

Summary of the U.S. Census Bureau's 2015 County-Level Population and Component Estimates for Massachusetts

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On March 22, 2016, the U.S. Census Bureau released population estimates for July 1, 2010 through July 1, 2015 for Massachusetts and U.S. counties. These estimates are based on the demographic “components of change,” which include births and deaths, domestic and international migration, and the group quarters population for each county. To go directly to the U.S. Census estimates page, follow this link: <http://www.census.gov/popest/estimates.html>.

State-Level Overview

In their December 22, 2015 state-level release, the U.S. Census Bureau estimated that the Massachusetts population had increased by 39,298 from July 1, 2014 to July 1, 2015 to a new total of 6,794,422, making it the 15th most populous state in the U.S., down from 14th in 2014. This 0.6% annual increase puts Massachusetts’ growth at almost three times that of the Northeast average of 0.2% and ranks it as the fastest growing state in the Northeast region for the fifth consecutive year since the April 2010 Census. At the national level, Massachusetts ranked 16th for population growth—up from 17th last year. In terms of percentage growth, it jumped from 26th place in 2014 to 25th in 2015. Since the last Census, the Massachusetts population has increased by 246,605 persons total, or 3.8%, compared 1.7% for the Northeast region and 4.1% for the U.S. as a whole.

A good portion of Massachusetts’ growth last year was driven by a positive *net natural increase* of 17,813 persons, meaning that the state experienced a greater number of births (73,104) than deaths (55,291). A somewhat larger share of the growth was attributed to the positive *net migration* of 21,703 persons. Specifically, a large number of international immigrants (43,508) offset a net domestic outflow (-21,805) that resulted when slightly more people moved out of Massachusetts than into it from other parts of the U.S.

For more details on the Massachusetts state-level population and components of change estimates, including a comparison to the Northeast Region and the U.S., see our December 23, 2015 summary report at <http://www.massbenchmarks.org/statedata/news.htm>

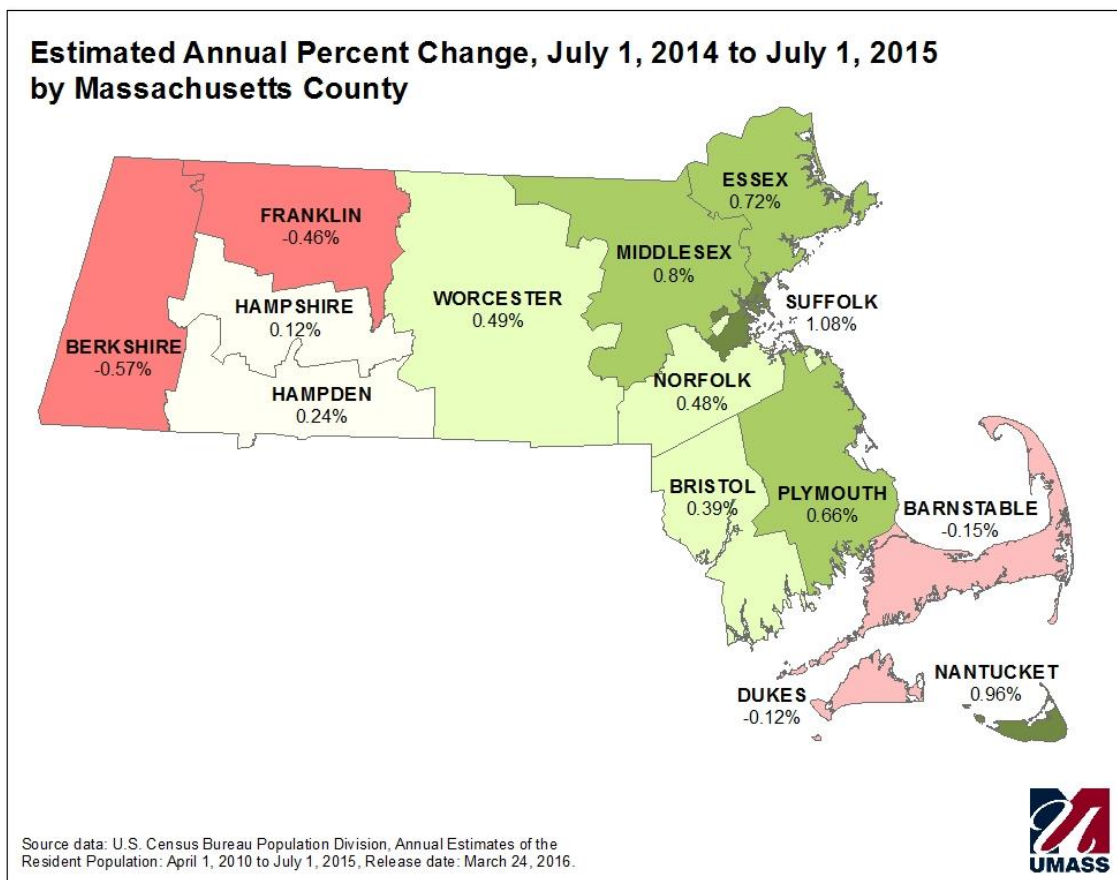
or download the report directly at:

