

Violent Crime in Massachusetts: A 25-Year Retrospective

Annual Policy Brief (1988 – 2012)

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HIGHLIGHTS

The volume of violent crime (26,819 offenses) within the Commonwealth in 2012 represents an 18% decrease since 1988. This is the lowest point since the early 1980's.

During the 25-year period from 1988 to 2012, the rate of violent crime per 100,000 persons in Massachusetts dropped 29% from 570 offenses to 404 offenses.

The statewide volume of violent crime decreased 3% from calendar years 2011 to 2012, with a decline in murder (-33%) and aggravated assault (-4%); the volume of both forcible rapes and robberies remained consistent from one year to the next with a drop of less than 1%.

The rate of violent crime per 100,000 persons in Massachusetts decreased 4% between calendar years 2011 and 2012, with a decline in three of the four major offense categories: murder (-33%), robbery (-1%), and aggravated assault (-5%). The rate of forcible rape remained stable at 24 rapes per 100,000 persons from 2011 to 2012.

OVERVIEW

The purpose of this *Annual Policy Brief* is to increase public awareness of the nature and prevalence of violent crime in the Commonwealth by analyzing data over a 25-year period from 1988 to 2012. The state data presented in this report is also examined within the context of national trends during the same timeframe. The four major offense classifications that are used to measure violent crime are murder, forcible rape, robbery, and aggravated assault. Aggravated assault includes all assault sub-categories (assault; assault by gun; assault by knife; assault by blunt object; and assault by hands/fist) *except* simple assault. These classifications are based upon the Massachusetts Department of State Police Crime Reporting Unit's (CRU) *Massachusetts Part I Offense Data Uniform Crime Report Codebook*, modeled after the Federal Bureau of Investigation's (FBI) *Uniform Crime Reporting Handbook*.

This 2013 *Policy Brief* will examine the volume and rates of these violent crime categories utilizing data from 363 law enforcement agencies that voluntarily submitted crime statistics during calendar 2012.¹ The 363 agencies are comprised of 297 municipal police departments (representing 85% of the 351 cities and towns within Massachusetts), 36 campus police departments, 22 state police barracks, seven counties patrolled by transit police, and the Environmental Police. Of these reporting agencies, 299, or 82%, utilized the National Incident-Based Reporting System (NIBRS) and the remaining 64 agencies, or 18%, provided summary data to the CRU via the Uniform Crime Reporting (UCR) Program.

¹ This figure represents an increase of one agency over the 362 law enforcement agencies that reported crime data during calendar year 2011.

DATA COLLECTION, METHODOLOGY, AND INTERPRETATION

The data presented in this report comes from three primary sources – local agency and cumulative state violent crime statistics were provided by the CRU; national violent crime data was obtained through the FBI’s website; and population data (both decennial counts and annual estimates, where available) was retrieved from the United States Census Bureau’s website. Figures prior to calendar year 2012 that are presented in this document were drawn from trends reported in previous *Annual Policy Briefs*. The Appendix provides annual data of violent crime in Massachusetts from 1988 to 2012 by volume and rate.²

The volume of violent crime refers to the raw number or total count of offenses known to police. Rates, on the other hand, are the number of offenses divided by the population of a given jurisdiction. Rates allow for the comparison of the volume of crime within the state and nation over a period of time by controlling for population change. Examinations of crime rates also allow for the comparison of municipalities of varying sizes across a standard unit of measurement. Crime rates at the municipal agency level were calculated by dividing the number of crimes by the population of the particular jurisdiction while crime rates for the Commonwealth were calculated by dividing the number of crimes reported by participating agencies by the total state population.³ All of the crime rates presented in this *Annual Policy Brief* are calculated per 100,000 persons.

Crime count estimates were generated for 61 agencies that submitted at least three months of data during calendar year 2012 but reported less than 12 full months of data, utilizing the following formula: Number of Crimes/Number of Months Reporting x 12.⁴ This practice was followed for all classifications of violent crime *except* Murder. This process is limited because it, “...implicitly assumes that the crime rate for non-reporting months is the same as for the reporting months.”⁵ In addition, 18 agencies (14 municipal departments, three campus departments, and one hospital police department) were excluded from our examination altogether as they reported fewer than three months of data, preventing a reliable estimation of crime counts over time.

HISTORY OF NATIONAL CRIME DATA COLLECTION

The UCR was established in 1930 by the International Association of Chiefs of Police (IACP) as a means of quantifying national crime data within the context of periodic fluctuations in the volume of crime at the local, state and national levels. The FBI was tasked by the IACP with oversight of the UCR and began collecting crime statistics from a modest number of law enforcement agencies across the country. This process remained constant until 1958, when it was determined that there was sufficient participation by law enforcement agencies throughout the nation to aggregate the data and produce national annual crime estimates. Shortly thereafter, individual states began to collect crime data from law enforcement agencies within their jurisdiction and these numbers were then tallied and forwarded on to the FBI.⁶

² State and municipal crime data was provided by Daniel Bibel, Director of the CRU, and the maps presented in this *Policy Brief* were created by Robert Kearney, Program Coordinator within the Office of Grants and Research. Please note that the Massachusetts data was obtained from the CRU in June 2013 and as such, figures may have changed since that time and the FBI may report varying figures for the same time period due to their estimation and reporting methodologies.

