR ESTIMATES FOR EMPLOYMENT BY
COUNTY**

	Labor Force 16 years & over	Employed	Unemployed
Barnstable	108,807	99,604	9,203
Berkshire	68,149	61,299	6,850
Bristol	294,800	261,219	33,581
Dukes *	8,924	8,474	450
Essex	395,349	360,819	34,530
Franklin	40,881	37,359	3,522
Hampden	228,390	202,832	25,558
Hampshire	78,749	72,717	6,032
Middlesex	843,991	778,980	65,011
Nantucket*	6,186	6,011	175
Norfolk	367,870	337,244	30,626
Plymouth	267,590	239,785	27,805
Suffolk	404,221	357,502	46,719
Worcester	427,666	385,644	42,022

* These estimates are from the American Community Survey 2007-2011 5-year estimates; 3-year estimates aren't available for these counties

4.9 DISASTER INFORMATION

Between 1953 and 2012, FEMA Region I experienced more than 150 federal emergency and disaster declarations, 28 of which impacted Massachusetts. The Commonwealth received six disaster declarations from February 1, 2010 through December 31, 2012 that are included in this plan update:

- March 2010, Severe Storm and Flooding (FEMA Disaster Declaration DR-1895)
- March 2011, Severe Winter Storm and Snowstorm (DR-1959)
- June 2011, Severe Storms and Tornadoes (DR-1994)
- September 2011, Tropical Storm Irene (DR-4028)
- January 2012, Severe Storm and Snowstorm (DR-4051)
- December 2012, Hurricane Sandy (DR-4097).

The Commonwealth was also impacted during the 2013 update planning cycle by a significant snowstorm in January 2013 and by the Boston Marathon bombing event of April 2013. A breakdown of federal disaster declarations is provided in Table 4-36. Further detail on state and federal disaster declarations, along with summaries of distributed funds, is provided in Section 5 (Table 5-2).

**TABLE 4-36.
HISTORY OF FEDERAL DISASTER DECLARATIONS, 1953 – 2012**

Disaster No. ^a	Disaster Type	Date	Incident Period	Barnstable	Berkshire	Bristol	Dukes	Essex	Franklin	Hampden	Hampshire	Middlesex	Nantucket	Norfolk	Plymouth	Suffolk	Worcester	Total by Disaster
EM-3350	Hurricane Sandy	10/28/12	10/27/12 - 11/8/12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
EM-3343	Severe Storm	11/01/11	10/29/11 - 10/30/11		X			X	X	X	X	X		X			X	8
EM-3330	Hurricane Irene	08/26/11	8/26/11 - 9/5/11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
EM-3315	Hurricane Earl	09/02/10	9/1/10 - 9/4/10	X		X	X	X				X	X	X	X	X	X	10
EM-3312	Water Main Break	05/03/10	5/1/10 - 5/5/10					X				X		X		X		4
EM-3296	Severe Winter Storm	12/13/08	12/11/08 - 12/18/08		X	X		X	X	X	X	X				X	X	9
EM-3264	Severe Storms and Flooding	10/19/05	10/7/05 - 10/22/05			X												1
EM-3252	Hurricane Katrina Evacuation	09/13/05	8/29/05 - 10/1/05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
EM-3201	Snow	02/17/05	1/22/05 - 1/23/05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
EM-3191	Snow	01/15/04	12/6/03 - 12/7/03	X	X	X		X	X	X	X	X		X	X	X	X	12
EM-3175	Snowstorm	03/11/03	2/17/03 - 2/18/03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
EM-3165	Snowstorm	03/28/01	3/5/01 - 3/7/01		X			X	X		X	X		X			X	7
EM-3153	Fire	12/06/99	12/3/99 - 12/13/99					X				X		X	X	X	X	6
EM-3119	Extreme Weather/ Flooding	10/23/96	10/20/96 - 10/25/96															0
EM-3103	Blizzards, High Winds and Record Snowfall	03/16/93	3/13/93 - 3/17/93	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
EM-3059	Blizzard and Snowstorm	02/07/78	02/07/78													X		1
FM-2116	Russell Fire	09/12/95	09/05/95															0
DR-4097	Hurricane Sandy	12/19/12	10/27/12 - 11/8/12	X		X	X						X		X	X		6

