Electronic Control Weapons in Massachusetts: 2019

Massachusetts Executive Office of Public Safety and Security
Thomas A. Turco, III, Secretary

Office of Grants and Research
Kevin Stanton, Executive Director
Lisa Sampson, Director

Prepared by:
Kelly Goggin, Research Analyst II
Research and Policy Analysis Division
10 Park Plaza, Suite 3720
Boston, Massachusetts 02116

Table of Contents

Legislative Language

Massachusetts General Law Chapter 140, § 131J (as amended by St. 2004, c. 170, § 1) requires the secretary of public safety and security to establish minimum safety and quality standards, safe storage requirements, education and safety training requirements, and law enforcement training on the appropriate use of electronic control weapons (ECWs), which shall require that any ECW purchased or used by a law enforcement or public safety official include a mechanism for tracking the number of times the ECW has been fired. In October 2004, in response to Chapter 170 of the Acts of 2004, the Executive Office of Public Safety and Security (EOPSS) promulgated 501 CMR 8.00 *et seq.*, regulations governing the sale of ECWs in the Commonwealth and the training of law enforcement personnel on the appropriate use of such weapons.

Chapter 170 of the Acts of 2004, § 2 further requires the secretary of public safety to develop a uniform protocol directing state police and municipal police officers to collect data pursuant to the number of times the device or weapon has been fired and the identifying characteristics, including the race and gender, of the individuals who have been fired upon. This data is reported to EOPSS.

2019 Report Highlights

- At the end of 2019, there were 286 law enforcement and non-municipal agencies in Massachusetts with ECWs; six agencies acquired ECWs during the year.

- There were a total of 1,386 ECW incidents in which an officer or group of officers issued warnings and/or deployed ECWs.

- 34.6% of agencies reported no ECW incidents (99 agencies); 45.8% (131 agencies) reported no ECW deployments.

- From 2018 to 2019 the number of ECW incidents decreased 8.3%, while the number of ECW agencies, trained officers, and ECW devices increased by 1.8%, 8.5%, and 6.7%, respectively.

- The ratio of agency-owned ECWs to ECW-trained officers increased each year from .56 in 2013 to .79 in 2018, but decreased in 2019 to .77.

- Of 1,504 ECW contacts, 99.5% were people. The remainder (n = 8) were animals or fowl. Of the 1,496 human contacts, 92.4% were male, 60.9% were White, non-Hispanic, and the average age was 34.0 years.

- The officer(s) issued at least one ECW warning in 88.8% of the 1,496 human contacts (n = 1,323); 44.3% of contacts submitted to the warning and no deployment was made.

- An ECW was deployed in about half (48.6%) of the 1,496 human contacts; subjects submitted to deployments 66.6% of the time (484 submissions to 727 deployments).

INTRODUCTION

As required by the legislature, this report summarizes data provided by Massachusetts law enforcement agencies with electronic control weapons (ECW) for calendar year 2019. Agencies with ECWs are required to complete semi-annual reports on information related to: 1) the number of sworn officers serving the agency; 2) the number of ECW-trained officers serving the agency; 3) the number of ECWs owned by the agency; 4) the number of officers carrying ECWs; 5) the number of total ECW-related incidents that occurred during the reporting period; 6) general details about each incident (e.g., warnings, deployments, submissions, etc.); and 7) demographic information of the subject involved in the incident. Terms and definitions referenced in this report are provided on page 24.

ECW INCIDENTS AND POLICE DEPARTMENTS

During 2019, six new police departments began reporting use of ***electronic control weapons (ECW)***[1], raising the cumulative total to 286 **ECW** *agencies* in Massachusetts. Figure 1 illustrates the growth in municipal ECW reporting agencies from 2005 to 2019. The greatest concentration of cities and towns that did not have ECWs in 2019 are in the western region of the state, particularly Berkshire, Franklin and Hampshire counties. Barnstable and Middlesex counties also have a number of municipal police departments that do not own ECWs.

Figure 1. Massachusetts Law Enforcement Agency ECW Growth, 2005—2019[a]

Year ECWs Acquired
☐ No ECWs
▢ ECWs Acquired 2005 - 2009
▮ ECWs Acquired 2010 - 2014
▮ ECWs Acquired 2015 - 2019

---
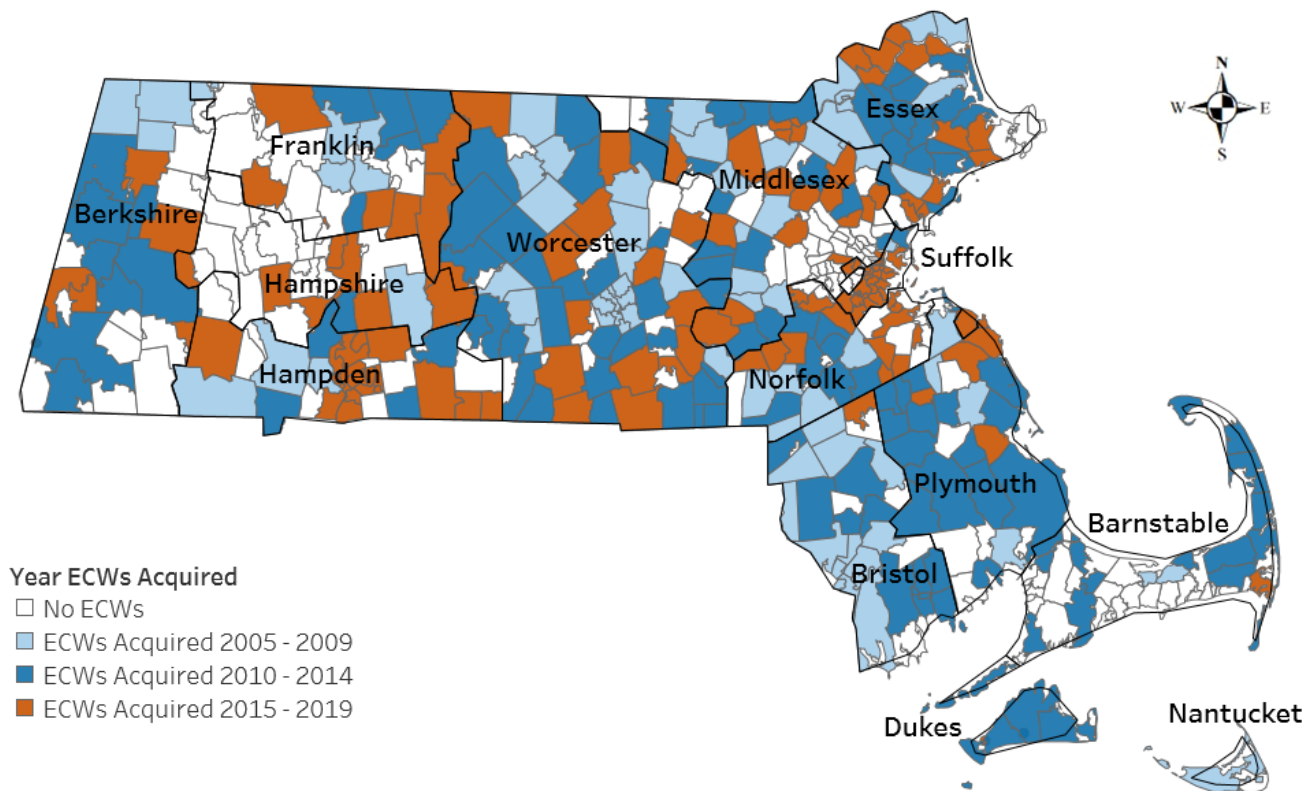
[1] a device utilized to immobilize a subject without causing serious injury, typically by administering an electric shock. An ECW is commonly referred to as stun gun or TASER®.

[a] Non-municipal departments reporting ECW use are excluded from Figure 1.