³ Increased or full participation in crime reporting by municipal police departments would impact the overall violent crime rate in the Commonwealth, as the total state population figure would remain static even as the volume of reported crimes continued to rise.

⁴ When estimating crime counts for agencies that did not report 12 full months of data, rounding became necessary to arrive at whole numbers. As such, decimals that were ≥ 5 were rounded up to the nearest whole number and decimals that were ≤ 4 were rounded down to the nearest whole number.

⁵ Maltz, *Bridging Gaps in Police Crime Data*, 11.

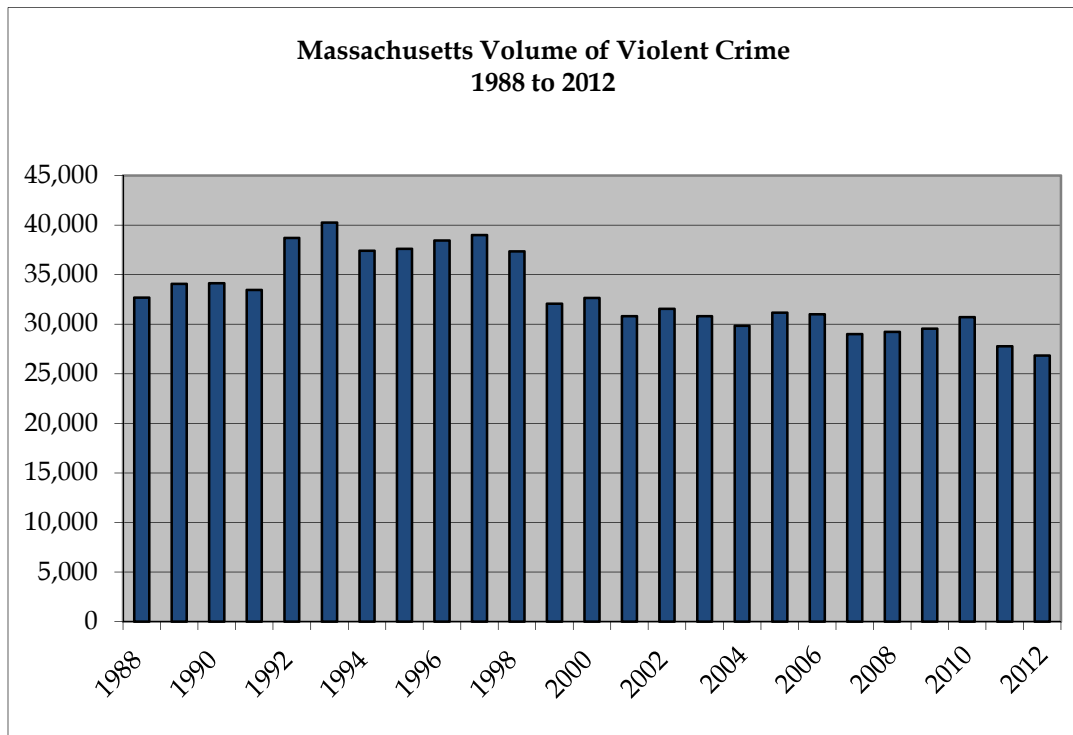
⁶ *Ibid*, 4.

In the 1980's, the FBI, in conjunction with the Bureau of Justice Statistics, created NIBRS as a supplement to the UCR⁷ to parse out specific subsets of data related to the offense, victim and offender that are not otherwise captured within the summary datasets.⁸ In Massachusetts, NIBRS data, much like UCR data, is submitted on a voluntary basis and as such, the method and degree of reporting by individual law enforcement agencies varies greatly. In addition, the FBI has implemented a crime estimation system to account for data that is omitted or submitted after the deadline, which further compromises the validity of official figures.⁹ The CRU serves as the repository for those Massachusetts law enforcement agencies that submit monthly UCR summary data or NIBRS data and this information is then, in turn, reported to the FBI.

VOLUME OF VIOLENT CRIME IN MASSACHUSETTS

The most recent year of complete available data – 2012 – revealed that the volume of violent crime within the Commonwealth (26,819) had fallen 3% from the previous year and 18% over the course of the 25-year period examined in this *Policy Brief*. In addition, violent crimes declined 33% from the peak of 40,239 offenses in 1993 and are presently below levels from some four decades ago.¹⁰ These trends are displayed in Figure 1 below.

Figure 1.



⁷ Ibid, IV.