http://www.massbenchmarks.org/statedata/data/UMDI_State_Pop_2015.pdf.

County Population Changes: Single-Year Change

According to the new county-level population estimates released by the U.S. Census Bureau, the greatest numerical increases in Massachusetts from July 1, 2014 to July 1, 2015 were seen in Middlesex County at 12,616 persons gained; Suffolk County at 8,312; and Essex County at 5,557. In terms of percentage change, the largest gains were in Suffolk County at 1.1%, Nantucket County at 1.0%, and Middlesex County at 0.8%. These rankings are comparable to growth patterns in other recent estimates series produced by the U.S. Census Bureau; the three counties with the greatest numeric gains in 2015 were also the top three in last year's estimates series, and two of the three counties with the greatest percentage change (Suffolk and Nantucket) were also in the top three last year.

The greatest population decreases over the 2014-2015 period were estimated in Berkshire County at -737; Barnstable County at -332; and Franklin County at -326. The most significant percentage point decreases from July 2014 to July 2015 were in Berkshire County at -0.6%, Franklin County at -0.5%, and Barnstable County at -0.2%.



Suffolk County had the highest rate of total net migration in the state in 2015, which helped to boost its population growth over the past year, while Nantucket, Suffolk, and Middlesex counties had the highest rates of *natural increase* from 2014 to 2015, meaning they had a high rate of births compared to deaths over the past year as compared to other parts of the state. See the components section of this summary for details. The counties that lost population—Berkshire, Franklin, and Barnstable—all experienced a

greater number of deaths than births in the 2014 to 2015 period. Berkshire and Franklin counties also experienced a net loss of domestic migrants that was not fully offset by positive net international immigration in the 2014 to 2015 period, which also contributed to population loss.

The following table from the U.S. Census Bureau shows county population estimates, change, and rankings for the July 1, 2014 and July 1, 2015 estimates years.

Estimates of Resident Population Change and Rankings for Massachusetts Counties: July 1, 2014 to July 1, 2015								
Geography	July 1 Population Estimate		Change, 2014 to 2015		Rankings			
	2014	2015	Number	Percent [1]	Population Estimates, July 1		Change, 2013 to 2014	
					2014	2015	Number	Percent
Massachusetts	6,755,124	6,794,422	39,298	0.6%	(X)	(X)	(X)	(X)
Barnstable	214,665	214,333	(332)	-0.2%	9	9	13	12
Berkshire	128,565	127,828	(737)	-0.6%	11	11	14	14
Bristol	554,626	556,772	2,146	0.4%	6	6	7	8
Dukes	17,320	17,299	(21)	-0.1%	13	13	11	11
Essex	770,486	776,043	5,557	0.7%	3	4	3	4
Franklin	70,927	70,601	(326)	-0.5%	12	12	12	13
Hampden	469,566	470,690	1,124	0.2%	8	8	8	9
Hampshire	161,106	161,292	186	0.1%	10	10	9	10
Middlesex	1,572,523	1,585,139	12,616	0.8%	1	1	1	3
Nantucket	10,821	10,925	104	1.0%	14	14	10	2
Norfolk	692,688	696,023	3,335	0.5%	5	5	6	7
Plymouth	507,050	510,393	3,343	0.7%	7	7	5	5
Suffolk	769,809	778,121	8,312	1.1%	4	3	2	1
Worcester	814,972	818,963	3,991	0.5%	2	2	4	6