In Massachusetts, there were a total of 1,386 **ECW incidents**[2] reported in 2019. The number of incidents reported by each department ranged from zero (99 agencies) to 89 incidents (one agency) (Appendix Tables 1 - 3, pgs. A1 - A6). As shown in Figure 2, over three-quarters (78.7%) of agencies reported five or fewer incidents. Agencies reporting more than five incidents comprised 21.3% of the total, including 12 agencies reporting 25 or more incidents. Those 12 agencies accounted for 37.9% (525) of all ECW incidents in 2019.

Figure 2. Number of ECW Incidents by Agency, 2019

- 0 Incidents
- 1-5 Incidents
- 6-24 Incidents
- 25+ Incidents

99 34.6%
126 44.1%
49 17.1%
12 4.2%

n = 286
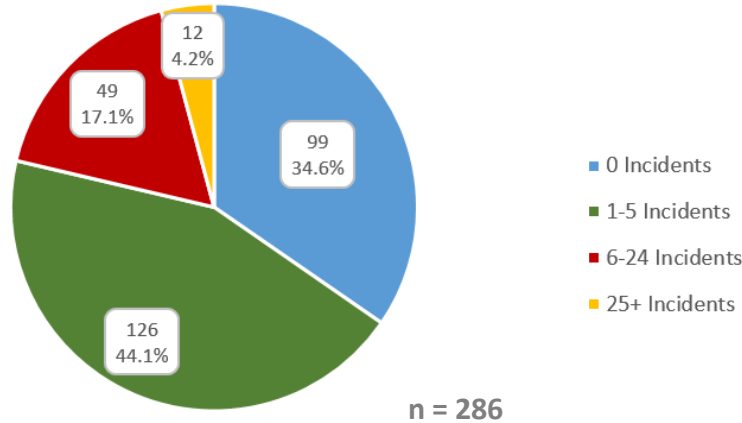
Figure 3. Massachusetts ECW Incidents in 2019[a]

ECW Incidents
☐ No ECWs
☐ No Incidents
☐ 1 - 2 Incidents
☐ 3 - 5 Incidents
☐ 6 - 12 Incidents
☐ 13 - 24 Incidents
☐ 25+ Incidents
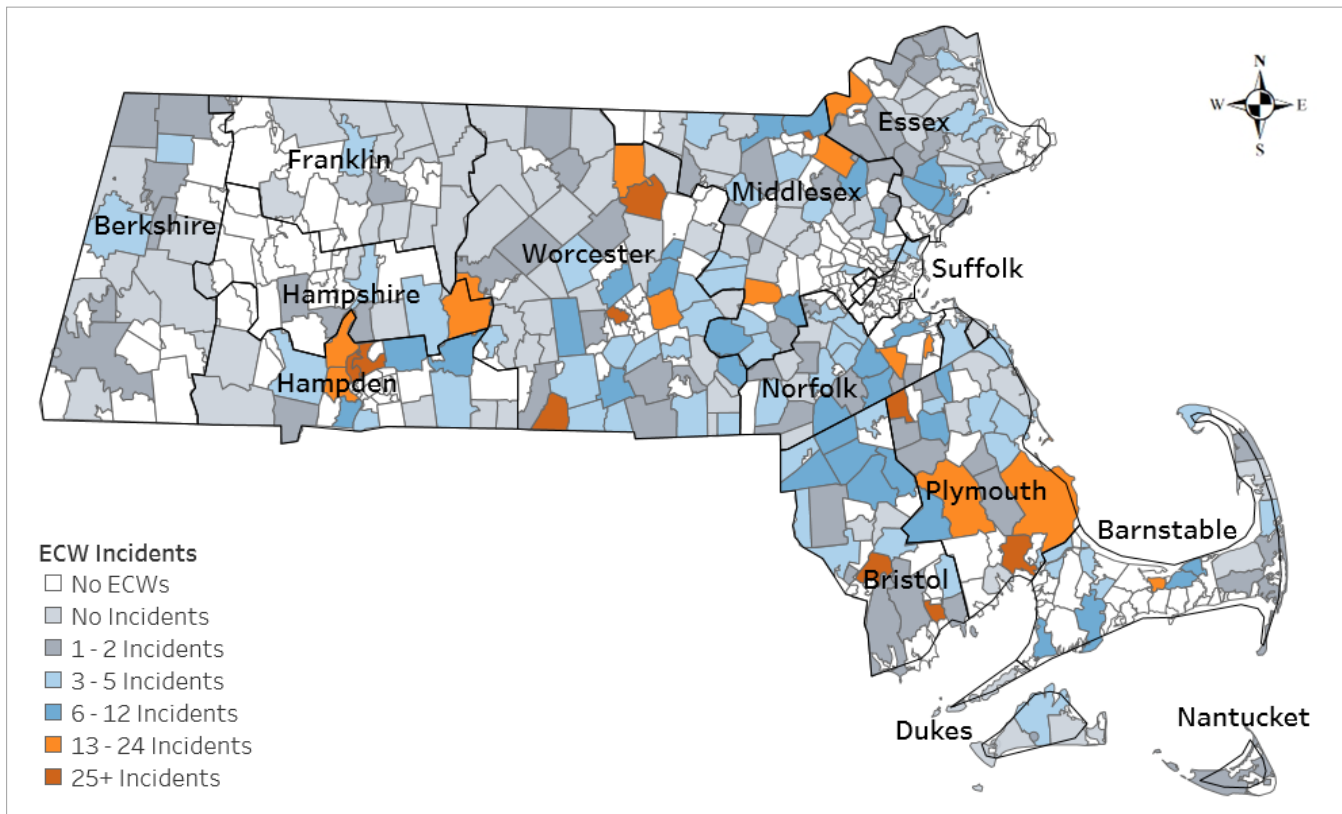
[2] an event in which an officer (or group of officers) issues a warning and/or deploys an ECW towards a single subject.

[a] Non-municipal departments reporting ECW use are excluded from Figure 3.

CURRENT TRENDS

Figure 4 and Table 1 illustrate the annual percent change in reported ECW incidents from 2014 to 2019. Overall, the number of ECW incidents has increased by 46% since 2014; however, 2019 reported a decline, breaking a 10-year trend of increasing annual incidents.

Each year from 2014 to 2017, growth in the number of ECW agencies, officers, and devices frequently outpaced growth in the number of ECW incidents (Table 1). An opposite pattern emerged in 2018, where growth in incidents outpaced growth in ECW agencies, officers, and devices. The most recent period from 2018 to 2019 shows minimal growth in ECW agencies (1.8%), sworn officers (3.5%), ECW trained officers (8.5%), and agency-owned devices (6.7%), and a decline in ECW incidents (-8.3%).

Figure 4. ECW Incidents and Percent Change, Calendar Years 2014 - 2019
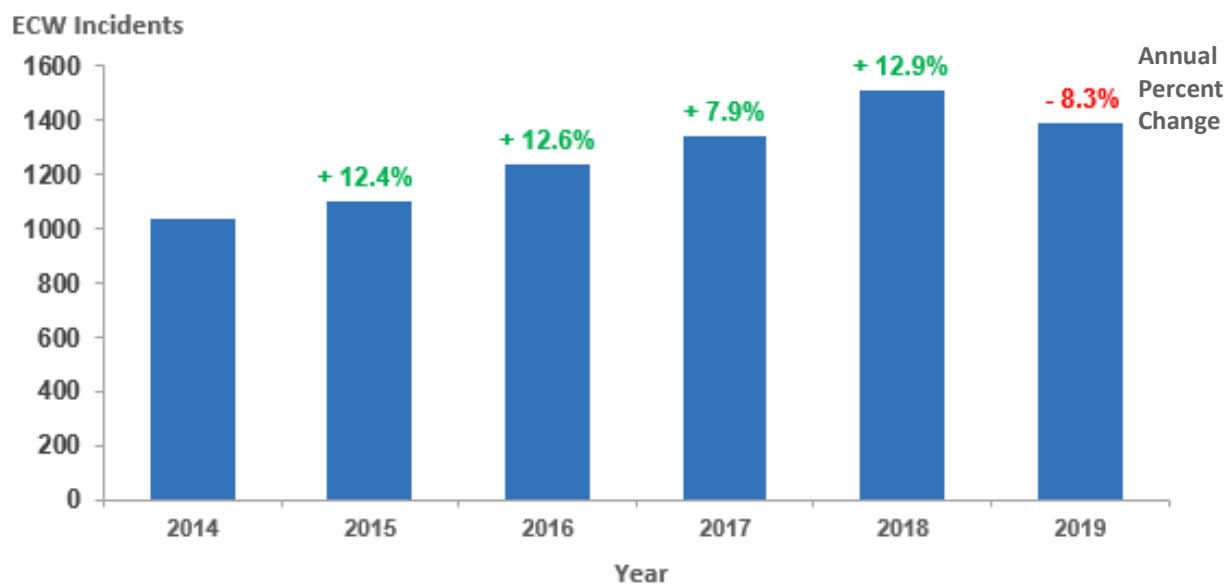
During the five-year period between 2014 and 2019, the average growth of agency-owned ECW devices (21.7%) far surpassed that seen in incidents (7.5%), agencies (8.1%), sworn officers (12%), and ECW trained officers (16.3%). The ratio of ECW incidents to ECW trained officers decreased over the last five years, from .18 in 2014 to .12 in 2019.