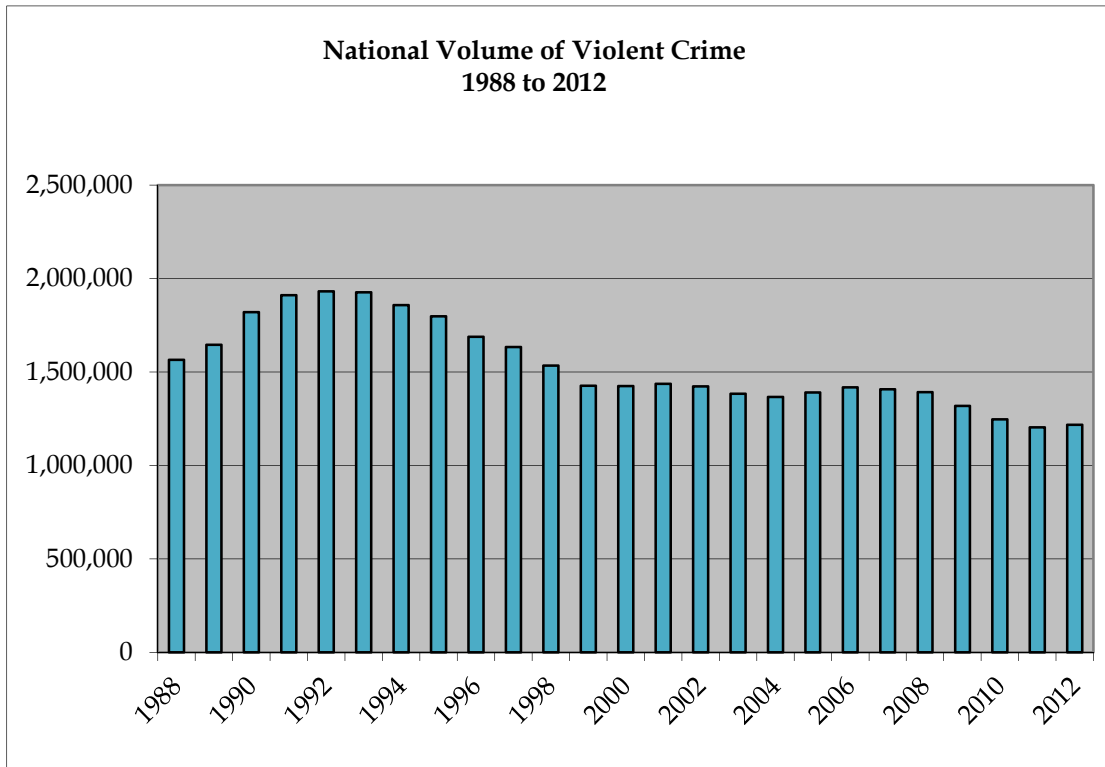
⁸ Ibid, 12.

⁹ Ibid, 1.

¹⁰ The lowest level of violent crime in Massachusetts to date since 1980 occurred in 1984 (27,595 offenses).

The changes seen in Massachusetts are not unique. The FBI published preliminary data for 2012 that reveals a similar pattern; the total volume of national violent crime fell 22% from 1,566,220 to 1,218,007 over the 25-year period and declined 37% from the peak of 1,932,270 offenses in 1992. One-year violent crime counts from 2011 to 2012, however, increased a modest 1%.¹¹ This information is presented in Figure 2 on the following page.

Figure 2.

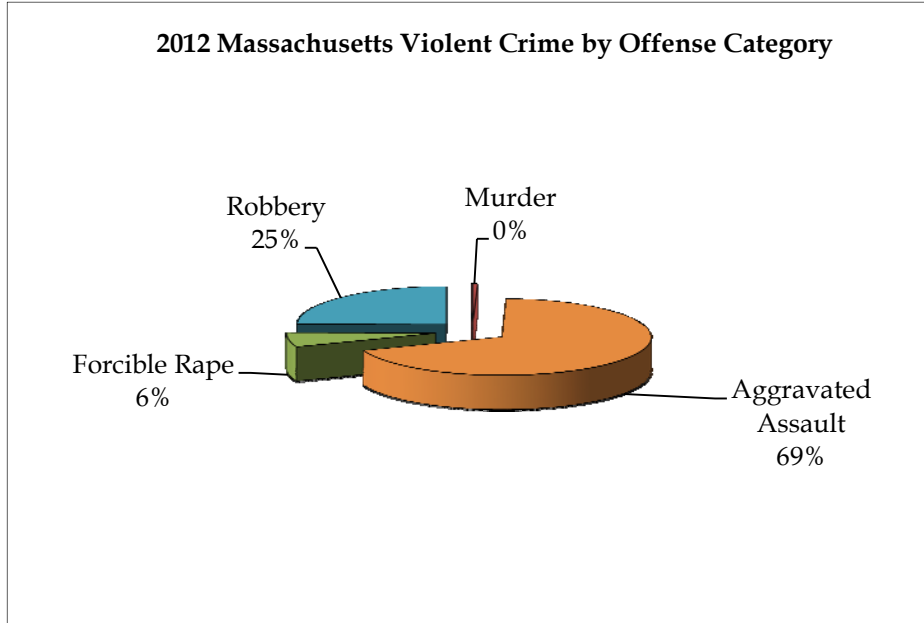


Of the 26,819 violent offenses committed in Massachusetts during 2012, the overwhelming majority were aggravated assaults (18,424), followed by robberies (6,669), forcible rapes (1,603), and murders (123). These values are displayed as percentages in Figure 3 on the following page and closely resemble the proportion of offenses to the overall number of violent crimes in the nation in 2011.¹² Moreover, while the numbers and percentages of each of the four offense categories have changed from one year to the next, the ranking has remained consistent over time; aggravated assaults are the most frequently occurring violent crime, followed distantly by robberies, then forcible rapes, and murders.