(X) Not applicable. [1] Some values are zero due to rounding.

Source: Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015 (PEP_2015_PEPANNRES), U.S. Census Bureau, Population Division, March 24, 2016.

Of interest this year, Suffolk County surpassed Essex County in total population for the first time since the 1980s, taking over its rank as the third most populous county in Massachusetts.

County	Land Area (Mi2)	Decennial Census Count (as of April 1)									Census Estimate (as of July 1)				
		1930	1940	1950	1960	1970	1980	1990	2000	2010	2011	2012	2013	2014	2015
Essex	500.7	498,040	496,313	522,384	568,831	637,905	633,632	670,080	723,421	743,159	751,514	757,050	764,154	770,486	776,043
Suffolk	58.5	879,536	863,248	896,615	791,329	735,190	650,142	663,906	689,809	722,023	736,692	749,610	760,364	769,809	778,121

Source: U.S. Census 1930-2010 and Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015 (PEP_2015_PEPANNRES), U.S. Census Bureau, Population Division, March 24, 2016.

County Population Changes: Cumulative Change

While “single-year change” refers to estimated growth or decline between July 1 of one estimates year to July 1 of the next, “cumulative change” measures the total net change since the last estimates “base”—or the last Census count date of April 1, 2010 including adjustments and corrections to that count. The differences between the cumulative and single-year change in this vintage are not significant; however, as later years’ vintages are released, the year-to-year change may not always align with the cumulative in terms of rankings and percentages. Also, it is helpful to be aware that *population tables*

compare the Vintage 2015 estimate to the April 1, 2010 “base” while *component tables* compare it to the July 1, 2010 “estimate” when looking at the Census Bureau tables.

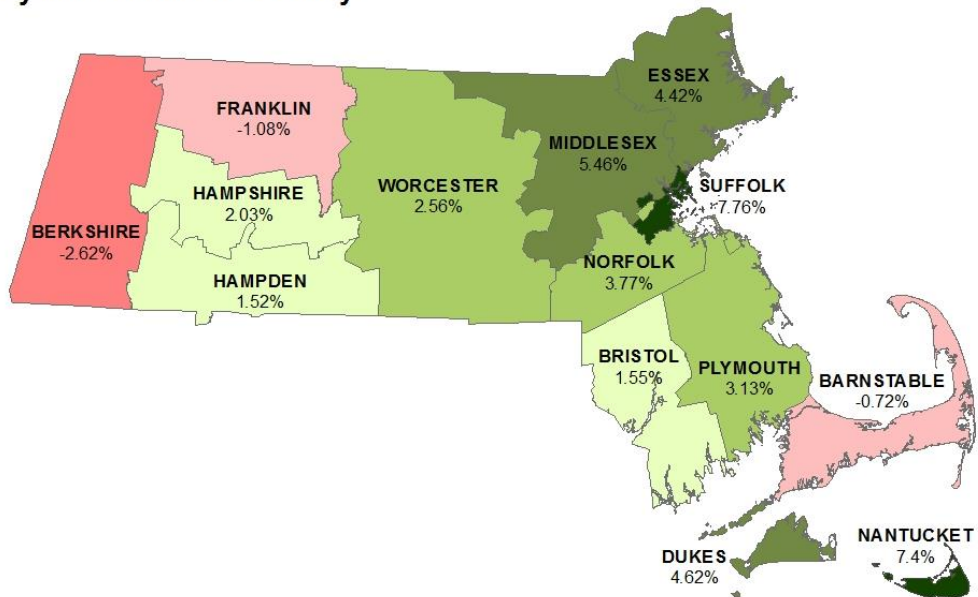
The following table from the U.S. Census Bureau shows county population estimates, cumulative change, and rankings from the April 1, 2010 base to the July 1, 2015 estimate. The subsequent map displays the cumulative percentage change for each county from Census 2010 to the July 1, 2015 estimate. According to these estimates, Suffolk County has been growing the fastest, in terms of percentage growth since the last Census at 7.8%, followed by Nantucket at 7.4% and Middlesex at 5.5%. In numeric terms, Middlesex County led the state, growing by 82,013 persons, followed by Suffolk at 56,034 and Essex at 32,868.