Table 1. Characteristics of ECW Reporting Agencies, 2014 - 2019

| Year | Number | | | | | | Annual Percent Change | | | | |
	2014	2015	2016	2017	2018	2019	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019
ECW Incidents	980	1,102	1,241	1,339	1,512	1,386	12.4%	12.6%	7.9%	12.9%	- 8.3%
ECW Agencies	195	230	250	275	281	286	17.9%	8.7%	10.0%	2.2%	1.8%
Sworn Officers [a]	9,318	11,139	14,385	15,106	15,574	16,126	19.5%	29.1%	5.0%	3.1%	3.5%
ECW Trained Officers	5,363	6,512	8,215	9,691	10,425	11,313	21.4%	26.2%	18.0%	7.6%	8.5%
ECW Agency-Owned Devices	3,358	4,223	5,626	7,481	8,219	8,766	25.8%	33.2%	33.0%	9.9%	6.7%

[a] Sworn officers include all part-time, full-time, reserve and other officers serving in ECW agencies.

ECW Contacts

From January 1 through December 31, 2019, ECW reporting agencies recorded 1,504 **ECW contacts**.[3] Eight contacts involved animals or fowl, such as dogs or turkeys. The remaining 1,496 ECW contacts involved people.

The majority (92.4%) of the 1,496 human contacts involved male subjects (Appendix Table 4, pg. A7). Almost two-thirds comprised White, non-Hispanic subjects (60.9%), followed by Black, non-Hispanic subjects (19.7%), Hispanic subjects (16.8%), and subjects of other races (0.9%).[4] The average age of contacts was 34.0 years (*SD* = 11.3 years), with over three-quarters of contacts involving subjects between 20 and 44 years of age (75.6%) (Appendix Table 5, pg. A7). Subjects in the two oldest age groups (60 - 64 years and 65+ years) represented the smallest proportion of ECW contacts (1.5% and 1.1%, respectively).

ECW Warnings and Submissions

Of the 1,496 ECW contacts with human subjects, 88.8% (1,323) involved the officer(s) issuing at least one **ECW warning** (**verbal warning**, **laser warning**, or **spark warning**)[5] in an attempt to gain the subject's compliance. As shown in Table 2 (pg. 6), officers issued one type of ECW warning in 45% of contacts, with verbal warnings being the most common (571 of 596, 95.8%). The rate of compliance for contacts with one warning, however, was the lowest for verbal warnings (34.2%). Excluding the spark warning (n = 1), laser warnings had the highest rate of compliance (66.7%), though these instances were rare (n = 24).

Most ECW contacts (55%) involved multiple warnings. Of these, the verbal and laser warning combination comprised the vast majority (661 of 727, 90.9%) and resulted in a relatively high compliance rate of 53.4%. Laser and spark warning combinations were recorded in only two contacts, but had a compliance rate of 100%. A combination of verbal and spark warnings had a compliance rate of 33.3%, followed by a combination of all three ECW warnings with a 27% compliance rate.

---

[3]'ECW Contact' refers to an individual officer's deployment, warning, or display of an ECW towards a single subject. Multiple ECW contacts can occur during a single ECW incident, (e.g., an incident in which two officers each issue a warning and/or deploy an ECW at a subject is considered two contacts and one incident). This section details ECW contacts between officers and subjects.

[4]*Other* comprises the race/ethnicity categories of American Indian/Alaska native, Asian, Native Hawaiian or other Pacific Islander, two or more races, and other (specified).

[5]*ECW Warnings:*

Laser warning— a visual warning whereby an officer employs the laser function of the ECW device to indicate that an ECW will be deployed.

Spark warning— a visual warning whereby an officer employs a spark on a handheld stun device in order to demonstrate its effectiveness.

Verbal warning— any spoken words or display of the ECW that would indicate to a subject that an ECW may be used. This warning can include: 1) Any direct wording to a subject indicating or implying that an ECW will be used. Example: Displaying ECW and shouting, "Stop!" 2) Any indirect wording that a subject may overhear indicating or implying that an ECW is about to be deployed. Example: A warning to other officers that an ECW is about to be

A smaller number of contacts (173 or 11.6%) received no warning prior to ECW deployment. Agencies indicated that sudden actions by the subject (i.e., subjects becoming combative during handcuffing) required immediate **ECW deployment** (**probe deployment, 5– second cycle,** and/or **stun deployment**)[6] and precluded an opportunity for the officer to issue a warning. Additionally, incidents involving two or more officers may result in one warning but more than one deployment. Thus, both contacts would indicate a deployment, but only one would show a warning was given.

Table 2. ECW Warning Types by Submissions, 2019

Characteristic	Warnings		Submissions		Percent that Submit
	Number	Percent	Number	Percent	
Total	**1,496**				
No Warning	173	11.6%			
One Warning	596	45%	212	36.2%	35.6%
Verbal	571	43.2%	195	33.3%	34.2%
Laser	24	1.8%	16	2.7%	66.7%
Spark	1	0.1%	1	0.2%	100%*
Total	**1,323**	**100%**	**586**	**100%**	**44.3%**
Multiple Warnings	727	55%	374	63.8%	51.4%
Verbal/laser	661	50%	353	60.2%	53.4%
Verbal/spark	27	2.0%	9	1.5%	33.3%
Laser/spark	2	0.2%	2	0.3%	100%*
Verbal/laser/spark	37	2.8%	10	1.7%	27%

* Percentages with such a small denominator are not statistically reliable.

[6] *ECW Deployments:*

Probe deployment— the act of firing two small dart-like probes from the ECW, which attach to the subject. The device then delivers a 5-second electrical cycle, which can be repeated as needed in order to incapacitate the subject to the point of submission.

5-second cycle— a five second electrical charge resulting from a probe deployment, which can be repeated as needed.

Stun deployment— the act of bringing the ECW device into direct contact with the subject's skin or clothing in order to induce pain to the point of submission. Stuns can be repeated as needed if the subject does not initially submit.

CONTACT CHARACTERISTICS

Table 3 presents demographics data on the contacts for which subject characteristics are known. The data show officers' use of warnings and/or ECW deployments by subject sex, race/ethnicity, and age. A consistent pattern is revealed across all of the subject groups: a) in about 50% of contacts, the officer(s) issues an ECW warning with no subsequent ECW deployment; b) in about 40% of contacts, the officer(s) issues an ECW warning and an ECW deployment; and c) in about 10% of contacts, the officer(s) deploys an ECW with no prior ECW warning.