¹¹ The 2012 national violent crime count has not yet been published by the FBI nor has the breakdown of offenses by category, but preliminary data indicates a 1.2% increase over the 2011 figure. The 2012 violent crime figure presented in this *Brief* - 1,218,007 - was therefore calculated by increasing the 2011 figure by 1.2%.

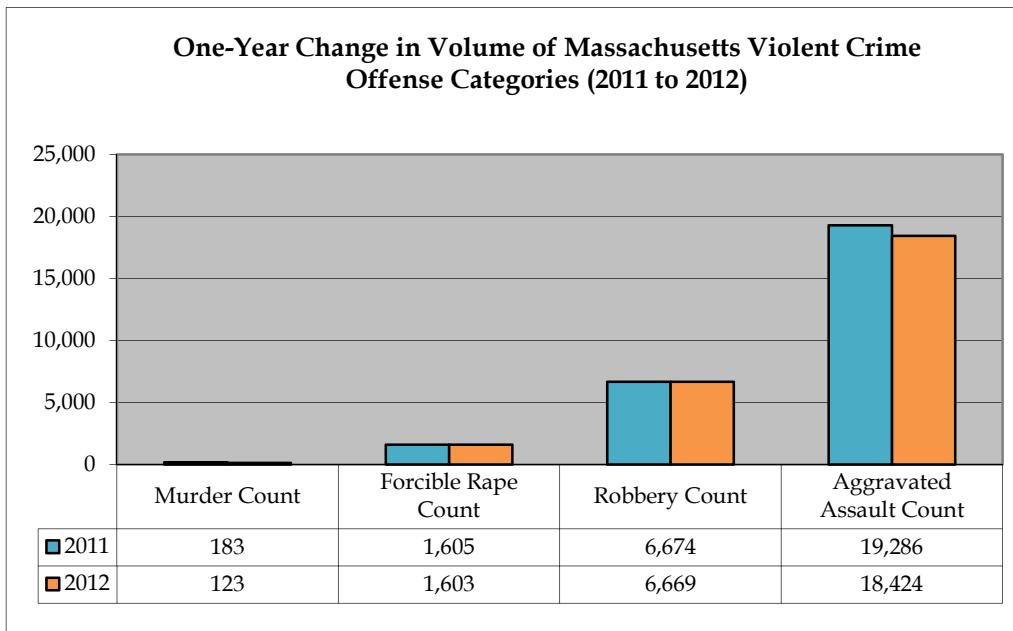
¹² The volume of violent crime in the nation in 2011, the most recent year of data available, was 1,203,564. Aggravated assaults = 751,131 (62.4%); robberies = 354,396 (29.4%); forcible rapes = 83,425 (6.9%); and murders = 14,612 (1.2%).

Figure 3.



In the one year period from 2011 to 2012, the volume of violent crime in Massachusetts decreased 3%, with a drop in two of the four crime categories; the number of murders fell by 33% and the number of aggravated assaults declined 4%.¹³

Figure 4.

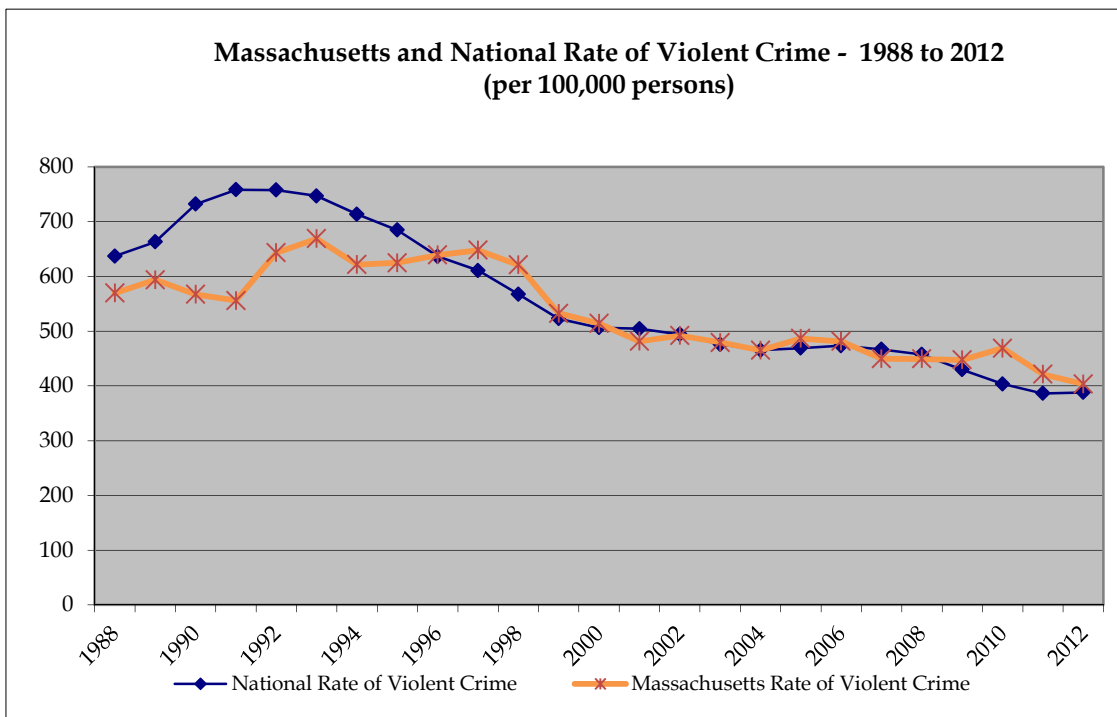


¹³ The number of forcible rapes and the number of robberies both decreased slightly from 2011 to 2012, but not enough to impact the percentage change from one year to the next.