Cumulative Estimates of Resident Population Change and Rankings for Massachusetts Counties: April 1, 2010 to July 1, 2015								
Geography	Population Estimates		Change, 2010 to 2015		Rankings			
	April 1, 2010 Estimates Base	July 1, 2015	Number	Percent [1]	Population Estimates		Change, 2010 to 2015	
					April 1, 2010	July 1, 2015	Number	Percent
Massachusetts	6,547,817	6,794,422	246,605	3.8%	(X)	(X)	(X)	(X)
Barnstable	215,888	214,333	(1,555)	-0.7%	9	9	13	12
Berkshire	131,272	127,828	(3,444)	-2.6%	11	11	14	14
Bristol	548,285	556,772	8,487	1.5%	6	6	7	10
Dukes	16,535	17,299	764	4.6%	13	13	10	4
Essex	743,175	776,043	32,868	4.4%	3	4	3	5
Franklin	71,372	70,601	(771)	-1.1%	12	12	12	13
Hampden	463,625	470,690	7,065	1.5%	8	8	8	11
Hampshire	158,080	161,292	3,212	2.0%	10	10	9	9
Middlesex	1,503,126	1,585,139	82,013	5.5%	1	1	1	3
Nantucket	10,172	10,925	753	7.4%	14	14	11	2
Norfolk	670,743	696,023	25,280	3.8%	5	5	4	6
Plymouth	494,915	510,393	15,478	3.1%	7	7	6	7
Suffolk	722,087	778,121	56,034	7.8%	4	3	2	1
Worcester	798,542	818,963	20,421	2.6%	2	2	5	8

(X) Not applicable. [1] Some values are zero due to rounding.

Source: Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015 (PEP_2015_PEPANNRES), U.S. Census Bureau, Population Division, March 24, 2016.

Estimated Cumulative Percent Change, Census 2010 to July 1, 2015 by Massachusetts County



Source data: U.S. Census Bureau Population Division, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015, Release date: March 24, 2016.