Appendix Tables 4 and 5 (pg. A7) breakdown the data slightly differently, looking at contacts with a warning or contacts with an ECW deployment by subject sex, race/ethnicity, and age. The percentages are similar by sex, and differ slightly by race/ethnicity, and age. Those in the Hispanic category had the highest proportion of contacts with warnings (91.7%) followed by the White, non-Hispanic category (88.4%), while those in the "Unknown", and the Black, non-Hispanic categories had the highest percentage of contacts with an ECW deployment (62.5% and 54.6%, respectively). Subjects in the 55 to 59 years and 40 to 44 years age categories received the highest percent of contacts with a warning (95.7% and 93.2%, respectively). Additionally, subjects in the youngest age groups had the smallest percentage of contacts with an ECW deployment: 17 or younger (27.1%) and 18 - 19 years (40.0%).

Table 3. Percent of Contacts With a Warning and/or ECW Deployment by Subject Characteristic, 2019[a]

Characteristic		Contacts with Warning(s), No ECW Deployment		Contacts with Warning(s) and ECW Deployment(s)		Contacts with ECW Deployment(s), No Warning		Total
		Number	Percent[b]	Number	Percent[b]	Number	Percent[b]	Number
Sex	Male	684	50.3%	540	39.7%	135	9.9%	1,359
	Female	59	53.2%	40	36.0%	12	10.8%	111
	Total	**743**	**50.5%**	**580**	**39.5%**	**147**	**10.0%**	**1,470**
Race/ Ethnicity	White, non-Hispanic	469	52.8%	336	37.8%	84	9.4%	889
	Black, non-Hispanic	132	45.1%	126	43.0%	35	11.9%	293
	Hispanic	124	49.4%	107	42.6%	20	8.0%	251
	Other	9	69.2%*	3	23.1%*	1	7.7%*	13
	Total	**734**	**50.8%**	**572**	**39.6%**	**140**	**9.7%**	**1,446**
Age	Less than 20 Years	65	66.3%	22	22.4%	11	11.2%	98
	20 – 24 Years	115	53.0%	76	35.0%	26	12.0%	217
	25 – 29 Years	128	47.6%	115	42.8%	26	9.7%	269
	30 – 34 Years	121	45.5%	112	42.1%	33	12.4%	266
	35 – 39 Years	109	50.7%	85	39.5%	21	9.8%	215
	40 – 44 Years	69	47.3%	69	47.3%	8	5.5%	146
	45 – 49 Years	50	56.8%	34	38.6%	4	4.5%	88
	50 – 54 Years	38	50.7%	31	41.3%	6	8.0%	75
	55 Years or Older	38	46.3%	35	42.7%	9	11.0%	82
	Total	**733**	**50.3%**	**579**	**39.8%**	**144**	**9.9%**	**1,456**

[a] Excludes unknown/missing from totals: race/ethnicity (n = 24) and age (n = 14).

[b] Percent calculated from total of each characteristic.

* Percentages with such a small denominator are not statistically reliable.

ECW DEPLOYMENTS

Of the 286 Massachusetts agencies with ECWs in 2019, 45.8% (131 agencies) reported 0 ECW deployments. The remaining 54.2% (155 agencies) reported between one and 100 deployments, totaling 1,101 weapon (probe and/or stun) deployments. Of the agencies with a deployment, over half (80 agencies, 51.6%) reported between one and three ECW deployments.

Appendix Tables 6 - 8 (pgs. A8 - A14) provide information on the type of deployment by department, revealing a slightly higher overall usage of stun deployments, also known as a 'drive stun' (605; 55.0%), compared to probe deployments (496; 45.0%). Additionally, the range of stun deployments per department is more widely dispersed (1 to 63) than probe deployments (1 to 58).

Figure 5 displays the number of ECW deployments by agency, excluding non-municipal agencies.

Figure 5. Massachusetts ECW Deployments in 2019[a]

---
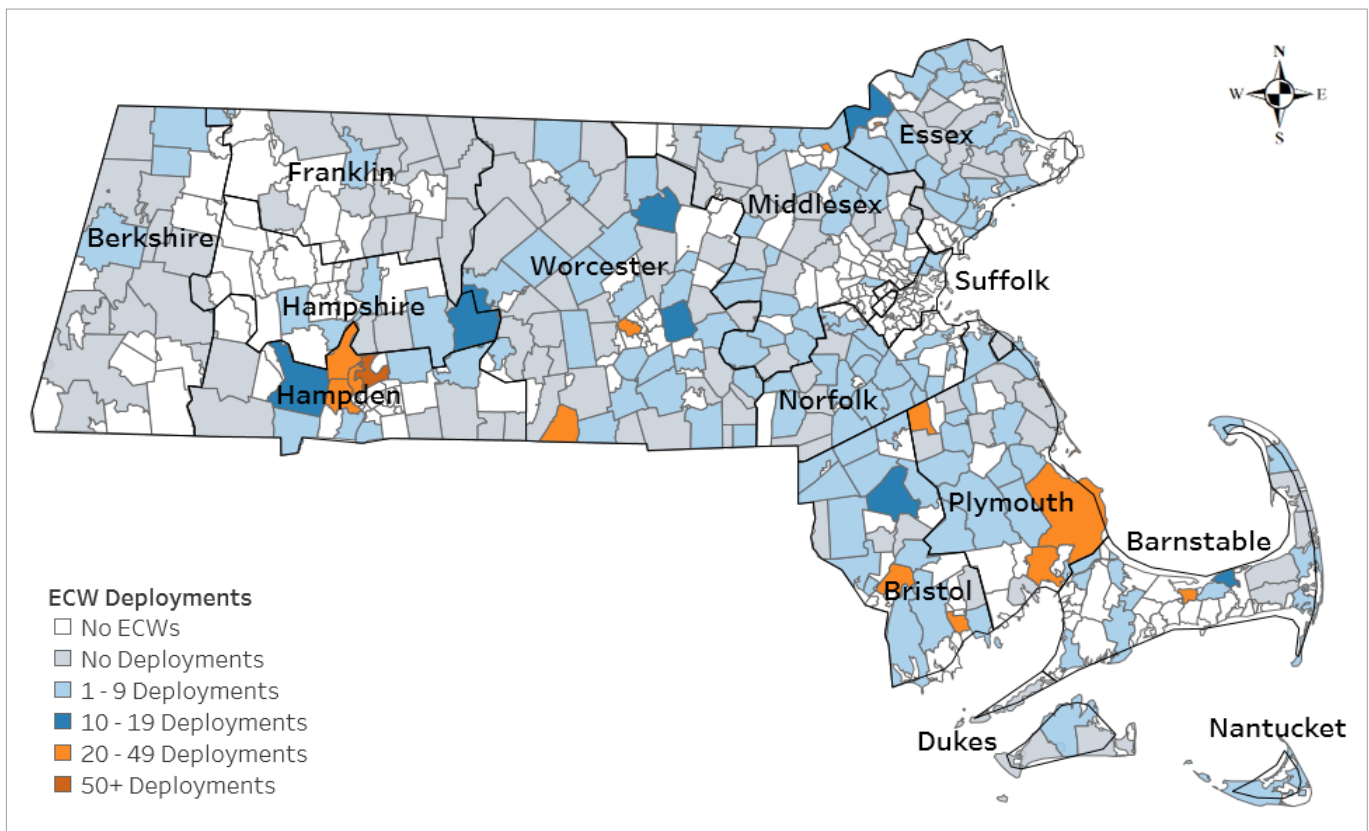
[a] Non-municipal departments reporting ECW use are excluded from Figure 5.

Figure 6 is a density chart illustrating the number of reported ECW incidents and deployments by agency. The majority of agencies are concentrated around low numbers of ECW incidents and deployments (shown in red). In fact, 34.6% of agencies reported no ECW incidents (99 agencies) and 49.5% (131 agencies) reported no ECW deployments.