RATE OF VIOLENT CRIME IN MASSACHUSETTS

Over the 25-year period examined in this *Policy Brief*, the rate of violent crime in Massachusetts dropped 29% from 570 offenses per 100,000 persons to 404 offenses. By comparison, during this same period of time, the national rate of violent crime fell 39%.¹⁴ Data released by the FBI for calendar year 2011 ranks the violent crime rate for Massachusetts (428)¹⁵ as thirty-sixth among the nation in ascending order, but as the highest among all New England States.¹⁶ The most currently available data reveals that the rate of violent crime in Massachusetts decreased 4% between calendar years 2011 and 2012, with a decline in three of the four major offense categories (murder, robbery and aggravated assault), and no change in the rate of forcible rape. Preliminary figures suggest that the national violent crime rate remained stable from 2011 to 2012. As noted in the *Data Collection, Methodology, and Interpretation Section* of this Report (see page 2), crime rates provide a more accurate picture of the changes in crime patterns within the state and the nation over time, as the statewide population grew 16% from 1988 to 2012 and the national population increased 28% during those same years.¹⁷

Figure 5.



In addition to illustrating the overall decline in Massachusetts violent crime rates, Figures 6 and 7 display the changes in the rates for each of the four major violent crime offense categories. Between 1988 and 2012, the murder rate declined 33%, the rate of forcible rape dropped 17%, the robbery rate fell 39%, and the rate of aggravated assault fell 26%. From 2011 to 2012, the rates for those same offense categories decreased 33%, 0%, 1%, and 5%, respectively. While there does not appear to be any correlation between changes in the murder rate and the overall violent crime rate, rate changes for the other three offense categories are directly related.¹⁸ Rate changes for both forcible rape and robbery

¹⁴ The rate of violent crime in the nation in 1988 was 637 offenses per 100,000 persons; that number fell to 388 offenses per 100,000 persons in 2012, based on preliminary figures.

¹⁵ The 2011 figure published by the FBI differs from the violent crime rate provided by the CRU (421) and presented in the Appendix of this *Brief*, likely due to late submissions by departments to the CRU and/or variations in the estimation methodology utilized by the FBI and the author.

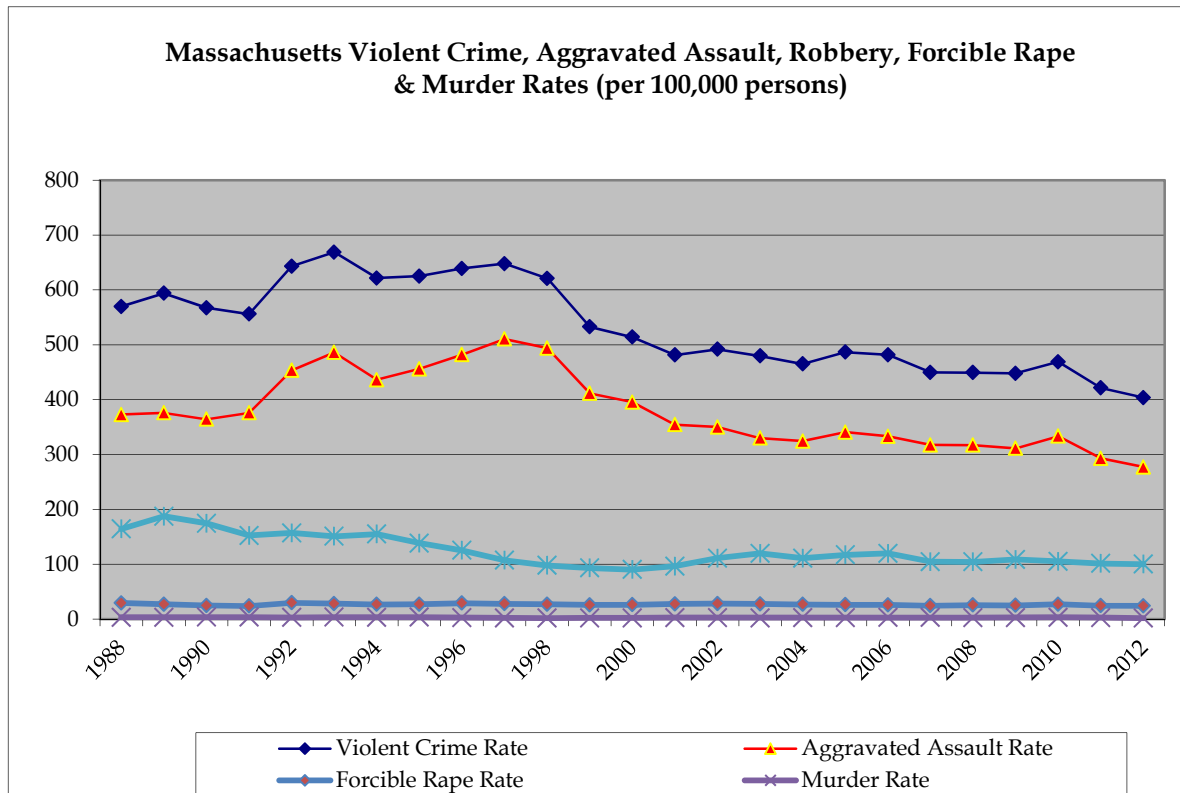
¹⁶ ME = 123; VT = 135; NH = 188; RI = 248; and CT = 273.