**TABLE 4-36.
HISTORY OF FEDERAL DISASTER DECLARATIONS, 1953 – 2012**

Disaster No. ^a	Disaster Type	Date	Incident Period	Barnstable	Berkshire	Bristol	Dukes	Essex	Franklin	Hampden	Hampshire	Middlesex	Nantucket	Norfolk	Plymouth	Suffolk	Worcester	Total by Disaster
DR-4051	Severe Storm And Snowstorm	01/06/12	10/29/11 - 10/30/11		X				X	X	X	X					X	6
DR-4028	Tropical Storm Irene	09/03/11	8/27/11 - 8/29/11	X	X	X	X		X	X	X			X	X			9
DR-1994	Severe Storms and Tornadoes	06/15/11	06/01/11							X							X	2
DR-1959	Severe Winter Storm and Snowstorm	03/07/11	1/11/11 - 1/12/11		X			X		X	X	X		X		X		7
DR-1895	Severe Storm and Flooding	03/29/10	3/12/10 - 4/26/10			X		X				X		X	X	X	X	7
DR-1813	Severe Winter Storm and Flooding	01/05/09	12/11/08 - 12/18/08		X			X	X	X	X	X					X	7
DR-1701	Severe Storms, Inland & Coastal Flooding	05/16/07	4/15/07 - 4/25/07	X	X		X	X	X	X	X				X			8
DR-1642	Severe Storms and Flooding	05/25/06	5/12/06 - 5/23/06					X				X				X		3
DR-1614	Severe Storms and Flooding	11/10/05	10/7/05 - 10/16/05		X	X			X	X	X	X		X	X		X	9
DR-1512	Flooding	04/21/04	4/1/04 - 4/30/04					X				X		X		X	X	5
DR-1364	Severe Storms & Flooding	04/10/01	3/5/01 - 4/16/01			X		X				X		X	X	X	X	7
DR-1224	Heavy Rain And Flooding	06/23/98	6/13/98 - 7/6/98			X		X				X		X	X	X	X	7
DR-1142	Severe Storm/ Flooding	10/25/96	10/20/96 - 10/25/96					X				X		X	X	X		5
DR-1090	Blizzard	01/24/96	1/7/96 - 1/13/96	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
DR-975	Winter Coastal Storm	12/21/92	12/11/92 - 12/13/92	X			X	X				X	X	X	X	X	X	9
DR-920	Severe Coastal Storm	11/04/91	10/30/91 - 11/2/91	X			X	X					X	X	X	X		7
DR-914	Hurricane Bob	08/26/91	08/19/91	X		X	X	X		X		X	X	X	X	X	X	11
DR-790	Severe Storms, Flooding	04/18/87	3/30/87 - 4/13/87		X			X	X	X	X	X		X			X	8
DR-751	Hurricane Gloria	10/28/85	09/27/85	X	X	X	X	X	X	X	X	X		X	X	X	X	13
DR-650	Urban Fire	12/03/81	12/03/81					X										1

**TABLE 4-36.
HISTORY OF FEDERAL DISASTER DECLARATIONS, 1953 – 2012**

Disaster No. ^a	Disaster Type	Date	Incident Period	Barnstable	Berkshire	Bristol	Dukes	Essex	Franklin	Hampden	Hampshire	Middlesex	Nantucket	Norfolk	Plymouth	Suffolk	Worcester	Total by Disaster
DR-546	Coastal Storms, Flood, Ice, Snow	02/10/78	2/6/78 - 2/8/78	X		X	X	X					X	X	X	X		8
DR-405	Fire (City of Chelsea)	10/16/73	10/16/73													X		1
DR-357	Toxic Algae in Coastal Waters	09/28/72	09/28/72	X		X	X	X					X	X	X	X		8
DR-325	Severe Storms, Flooding	03/06/72	03/06/72					X						X	X	X		4
DR-43	Hurricane/ Floods	08/20/55	08/20/55															0
DR-22	Hurricanes	09/02/54	09/02/54															0
DR-7	Tornado	06/11/53	06/11/53															0
Total				18	19	21	17	33	18	20	19	28	14	29	25	29	25	
Major Disaster Declaration				10	9	11	10	20	8	11	9	15	7	17	16	17	13	28

a. Disaster numbers are coded as follows: EM = Emergency Declaration; DR = Major Disaster Declaration; FM = Fire Management Assistance