Figure 6. ECW Incidents and Deployments Density Chart, 2019
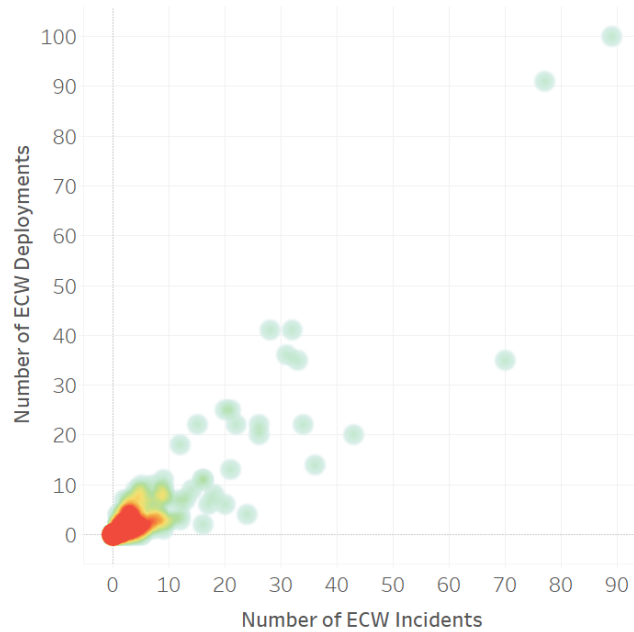
Officers deployed ECWs in about half (48.6%) of the 1,496 human contacts (Table 4). Of the 727 incidents where an ECW was deployed, 47.7% involved the use of only stun deployments (bringing the ECW device into direct contact with the subject's skin or clothing) and 44.8% involved the use of only probe deployments (the firing of two small dart-like probes from the ECW, which attach to the subject and can emit an electrical charge). 8.2% of the incidents involved a combination of probe and stun deployments. Overall, subjects submitted to the deployment of an ECW 66.6% of the time. Subjects submitted to individual stun deployments more often than individual probe deployments (72.6% and 61.3%, respectively). Combined probe and stun deployments had the lowest submission rate at 59.3%.

Table 4. Distribution of ECW Submissions by Deployment Type, 2019[a]

Characteristic	ECW Deployments		ECW Submissions		Percent that Submit
	Number	Percent	Number	Percent	
Probe	326	44.8%	200	41.3%	61.3%
Stun	347	47.7%	252	52.1%	72.6%
Combined Probe and Stun	54	7.4%	32	6.6%	59.3%
Total	**727**	**100.0%**	**484**	**100.0%**	66.6%

[a] excludes cases where subject was not a person.

Appendix Table 1. Number of Municipal and Non-municipal ECW Incidents, 2015 - 2019

	Number of Incidents per Year				
Agency Type	2015	2016	2017	2018	2019
Non-municipal	2	64	85	117	100
Municipal	1,100	1,177	1,254	1,395	1,286
Total	**1,102**	**1,241**	**1,339**	**1,512**	**1,386**

Appendix Table 2. Non-municipal ECW Incidents by Agency, 2015 - 2019

	Number of Incidents Per Year				
Agency Name	2015	2016	2017	2018	2019
Amtrak Police	--	--	--	0	0
Bridgewater State University	--	3	2	2	1
Cape Cod Regional Law Enforcement	0	0	1	0	0
Central Massachusetts Law Enforcement Council	1	0	0	0	1
Clark University	0	0	0	1	0
Massachusetts State Police	0	61	81	94	77
Massasoit Community College	0	0	1	2	0
Martha's Vineyard Police Tactical Response Team	1	0	0	0	0
University of Massachusetts, Lowell	--	--	--	0	2
University of Massachusetts, Memorial	--	--	0	4	3
University of Massachusetts Worcester	--	--	0	14	16
Total	**2**	**64**	**85**	**117**	**100**

Appendix Table 3. Municipal ECW Incidents by Agency, 2015 - 2019

	Number of Incidents per Year				
Agency Name	2015	2016	2017	2018	2019
Abington	1	1	1	1	2
Acushnet	6	3	7	4	3
Adams	3	2	0	1	3
Agawam	--	--	0	11	6
Amesbury	0	0	4	1	1
Andover	3	1	2	0	2
Aquinnah	0	0	0	0	0
Ashburnham	3	2	0	4	0
Ashfield	--	--	0	0	0
Ashland	0	5	6	2	5
Athol	7	4	0	0	0
Attleborough	12	7	5	8	12
Auburn	5	2	3	2	3
Avon	1	1	0	0	1
Ayer	3	3	3	3	0
Barnstable	27	26	24	15	15
Barre	4	10	5	4	2
Becket	0	0	0	0	0
Bedford	--	0	2	3	3
Belchertown	0	3	2	1	3
Berkley	0	1	0	2	0
Bernardston	1	0	0	0	0
Beverly	7	9	7	4	4
Billerica	4	2	0	4	2
Blackstone	3	1	5	1	3
Blandford	0	0	0	0	0

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

-- cells denoted by a "--" indicate the agency had not yet implemented use of Electronic Control Weapons.

Appendix Table 3. (continued) Number of Municipal ECW Incidents, 2015 - 2019

Number of Incidents per Year

Agency Name	2015	2016	2017	2018	2019
Bolton	--	6	0	0	0
Boston	--	1	4	1	0
Bourne	3	3	1	3	5
Boxborough	2	0	0	0	2
Boxford	0	0	1	0	0
Boylston	--	1	2	5	6
Brewster	3	4	2	3	0
Bridgewater	4	3	0	2	2
Brockton	27	15	26	22	28
Brookfield	5	4	1	0	0
Burlington	--	0	0	0	0
Canton	4	2	4	7	7
Carlisle	--	--	0	0	0
Carver	5	0	0	1	1
Charlton	0	1	2	2	5
Chatham	--	0	0	1	1
Chelmsford	1	4	6	5	5
Chelsea	5	6	2	5	3
Cheshire[a]	--	--	--	--	1
Chicopee	1	16	25	44	43
Chilmark	0	0	0	0	0
Clinton	10	3	4	9	6
Cohasset	--	1	0	1	0
Colrain	--	--	0	1	0
Concord	1	1	2	1	0
Dalton	1	0	1	0	1
Danvers	10	12	4	8	9
Dartmouth	9	5	3	4	1
Dedham	--	--	--	2	5
Deerfield	2	1	0	1	0
Dennis	10	7	4	7	9
Dighton	2	0	0	0	0
Douglas	0	5	3	1	1
Dover	1	0	0	0	0
Dracut	5	7	4	3	8
Dudley	--	0	3	2	3
Dunstable	0	3	0	0	0
Duxbury	2	1	0	1	3
East Bridgewater	1	4	1	5	9
East Brookfield	0	2	1	0	0
Eastham	0	2	1	0	3
Easthampton	--	--	2	4	2
Easton	1	8	4	3	5
Edgartown	3	2	2	0	0
Egremont	--	--	0	1	0
Erving	1	0	0	0	0
Essex	0	3	2	3	0
Everett	23	14	14	8	4
Fairhaven	2	4	3	4	1
Fall River	36	30	36	32	26

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

-- cells denoted by a "--" indicate the agency had not yet implemented use of Electronic Control Weapons.

[a] Agency began using Electronic Control Weapons during 2019.