¹⁷ The national population figures climbed during those same years from 245,807,000 to 313,914,040 persons.

¹⁸ Murder $r = .32$.

reveal a positive linear relationship and aggravated assault rate changes demonstrate a strong positive linear relationship with overall fluctuations in the violent crime rate examined during the twenty-five year period.¹⁹ Thus, annual changes in the rate of aggravated assault, forcible rape, or robbery will directly impact the overall rate of violent crime in the Commonwealth.

Figure 6.



LOCATION OF VIOLENT CRIME

The ten Massachusetts communities with the highest volume of violent crime in 2012 (in declining order) are: Boston, Worcester, Springfield, Brockton, New Bedford, Fall River, Lawrence, Lynn, Chelsea, and Lowell. The majority of these communities are the most populous cities within the Commonwealth and also have poverty levels that exceed both the state and national averages (10.7% and 14.3%, respectively).²⁰ An overview of the population ranking for each municipality is presented in Table 1 on page 8 of this *Brief*, along with the volume of violent crime. In addition, Map 1 on the subsequent page provides a visual display of these ten communities and thus, an illustration of the concentration of violent crime, by volume, throughout the Commonwealth.

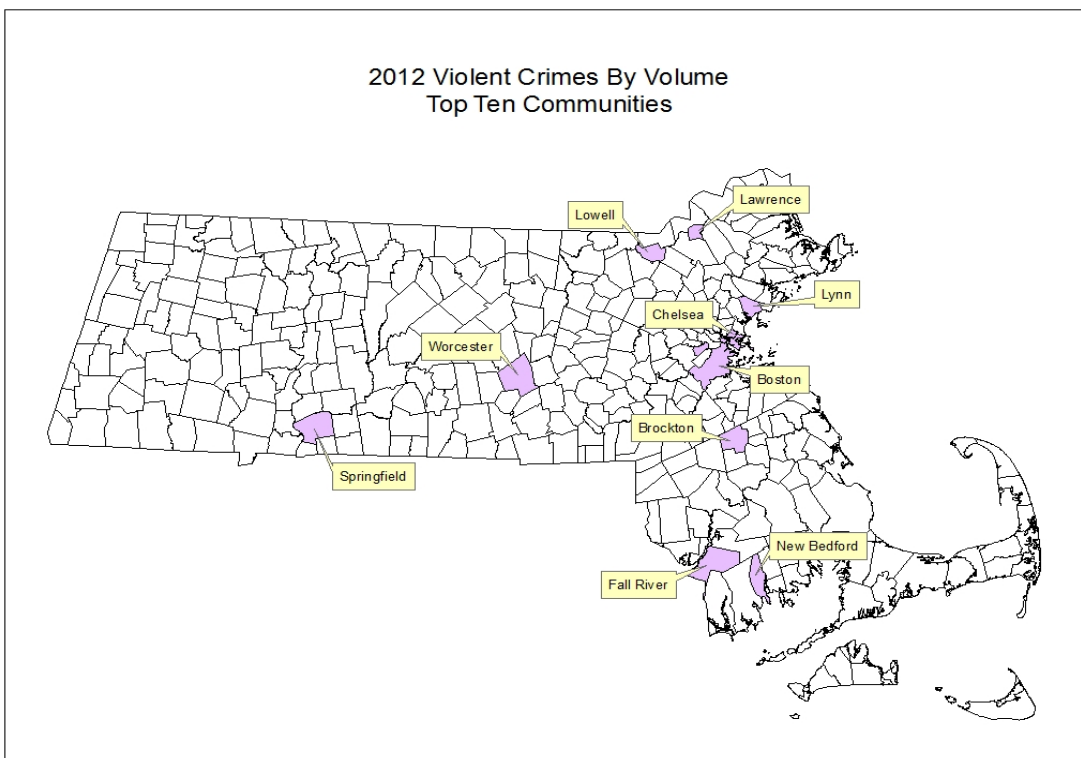
¹⁹ Aggravated assault $r = .94$; forcible rape $r = .60$; and robbery $r = .57$.

²⁰ Percentage of Persons below the Poverty Level (2007 - 2011), as reported on the Census Bureau's website: Boston = 21.4%; Worcester = 19.0%; Springfield = 27.0%; Brockton = 15.6%; New Bedford = 21.7%; Fall River = 21.4%; Lawrence = 28.6%; Lynn = 19.2%; Chelsea = 23.3%; and Lowell = 17.6%.

Table 1: Top Ten Communities in Massachusetts by Volume of Violent Crime

City	2012 Violent Crime Count	2010 Population	Population Ranking (out of 297 reporting municipalities)
Boston	5,266	617,594	1
Worcester	1,751	181,045	2
Springfield	1,604	153,060	3
Brockton	1,088	93,810	7
New Bedford	1,030	95,072	6
Fall River	954	88,857	10
Lawrence	785	76,377	12
Lynn	754	90,329	9
Chelsea	667	35,177	43
Lowell	585	106,519	4

Map 1.