Each county in the state has been impacted at least seven times. Essex received 33 federal declarations, 20 of them disaster declarations. Norfolk and Suffolk each sustained 29 state and federal declarations, and Middlesex sustained 28 declarations. Nantucket has the fewest disaster declarations. Figure 4-18 shows the frequency of declared disasters in Massachusetts by county.

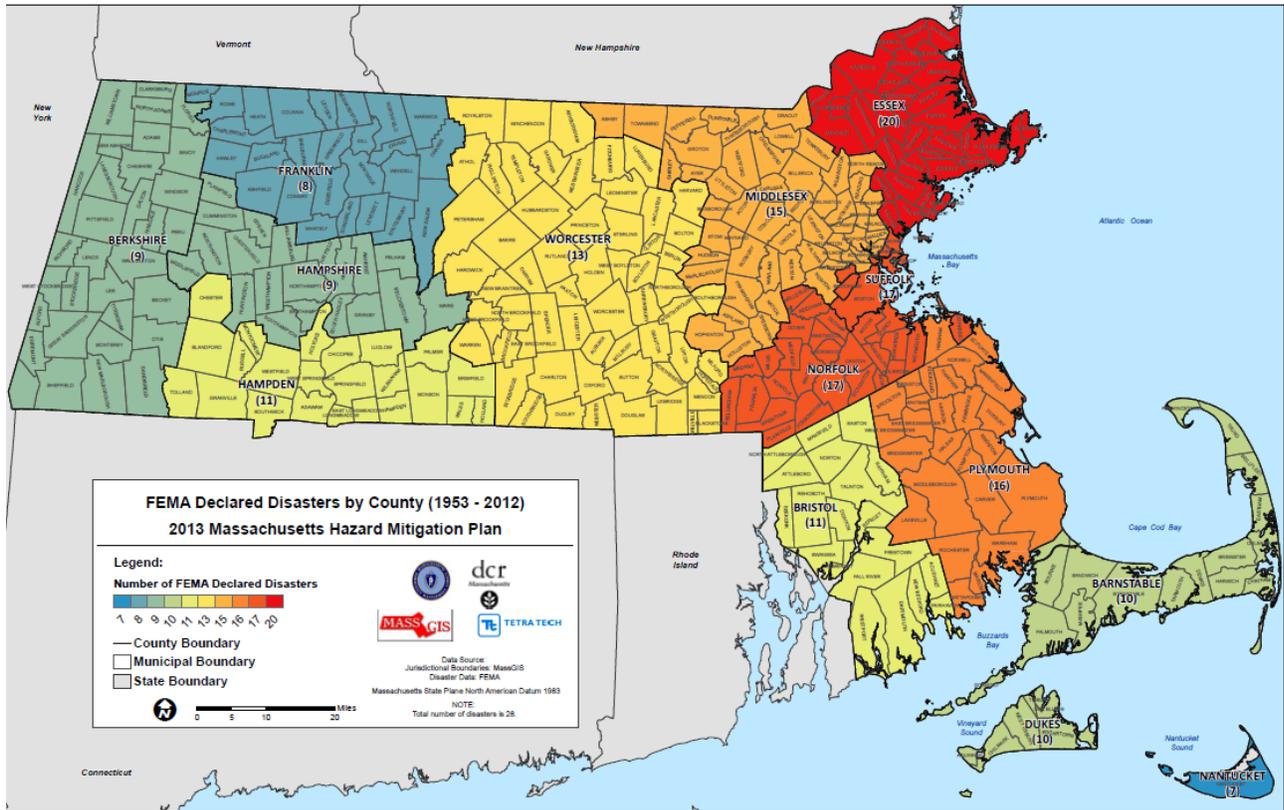


Figure 4-18. FEMA-Declared Disasters by County