Appendix Table 3. (continued) Number of Municipal ECW Incidents, 2015 - 2019

Number of Incidents per Year

Agency Name	2015	2016	2017	2018	2019
Falmouth	20	14	11	8	7
Fitchburg	0	14	27	19	24
Foxborough	7	6	6	7	7
Framingham	8	14	10	13	20
Franklin	5	7	8	4	4
Freetown	1	1	4	1	3
Gardner	13	10	11	5	2
Georgetown	0	0	0	0	0
Gill	0	0	0	0	0
Gosnold	0	0	0	0	0
Grafton	7	12	4	6	4
Granby	--	--	0	0	0
Granville	0	0	0	0	0
Great Barrington	5	2	2	5	1
Greenfield	3	9	10	6	5
Groton	1	0	0	0	0
Groveland	0	0	0	0	0
Hadley[a]	--	--	--	--	3
Hamilton	--	--	--	1	0
Hampden	1	1	0	0	0
Hanson	2	3	3	0	0
Hardwick	1	5	2	1	2
Harwich	2	6	4	3	1
Hatfield	--	--	0	0	0
Haverhill	0	0	0	0	2
Hingham	3	8	1	6	3
Hinsdale	--	--	0	0	0
Holbrook	--	0	0	0	1
Holden	0	2	5	12	7
Holland	--	0	0	1	0
Holliston	0	3	2	0	4
Holyoke	9	23	34	27	20
Hopedale	0	0	0	0	0
Hopkinton	--	--	6	6	6
Hubbardston	1	2	1	3	0
Hudson	4	2	6	5	4
Hull	7	3	1	8	1
Ipswich	3	3	0	0	4
Kingston	3	5	6	5	3
Lakeville	16	5	5	1	8
Lanesborough	0	0	1	0	0
Lawrence	52	34	22	23	31
Lee	0	0	1	0	0
Leicester	1	4	3	0	2
Lenox	1	1	0	1	0
Leominster	17	22	12	34	36
Leverett	--	--	0	0	0
Lincoln	--	0	1	2	0
Littleton	3	4	4	3	4
Longmeadow	--	0	0	1	4

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

-- cells denoted by a "--" indicate the agency had not yet implemented use of Electronic Control Weapons.

[a] Agency began using Electronic Control Weapons during 2019.

Appendix Table 3. (continued) Number of Municipal ECW Incidents, 2015 - 2019

Number of Incidents per Year

Agency Name	2015	2016	2017	2018	2019
Lowell	--	26	61	63	34
Ludlow	0	0	0	13	10
Lunenburg	0	0	0	4	0
Lynn[a]	--	--	--	--	12
Lynnfield	0	1	2	0	0
Manchester-by-the-Sea	--	--	0	1	1
Mansfield	8	8	3	13	10
Marblehead	1	3	4	4	2
Marion	5	5	1	1	0
Marlborough	10	9	11	7	5
Marshfield	7	5	3	5	0
Mashpee	5	11	11	8	9
Maynard	4	3	5	0	1
Medfield	--	--	1	2	1
Medway	--	--	0	2	1
Mendon	2	0	0	1	0
Merrimac	2	0	1	1	2
Methuen	13	17	18	6	16
Middleborough	7	7	12	11	13
Middleton	0	0	4	3	2
Milford	6	5	2	7	8
Millbury	6	7	3	6	5
Millis	--	--	3	1	0
Millville	0	0	0	0	0
Monson	--	--	2	7	5
Montague	0	0	1	4	2
Nantucket	1	3	1	0	2
Natick	8	8	7	14	9
Needham	2	4	5	2	4
New Bedford	82	63	69	89	32
New Braintree	0	0	1	0	0
New Marlborough	0	0	0	0	0
New Salem	--	0	0	0	0
Newbury	1	0	2	2	0
Newburyport	0	0	6	3	5
Norfolk	1	2	0	0	0
North Adams	1	2	5	1	1
North Andover	0	3	1	2	2
North Attleborough	2	2	3	7	3
North Brookfield	0	7	3	0	0
North Reading	1	3	3	1	1
Northborough	2	5	1	2	3
Northbridge	--	1	1	4	1
Northfield	0	0	0	0	0
Norton	6	7	11	10	6
Norwell	0	3	0	1	0
Norwood	6	4	3	3	4
Oak Bluffs	4	5	2	10	5
Oakham	4	1	0	0	0
Orange	0	5	2	2	0
Orleans	4	1	2	0	1

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

-- cells denoted by a "--" indicate the agency had not yet implemented use of Electronic Control Weapons.

[a] Agency began using Electronic Control Weapons during 2019.

Number of Incidents per Year

Agency Name	2015	2016	2017	2018	2019
Oxford	3	13	15	12	10
Palmer	7	11	9	11	8
Paxton	2	0	0	3	0
Peabody	1	5	9	21	12
Pembroke	5	10	5	2	5
Pepperell	4	8	4	3	4
Petersham	0	0	0	0	0
Phillipston	0	0	0	1	0
Pittsfield	8	11	14	8	3
Plainville	0	3	1	0	0
Plymouth	23	17	16	9	22
Plympton	2	0	1	1	1
Princeton	--	--	0	0	1
Provincetown	5	4	4	6	4
Quincy	--	--	--	4	9
Randolph	6	19	16	16	18
Raynham	5	9	10	5	6
Rehoboth	1	2	1	1	2
Revere	21	15	5	5	3
Rockland	7	2	9	7	6
Rowley	0	2	1	2	0
Royalston[a]	--	--	--	--	0
Rutland	1	4	1	4	4
Salem	0	2	4	6	9
Salisbury	0	0	0	1	0
Sandwich	0	3	2	2	3
Scituate	--	--	--	10	4
Seekonk	5	11	8	4	3
Sharon	0	0	3	3	2
Sheffield	4	1	1	1	0
Sherborn	1	0	0	0	2
Shirley	0	2	4	0	1
Shrewsbury	0	0	0	18	16
Shutesbury	--	1	3	0	0
Somerset	0	3	2	0	1
South Hadley	5	9	2	4	1
Southborough	0	1	1	4	0
Southbridge	21	15	28	15	26
Southwick	0	0	2	0	2
Spencer	10	3	2	8	7
Springfield	14	65	81	94	89
Sterling	0	2	2	1	0
Stockbridge	2	0	0	0	1
Stoneham	--	--	0	3	8
Stoughton	20	10	14	18	12
Stow	0	0	0	0	0
Sturbridge	10	4	6	2	1
Sudbury	0	0	1	2	0
Sunderland	0	0	0	0	0
Sutton	0	0	0	1	1
Swampscott	0	0	0	0	1

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

-- cells denoted by a "--" indicate the agency had not yet implemented use of Electronic Control Weapons.

[a] Agency began using Electronic Control Weapons during 2019.

Appendix Table 3. (continued) Number of Municipal ECW Incidents, 2015 - 2019

Number of Incidents per Year

Agency Name	2015	2016	2017	2018	2019
Swansea	4	5	5	2	3
Taunton	12	10	7	13	7
Templeton	1	0	3	3	0
Tewksbury	14	18	8	17	17
Tisbury	2	0	0	0	3
Topsfield	0	0	0	1	1
Townsend	1	1	2	3	0
Truro	0	2	0	1	1
Tyngsborough	7	2	2	9	8
Upton	0	0	0	0	0
Uxbridge	0	8	6	6	3
Wakefield	--	3	3	8	2
Wales	--	0	0	0	0
Walpole	11	3	10	5	3
Ware	--	--	5	13	21
Wareham	24	15	14	24	33
Warren	1	1	0	0	3
Warwick	0	0	0	0	0
Watertown[a]	--	--	--	--	3
Webster	13	9	12	8	4
Wellesley[a]	--	--	--	--	1
Wellfleet	0	0	1	0	0
Wenham	0	1	0	1	0
West Boylston	1	0	3	1	0
West Bridgewater	5	0	3	4	1
West Brookfield	1	0	2	1	0
West Newbury	--	--	0	0	1
West Springfield	16	19	10	12	21
West Stockbridge	0	0	0	0	0
West Tisbury	0	0	0	0	1
Westborough	--	1	2	8	4
Westfield	23	10	12	17	5
Westford	--	--	0	2	2
Westminster	4	1	1	0	0
Westport	1	1	0	2	2
Westwood	0	5	0	2	3
Weymouth	0	6	27	16	14
Whately	--	--	0	0	0
Whitman	11	4	6	4	4
Williamstown	2	0	2	2	2
Wilmington	--	--	0	2	9
Winchendon	6	4	8	4	2
Winchester	0	0	0	1	0
Woburn	4	2	1	4	0
Worcester	59	45	63	59	70
Wrentham	11	5	7	4	1
Yarmouth	6	4	7	5	7
Total	**1,100**	**1,177**	**1,254**	**1,395**	**1,286**

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

-- cells denoted by a "--" indicate the agency had not yet implemented use of Electronic Control Weapons.