When the rates of violent crime are further explored, taking into account the population of the community, it becomes evident that an analysis based solely upon the volume of crime, as conducted in Table 1, is insufficient to fully understand the extent of the problem. Consider, for example, that the cities of Lynn and Lowell are listed in Table 1 but no longer appear in Table 2, whereas two new communities – Holyoke and Provincetown – now appear in the analysis.²¹ In addition, the city of Chelsea appears in both lists, but jumped considerably from the ninth community with the highest

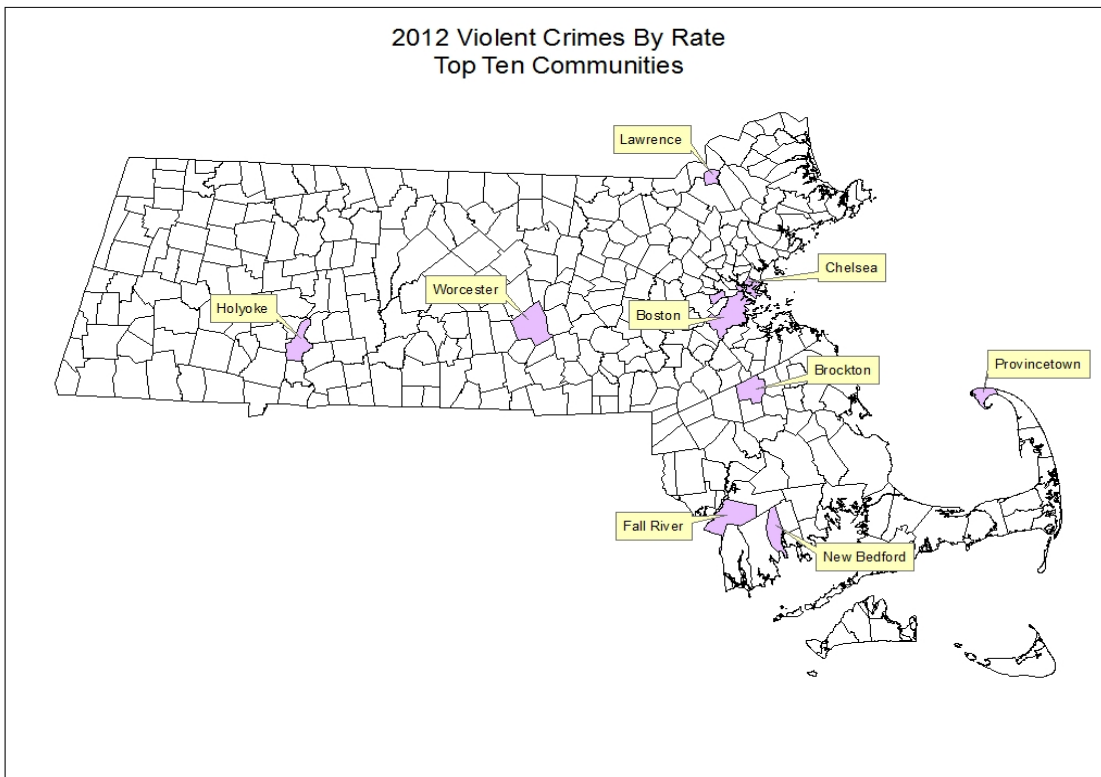
²¹ Percentage of Persons below the Poverty Level (2007 – 2011), as reported on the Census Bureau’s website: Holyoke = 31.3%; and Provincetown = 21.1%.

violent crime count (Table 1) to the community with *the highest* violent crime rate (Table 2) in the state. Map 2, therefore, provides another depiction of the distribution of violent crime, by rate, for these ten communities that are located across the state.

Table 2: Top Ten Communities in Massachusetts by Rate of Violent Crime

City	2012 Violent Crime Rate	2010 Population	Population Ranking (out of 297 reporting municipalities)
Chelsea	1,896	35,177	43
Brockton	1,160	93,810	7
New Bedford	1,083	95,072	6
Fall River	1,074	88,857	10
Springfield	1,048	153,060	3
Lawrence	1,028	76,377	12
Worcester	967	181,045	2
Holyoke	953	39,880	36
Provincetown ²²	918	2,942	271
Boston	853	617,594	1