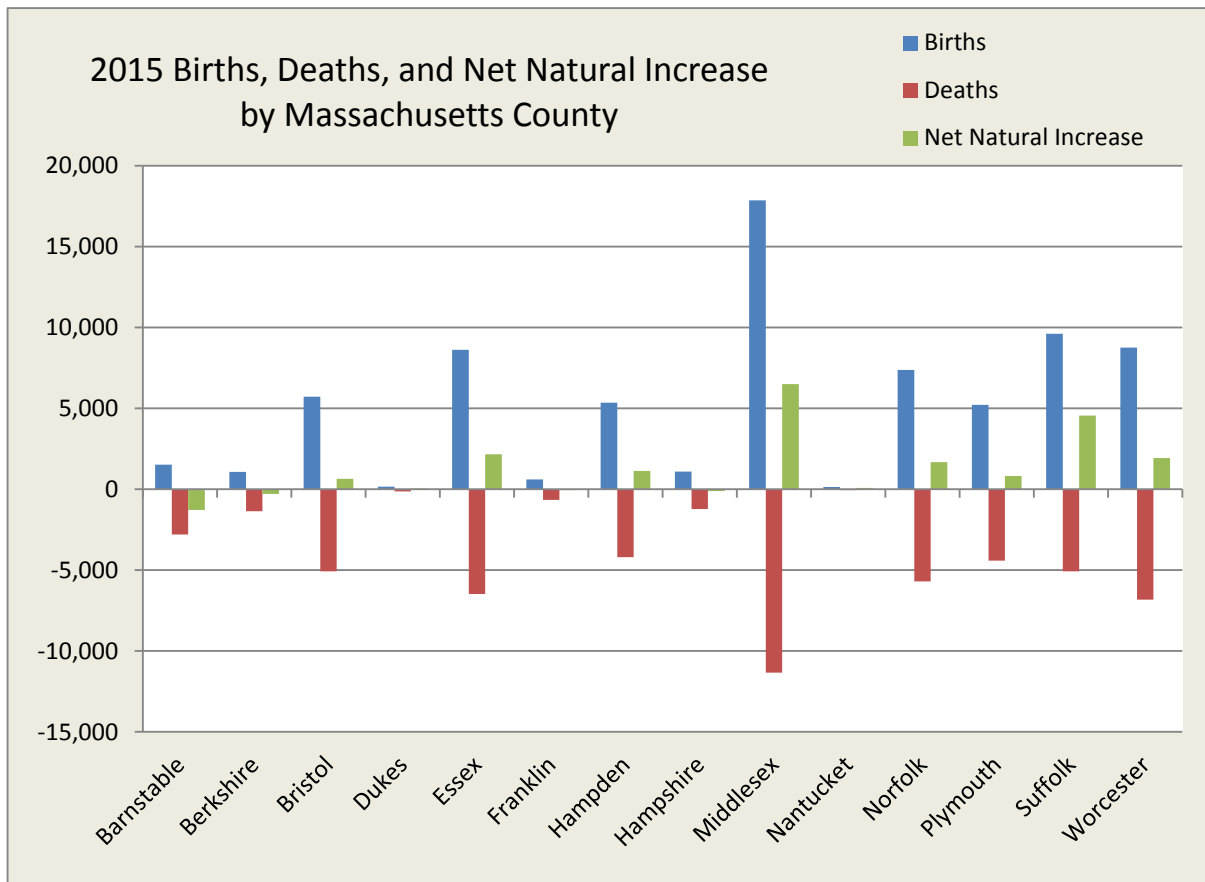


Components of Change

As described earlier, county-level estimates are produced by the U.S. Census Bureau using the latest data available for the various components of change, which include births and deaths, domestic (within the United States) and international migration, and the group quarters population for each county. The following section describes changes in the Massachusetts county-level population estimates within the *natural increase* and *migration* components.