[a] Agency began using Electronic Control Weapons during 2019.

Appendix Table 4. Distribution of ECW Contacts, Warnings, and Deployments by Subject Sex and Race/Ethnicity, 2019

Characteristic	Contacts		Warnings		Deployments		Percent of Contacts with a Warning	Percent of Contacts with a Weapon Deployment
	Number	Percent	Number	Percent	Number	Percent		
Total	**1496**	**100%**	**1323**	**100%**	**727**	**100%**	**88.4%**	**48.6%**
Sex								
Male	1383	92.4%	1224	92.5%	675	92.8%	**88.5%**	48.8%
Female	113	7.6%	99	7.5%	52	7.2%	87.6%	46%
Race/Ethnicity								
White, non-Hispanic	911	60.9%	805	60.8%	420	57.8%	88.4%	46.1%
Black, non-Hispanic	295	19.7%	258	19.5%	161	22.1%	87.5%	54.6%
Hispanic	252	16.8%	231	17.5%	127	17.5%	91.7%	50.4%
Other[a]	14	0.9%	12	0.9%	4	0.6%	85.7%	28.6%
Unknown	24	1.6%	17	1.3%	15	2.1%	70.8%	62.5%

[a]The race/ethnicity categories of American Indian/Alaska native, Asian, Native Hawaiian or other Pacific Islander, two or more races, and other (specified) comprise *other*.

Appendix Table 5. Distribution of ECW Contacts, Warnings, and Deployments by Subject Age, 2019

Subject Age	Contacts		Warnings		Deployments		Percent of Contacts with a Warning	Percent of Contacts with a Weapon Deployment
	Number	Percent	Number	Percent	Number	Percent		
Total	**1496**	**100%**	**1323**	**100%**	**727**	**100%**	**88.4%**	**48.6%**
17 or Younger	48	3.2%	43	3.3%	13	1.8%	89.6%	27.1%
18-19 Years	50	3.3%	44	3.3%	20	2.8%	88%	40%
20-24 Years	219	14.6%	191	14.4%	102	14%	87.2%	46.6%
25-29 Years	272	18.2%	243	18.4%	141	19.4%	89.3%	51.8%
30-34 Years	270	18%	233	17.6%	145	19.9%	86.3%	53.7%
35-39 Years	222	14.8%	194	14.7%	106	14.6%	87.4%	47.7%
40-44 Years	148	9.9%	138	10.4%	77	10.6%	93.2%	52%
45-49 Years	91	6.1%	84	6.3%	38	5.2%	92.3%	41.8%
50-54 Years	77	5.1%	69	5.2%	37	5.1%	89.6%	48.1%
55-59 Years	47	3.1%	45	3.4%	24	3.3%	95.7%	51.1%
60-64 Years	22	1.5%	20	1.5%	13	1.8%	90.9%	59.1%
65 or Older	16	1.1%	8	0.6%	7	1%	50%	43.8%
Unknown	14	0.9%	11	0.8%	4	0.6%	78.6%	28.6%

Appendix Table 6. Number of Municipal and Non-municipal ECW Deployments, Calendar Year 2019

Agency Type	Number of ECW Deployments		
	Probe Cycles	Stuns	Total
Municipal	434	571	1,005
Non-municipal	62	34	96
Total	**496**	**605**	**1,101**

Appendix Table 7. Non-municipal ECW Deployments by Agency, Calendar Year 2019

Agency Name	Number of ECW Deployments		
	Probe Cycles	Stuns	Total
Amtrak Police	0	0	0
Bridgewater State University	0	0	0
Cape Cod Regional Law Enforcement	0	0	0
Central Massachusetts Law Enforcement Council	1	0	1
Clark University	0	0	0
Massachusetts State Police	58	33	91
Massasoit Community College	0	0	0
Martha's Vineyard Police Tactical Response Team	0	0	0
University of Massachusetts, Lowell	1	0	1
University of Massachusetts, Memorial	1	0	1
University of Massachusetts Worcester	1	1	2
Total	**62**	**34**	**96**

Appendix Table 8. Municipal ECW Deployments by Agency, Calendar Year 2019

Agency Name	Number of ECW Deployments		
	Probe Cycles	Stuns	Total
Abington	0	0	0
Acushnet	0	0	0
Adams	3	1	4
Agawam	2	5	7
Amesbury	0	2	2
Andover	0	1	1
Aquinnah	0	0	0
Ashburnham	0	0	0
Ashfield	0	0	0
Ashland	5	4	9
Athol	0	0	0
Attleborough	3	4	7
Auburn	2	1	3
Avon	0	2	2
Ayer	0	0	0
Barnstable	5	17	22
Barre	4	0	4

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

Appendix Table 8. (continued) Number of Municipal ECW Deployments, Calendar Year 2019

	Number of ECW Deployments		
Agency Name	Probe Cycles	Stuns	Total
Barnstable	5	17	22
Barre	4	0	4
Becket	0	0	0
Bedford	0	1	1
Belchertown	3	2	5
Berkley	0	0	0
Bernardston	0	0	0
Beverly	4	2	6
Billerica	2	0	2
Blackstone	0	4	4
Blandford	0	0	0
Bolton	0	0	0
Boston	0	0	0
Bourne	4	3	7
Boxborough	2	3	5
Boxford	0	0	0
Boylston	3	0	3
Brewster	0	0	0
Bridgewater	2	3	5
Brockton	14	27	41
Brookfield	0	0	0
Burlington	0	0	0
Canton	1	1	2
Carlisle	0	0	0
Carver	1	0	1
Charlton	0	0	0
Chatham	2	0	2
Chelmsford	0	1	1
Chelsea	3	2	5
Cheshire[a]	0	0	0
Chicopee	3	17	20
Chilmark	0	0	0
Clinton	4	0	4
Cohasset	0	0	0
Colrain	0	0	0
Concord	0	0	0
Dalton	0	0	0
Danvers	2	0	2
Dartmouth	3	0	3
Dedham	4	2	6
Deerfield	0	0	0
Dennis	7	4	11
Dighton	0	0	0
Douglas	0	0	0

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

[a] Agency began using Electronic Control Weapons during 2019.

Agency Name	Number of ECW Deployments		
	Probe Cycles	Stuns	Total
Dover	0	0	0
Dracut	3	0	3
Dudley	0	2	2
Dunstable	0	0	0
Duxbury	0	0	0
East Bridgewater	1	0	1
East Brookfield	0	0	0
Eastham	0	0	0
Easthampton	0	2	2
Easton	0	1	1
Edgartown	0	0	0
Egremont	0	0	0
Erving	0	0	0
Essex	0	0	0
Everett	3	1	4
Fairhaven	2	0	2
Fall River	17	5	22
Falmouth	1	2	3
Fitchburg	2	2	4
Foxborough	0	3	3
Framingham	1	5	6
Franklin	1	1	2
Freetown	3	4	7
Gardner	2	2	4
Georgetown	0	0	0
Gill	0	0	0
Gosnold	0	0	0
Grafton	1	2	3
Granby	0	0	0
Granville	0	0	0
Great Barrington	0	0	0
Greenfield	6	2	8
Groton	0	0	0
Groveland	0	0	0
Hadley[a]	0	3	3
Hamilton	0	0	0
Hampden	0	0	0
Hanson	0	0	0
Hardwick	1	0	1
Harwich	0	0	0
Hatfield	0	0	0
Haverhill	1	1	2
Hingham	1	0	1
Hinsdale	0	0	0

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

[a] Agency began using Electronic Control Weapons during 2019.