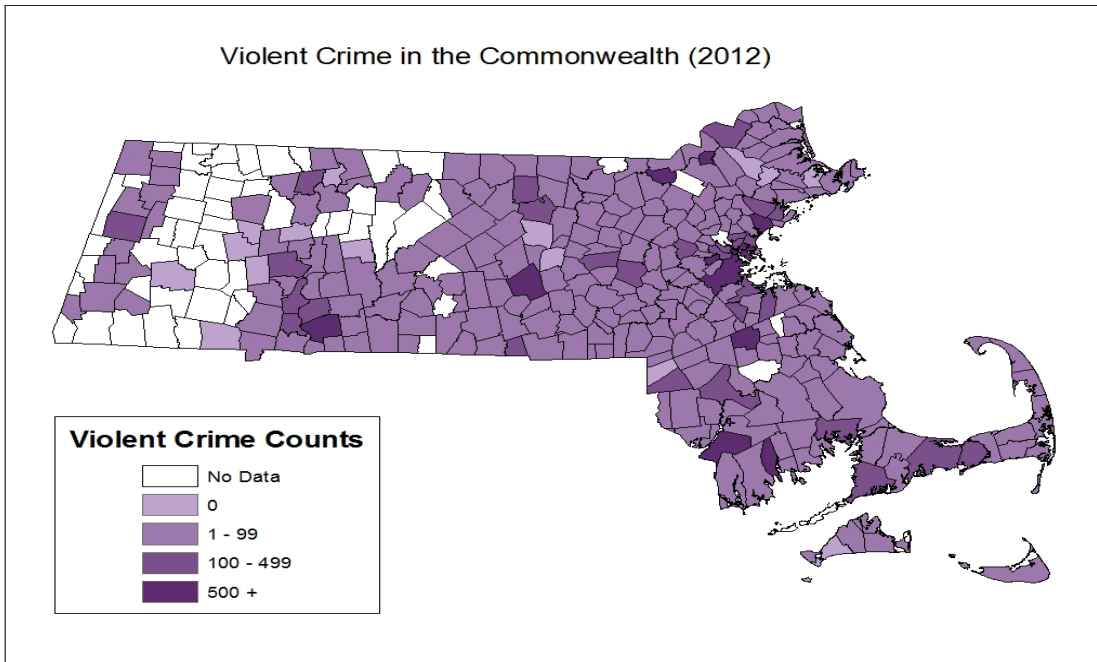
Map 2.



²² The population of Provincetown swells to 60,000 persons during the summer months due to an influx of tourists.

Where the two preceding maps displayed information for only the ten most violent communities, by volume and rate, respectively, Map 3 illustrates the distribution of the volume of all reported violent crime in the Commonwealth during 2012.

Map 3.



CONCLUSION

Violent crime in the Commonwealth, as measured by the cumulative number of murders, forcible rapes, robberies, and aggravated assaults, has followed a pattern consistent with the national figures; most notably, violent crime declined over the one-year period from 2011 to 2012, reflecting an overall downward trend during the past quarter century. This reduction is reflected in the volume, or raw counts of crimes, as well as the rates of crime, which accounts for population adjustments over time.

SOURCES

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Please visit the Executive Office of Public Safety and Security's website (<http://www.mass.gov/eopss>) for additional research publications, including the companion report to this *Policy Brief*, entitled *Property Crime in the Commonwealth*.

APPENDIX: Massachusetts Violent Crime Data, 1988 - 2012

Year	Census Population	Volume					Rate (per 100,000 persons)				
		Violent Crime	Murder	Forcible Rape	Robbery	Aggravated Assault	Violent Crime	Murder	Forcible Rape	Robbery	Aggravated Assault
1988	5,737,037	32,674	184	1,687	9,424	21,376	570	3	29	164	373
1989	5,737,037	34,062	182	1,560	10,750	21,561	594	3	27	187	376
1990	6,016,425	34,132	212	1,500	10,502	21,914	567	4	25	175	364
1991	6,016,425	33,440	213	1,444	9,172	22,606	556	4	24	152	376
1992	6,016,425	38,692	171	1,794	9,443	27,284	643	3	30	157	453
1993	6,016,425	40,239	209	1,705	9,090	29,232	669	3	28	151	486
1994	6,016,425	37,394	199	1,621	9,326	26,247	622	3	27	155	436
1995	6,016,425	37,594	207	1,625	8,321	27,441	625	3	27	138	456
1996	6,016,425	38,449	161	1,753	7,541	28,994	639	3	29	125	482
1997	6,016,425	38,974	126	1,689	6,450	30,706	648	2	28	107	510
1998	6,016,425	37,355	113	1,640	5,883	29,714	621	2	27	98	494
1999	6,016,425	32,038	119	1,559	5,606	24,755	533	2	26	93	411
2000	6,349,097	32,642	122	1,675	5,738	25,106	514	2	26	90	395
2001	6,395,585	30,785	167	1,780	6,178	22,657	481	3	28	97	354
2002	6,412,549	31,543	171	1,814	7,116	22,440	492	3	28	111	350
2003	6,420,289	30,783	136	1,778	7,692	21,177	479	2	28	120	330
2004	6,416,553	29,838	166	1,731	7,126	20,815	465	3	27	111	324
2005	6,398,743	31,145	175	1,676	7,492	21,802	487	3	26	117	341
2006	6,437,193	30,998	185	1,671	7,705	21,437	482	3	26	120	333
2007	6,449,755	28,992	184	1,583	6,755	20,470	450	3	25	105	317
2008	6,497,967	29,204	162	1,665	6,785	20,592	449	2	26	104	317
2009	6,593,587	29,522	172	1,657	7,167	20,526	448	3	25	109	311
2010	6,547,629	30,696	204	1,784	6,881	21,827	469	3	27	105	333
2011	6,587,536	27,748	183	1,605	6,674	19,286	421	3	24	101	293
2012	6,646,144	26,819	123	1,603	6,669	18,424	404	2	24	100	277