Natural Increase

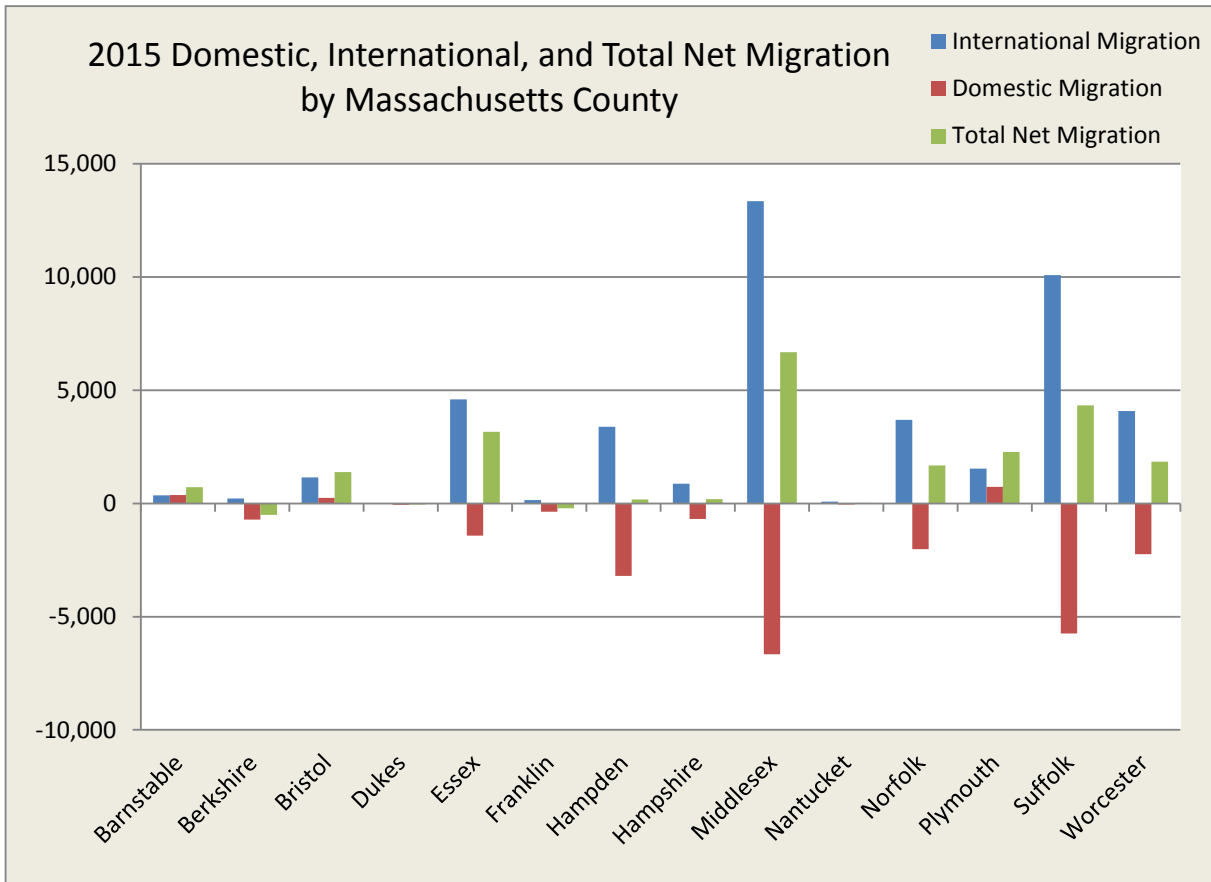
Natural increase is the net change in population after births and deaths are added together. The following chart shows for each county, the estimated number of births, deaths, and the resulting net natural increase for the period of July 1, 2014 to July 1, 2015. Note that in counties with a high number of births compared to deaths, such as Middlesex and Suffolk, we see a positive net natural increase. In counties where the number of deaths outweighs the number of births, such as Barnstable and Berkshire, we see negative values for net natural increase.



UMass Donahue Institute. Source data: U.S. Census Bureau CO-EST2015_ALLDATA. Release March 24, 2016.

Migration

In the estimates process, *international migration* measures in- and out-migration between a county and places outside the U.S. These numbers represent estimates produced by the U.S. Census Bureau’s analysis of American Community Survey data on the foreign-born population and other data sources. *Domestic migration*, sometimes called *internal migration*, measures movement from one county to another within the U.S. To estimate this component, the U.S. Census Bureau uses a combination of IRS data on tax filers and Medicare enrollment data. The sum of these two types of migration equals the *total net migration*. The following chart shows, the international, domestic, and total net migration estimates for each Massachusetts county for the period of July 1, 2014 to July 1, 2015. Note that most Massachusetts counties—11 out of 14—show negative domestic migration, meaning populations have moved from these counties to other counties within the U.S. However, in all counties except Dukes, Franklin, and Berkshire, the negative domestic migration is offset by greater international immigration—sometimes to an enormous degree, as seen in Middlesex and Essex County in the chart below.



UMass Donahue Institute. Source data: U.S. Census Bureau CO-EST2014_ALLDATA. Release March 26, 2015

As described above, component data on births, deaths, domestic migration, and international migration combine together (along with group quarters updates and a “residual” component) to factor into population change for each county. The following tables outline the numerical change in each of these components for each county. The annual table shows change from July 1, 2014 to July 1, 2015, while the cumulative table shows the change from the April 1, 2010 Census base to July 1, 2015.