	Number of ECW Deployments		
Agency Name	Probe Cycles	Stuns	Total
Holbrook	2	0	2
Holden	1	0	1
Holland	0	0	0
Holliston	0	0	0
Holyoke	8	17	25
Hopedale	0	0	0
Hopkinton	2	0	2
Hubbardston	0	0	0
Hudson	3	6	9
Hull	0	0	0
Ipswich	0	2	2
Kingston	1	0	1
Lakeville	1	3	4
Lanesborough	0	0	0
Lawrence	10	26	36
Lee	0	0	0
Leicester	0	0	0
Lenox	0	0	0
Leominster	3	11	14
Leverett	0	0	0
Lincoln	0	0	0
Littleton	0	0	0
Longmeadow	2	2	4
Lowell	11	11	22
Ludlow	0	7	7
Lunenburg	0	0	0
Lynn[a]	9	9	18
Lynnfield	0	0	0
Manchester-by-the-Sea	2	0	2
Mansfield	0	3	3
Marblehead	0	7	0
Marion	0	0	0
Marlborough	4	0	4
Marshfield	0	0	0
Mashpee	5	4	9
Maynard	0	1	1
Medfield	1	0	1
Medway	2	0	2
Mendon	0	0	0
Merrimac	0	1	1
Methuen	6	5	11
Middleborough	6	1	7
Middleton	0	1	1
Milford	2	4	6

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

[a] Agency began using Electronic Control Weapons during 2019.

Appendix Table 8. (continued) Number of Municipal ECW Deployments, Calendar Year 2019

Agency Name	Number of ECW Deployments		
	Probe Cycles	Stuns	Total
Millbury	0	2	2
Millis	0	0	0
Millville	0	0	0
Monson	0	0	0
Montague	0	0	0
Nantucket	0	2	2
Natick	3	0	3
Needham	1	0	1
New Bedford	24	17	41
New Braintree	0	0	0
New Marlborough	0	0	0
New Salem	0	0	0
Newbury	0	0	0
Newburyport	1	1	2
Norfolk	0	0	0
North Adams	1	0	1
North Andover	0	2	2
North Attleborough	1	3	4
North Brookfield	0	0	0
North Reading	0	0	0
Northborough	0	0	0
Northbridge	0	0	0
Northfield	0	0	0
Norton	1	0	1
Norwell	0	0	0
Norwood	2	6	8
Oak Bluffs	2	0	2
Oakham	0	0	0
Orange	0	0	0
Orleans	1	0	1
Oxford	2	1	3
Palmer	0	4	4
Paxton	0	0	0
Peabody	2	2	4
Pembroke	0	1	1
Pepperell	0	3	3
Petersham	0	0	0
Phillipston	0	0	0
Pittsfield	6	0	6
Plainville	0	0	0
Plymouth	15	7	22
Plympton	1	0	1
Princeton	1	0	1
Provincetown	5	0	5

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

Appendix Table 8. (continued) Number of Municipal ECW Deployments, Calendar Year 2019

Agency Name	Number of ECW Deployments		
	Probe Cycles	Stuns	Total
Quincy	3	5	8
Randolph	2	6	8
Raynham	1	1	2
Rehoboth	0	1	1
Revere	0	4	4
Rockland	0	0	0
Rowley	0	0	0
Royalston[a]	0	0	0
Rutland	0	4	4
Salem	3	6	9
Salisbury	0	0	0
Sandwich	4	1	5
Scituate	1	0	1
Seekonk	0	0	0
Sharon	1	0	1
Sheffield	0	0	0
Sherborn	1	0	1
Shirley	0	0	0
Shrewsbury	5	6	11
Shutesbury	0	0	0
Somerset	0	2	2
South Hadley	0	0	0
Southborough	0	0	0
Southbridge	8	12	20
Southwick	0	1	1
Spencer	3	4	7
Springfield	37	63	100
Sterling	0	0	0
Stockbridge	0	0	0
Stoneham	1	7	8
Stoughton	2	1	3
Stow	0	0	0
Sturbridge	0	0	0
Sudbury	0	0	0
Sunderland	0	0	0
Sutton	0	2	2
Swampscott	2	2	4
Swansea	0	2	2
Taunton	9	1	10
Templeton	0	0	0
Tewksbury	2	4	6
Tisbury	1	0	1
Topsfield	0	0	0
Townsend	0	0	0

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

[a] Agency began using Electronic Control Weapons during 2019.

Number of ECW Deployments

Agency Name	Probe Cycles	Stuns	Total
Truro	1	1	2
Tyngsborough	3	1	4
Upton	0	0	0
Uxbridge	0	3	3
Wakefield	0	0	0
Wales	0	0	0
Walpole	2	1	3
Ware	5	8	13
Wareham	8	27	35
Warren	3	4	7
Warwick	0	0	0
Watertown[a]	0	2	2
Webster	0	0	0
Wellesley[a]	1	0	1
Wellfleet	0	0	0
Wenham	0	0	0
West Boylston	0	0	0
West Bridgewater	0	0	0
West Brookfield	0	0	0
West Newbury	0	1	1
West Springfield	3	22	25
West Stockbridge	0	0	0
West Tisbury	4	0	4
Westborough	2	0	2
Westfield	1	9	10
Westford	0	0	0
Westminster	0	0	0
Westport	3	1	4
Westwood	0	3	3
Weymouth	4	5	9
Whately	0	0	0
Whitman	0	3	3
Williamstown	0	0	0
Wilmington	2	5	7
Winchendon	0	1	1
Winchester	0	0	0
Woburn	0	0	0
Worcester	18	17	35
Wrentham	0	0	0
Yarmouth	2	0	2
Total	**434**	**571**	**1,005**

Note: Agencies can acquire ECWs throughout the year, so an agency's first reporting year may not span a full 12 months.

[a] Agency began using Electronic Control Weapons during 2019.

Terms and Definitions

These terms and definitions are provided to police departments on the ECW reporting forms that they submit.

Electronic Control Weapon (ECW)— a device utilized to immobilize a subject without causing serious injury, typically by administering an electric shock. An ECW is commonly referred to as stun gun or TASER®.

ECW agency— a law enforcement agency in Massachusetts with electronic control weapons.

ECW contact— each individual officer's deployment, warning, or display of an ECW towards a single subject. *Example:* (Four officers respond to one call and only one officer issues a warning and a second officer deploys a weapon on a single subject. This would be one incident and two contacts.

ECW deployment:

> *Probe deployment—* the act of firing two small dart-like probes from the ECW, which attach to the subject. The device then delivers a 5-second electrical cycle, which can be repeated as needed in order to incapacitate the subject to the point of submission.

> *5-second cycle—* a five-second electrical charge resulting from a probe deployment, which can be repeated as needed.

> *Stun deployment—* the act of bringing the ECW device into direct contact with the subject's skin or clothing in order to induce pain to the point of submission. Stuns can be repeated as needed if the subject does not initially submit.

ECW incident— an event in which an officer (or group of officers) issue a warning and/or deploy an ECW towards a single subject.

ECW warning:

> *Laser warning—* a visual warning whereby an officer employs the laser function of the ECW device to indicate that an ECW will be deployed.

> *Spark warning—* a visual warning whereby an officer employs a spark on a handheld stun device in order to demonstrate its effectiveness.

> *Verbal/Visual warning—* any spoken words or display of the ECW that would indicate to a subject that an ECW may be used. This warning can include: 1) Any direct wording to a subject indicating or implying that an ECW will be used. *Example:* Displaying ECW and shouting, "Stop!" 2) Any indirect wording that a subject may overhear indicating or implying that an ECW is about to be deployed. *Example:* A warning to other officers that an ECW is about to be deployed by saying "Taser, Taser, Taser."

About the Research and Policy Analysis Division

A division of the Massachusetts Executive Office of Public Safety and Security, Office of Grants and Research (OGR), the Research and Policy Analysis Division (RPAD) and its Statistical Analysis Center, uses research and evaluation to promote public safety. RPAD works on a number of projects including electronic control weapons reporting, provider sexual crime report analysis, the collection of statewide county release data for recidivism, and the development of criminal justice data standards.

Acknowledgments