Annual Estimates of the Components of Population Change: July 1, 2014 to July 1, 2015							
Massachusetts County	Total Population Change [1]	Vital Events			Net Migration		
		Natural Increase	Births	Deaths	Total	International [2]	Domestic
Barnstable	(332)	(1,275)	1,526	2,801	718	350	368
Berkshire	(737)	(287)	1,078	1,365	(502)	217	(719)
Bristol	2,146	637	5,714	5,077	1,390	1,151	239
Dukes	(21)	39	168	129	(52)	8	(60)
Essex	5,557	2,159	8,626	6,467	3,168	4,587	(1,419)
Franklin	(326)	(47)	602	649	(219)	142	(361)
Hampden	1,124	1,141	5,344	4,203	174	3,380	(3,206)
Hampshire	186	(115)	1,099	1,214	187	869	(682)
Middlesex	12,616	6,507	17,850	11,343	6,683	13,338	(6,655)
Nantucket	104	81	133	52	27	74	(47)
Norfolk	3,335	1,668	7,368	5,700	1,681	3,694	(2,013)
Plymouth	3,343	819	5,224	4,405	2,270	1,535	735
Suffolk	8,312	4,549	9,620	5,071	4,335	10,082	(5,747)
Worcester	3,991	1,937	8,752	6,815	1,843	4,081	(2,238)

Cumulative Estimates of the Components of Population Change: April 1, 2010 to July 1, 2015							
Massachusetts County	Total Population Change [1]	Vital Events			Net Migration		
		Natural Increase	Births	Deaths	Total	International [2]	Domestic
Barnstable	(1,555)	(6,499)	8,293	14,792	4,731	1,625	3,106
Berkshire	(3,444)	(1,569)	5,865	7,434	(1,754)	996	(2,750)
Bristol	8,487	3,617	30,029	26,412	5,211	5,112	99
Dukes	764	150	857	707	631	31	600
Essex	32,868	11,513	44,596	33,083	21,775	21,370	405
Franklin	(771)	(177)	3,273	3,450	(387)	651	(1,038)
Hampden	7,065	5,877	28,281	22,404	1,957	15,440	(13,483)
Hampshire	3,212	(495)	5,830	6,325	3,585	4,031	(446)
Middlesex	82,013	35,201	92,938	57,737	49,665	62,336	(12,671)
Nantucket	753	436	725	289	304	341	(37)
Norfolk	25,280	8,910	38,159	29,249	17,181	17,113	68
Plymouth	15,478	4,746	26,959	22,213	10,412	7,172	3,240
Suffolk	56,034	25,238	50,105	24,867	32,144	47,385	(15,241)
Worcester	20,421	10,893	45,829	34,936	10,046	18,831	(8,785)

(X) Not applicable. [1] Total population change includes a residual. This residual represents the change in population that cannot be attributed to any specific demographic component. See Population Estimates Terms and Definitions at <http://www.census.gov/popest/about/terms.html>. [2] Net international migration (except for Puerto Rico) includes the international migration of both native and foreign-born populations. Specifically, it includes: (a) the net international migration of the foreign born, (b) the net migration between the United States and Puerto Rico, (c) the net migration of natives to and from the United States, and (d) the net movement of the Armed Forces population between the United States and overseas. Net international migration for Puerto Rico includes only the international migration of native and foreign-born populations between the United States and Puerto Rico. Note: The estimates are based on the 2010 Census and reflect changes to the April 1, 2010 population due to the Count Question Resolution program. See Geographic Terms and Definitions at <http://www.census.gov/popest/about/geo/terms.html> for a list of the states that are included in each region and division. For population estimates methodology statements, see <http://www.census.gov/popest/methodology/index.html>.

UMass Donahue Institute. Source data: U.S. Census Bureau CO-EST2015_ALLDATA. Release date: March 24, 2016

Below are tables displaying these same components of change as average rates per 1,000 persons. These rates are useful when comparing one county to another. The annual table includes rates for component changes over one year from July 1, 2013 through July 1, 2014, while the cumulative table shows these rates from the April 1, 2010 Census base through July 1, 2014.

Estimates of the Annual Rates* of the Components of Population Change: July 1, 2014 to July 1, 2015							
Massachusetts County	Total Population Change [1]	Vital Events			Net Migration		
		Natural Increase	Births	Deaths	Total	International [2]	Domestic
Barnstable	(2.6)	(5.9)	7.1	13.1	3.3	1.6	1.7
Berkshire	(6.2)	(2.2)	8.4	10.6	(3.9)	1.7	(5.6)
Bristol	3.6	1.1	10.3	9.1	2.5	2.1	0.4
Dukes	(0.8)	2.3	9.7	7.5	(3.0)	0.5	(3.5)
Essex	6.9	2.8	11.2	8.4	4.1	5.9	(1.8)
Franklin	(3.8)	(0.7)	8.5	9.2	(3.1)	2.0	(5.1)
Hampden	2.8	2.4	11.4	8.9	0.4	7.2	(6.8)
Hampshire	0.4	(0.7)	6.8	7.5	1.2	5.4	(4.2)
Middlesex	8.4	4.1	11.3	7.2	4.2	8.4	(4.2)
Nantucket	9.9	7.4	12.2	4.8	2.5	6.8	(4.3)
Norfolk	4.8	2.4	10.6	8.2	2.4	5.3	(2.9)
Plymouth	6.1	1.6	10.3	8.7	4.5	3.0	1.4
Suffolk	11.5	5.9	12.4	6.6	5.6	13.0	(7.4)
Worcester	4.6	2.4	10.7	8.3	2.3	5.0	(2.7)
*Rates per 1,000 average population.							
UMass Donahue Institute. Source data: U.S. Census Bureau CO-EST2015_ALLDATA. Release date: March 24, 2016							

Estimates of the Cumulative Rates* of the Components of Population Change: April 1, 2010 to July 1, 2015							
Massachusetts County	Total Population Change [1]	Vital Events			Net Migration		
		Natural Increase	Births	Deaths	Total	International [2]	Domestic
Barnstable	(29.4)	(29.0)	36.5	65.5	(0.4)	7.2	(7.5)
Berkshire	9.0	(11.9)	43.2	55.1	20.9	7.4	13.5
Bristol	(6.4)	5.9	51.7	45.9	(12.2)	9.1	(21.3)
Dukes	8.4	7.5	48.0	40.6	1.0	1.5	(0.5)
Essex	76.7	14.1	55.8	41.7	62.6	27.0	35.6
Franklin	5.6	(2.6)	43.8	46.5	8.2	8.8	(0.5)
Hampden	30.7	12.0	57.7	45.7	18.7	32.1	(13.4)
Hampshire	(7.6)	(3.3)	34.4	37.7	(4.3)	24.2	(28.5)
Middlesex	51.5	21.3	57.0	35.7	30.2	38.8	(8.6)
Nantucket	61.6	38.3	65.1	26.8	23.3	31.2	(7.9)
Norfolk	38.0	12.2	52.9	40.7	25.8	24.2	1.7
Plymouth	21.4	8.8	51.1	42.3	12.6	13.7	(1.1)
Suffolk	98.0	31.9	63.5	31.6	66.1	60.5	5.6
Worcester	14.8	12.5	53.8	41.3	2.3	22.5	(20.2)
*Rates per 1,000 average population.							
UMass Donahue Institute. Source data: U.S. Census Bureau CO-EST2015_ALLDATA. Release date: March 24, 2016							

For more information on the U.S. Census Bureau's Vintage 2014 Population Estimates Release and to see national county data, follow this link: <http://www.census.gov/popest/data/index.html>.

To see additional summary reports by the UMDI Population Estimates Program on U.S. Census Bureau estimates releases for Massachusetts, follow this link: <http://www.massbenchmarks.org/statedata/news.htm>.