


Analysis of Public Emergency Transport Towns in MA

Study commissioned by Board of Selectmen and Finance Committee

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Presented in the following slides are:

1. Summary data on the universe of towns in the Commonwealth that, like Manchester, provide public advanced life support (ALS) and basic life support (BLS) transport as well as detailed data on five of them considered most similar
2. Analysis of Manchester's immediate neighbors
3. Comparative statistics relative to top average single family tax bill towns

Purpose: Identify "Like" Peers to Manchester's fire department for benchmarking purposes.



Manchester is among a small peer group

- 100 of the 350 communities in the commonwealth offer public ALS/ BLS transport for their residents. The balance either rely on private ambulance services or some combination thereof (where they may have basic life support service but not advanced life support).
 - 50 of these communities have populations of fewer than 10,000.
 - Of these 50 “smaller” communities, 13 of them are located on Cape Cod, communities that more than triple their populations during the summer months.
 - This leaves 37 “like” peers, of which only four towns (Cohasset, West Bridgewater, Southborough, and Avon) spend over \$200 per capita.
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To Recap, Manchester is among a small comparable group

350	(Communities in the Commonwealth)
- 250	(Communities that outsource ALS/BLS Transport)
100	= Potential MBTS-like Peers
- 50	(with populations over 10,000)
- 13	(Towns on Cape Cod with 3X summer populations)
37	= Similar sized Communities
- 18	Towns that spend less than \$100 per capita (MBTS: \$219*)
19	= Reasonable Peers

*\$219 per capita is based on 2016 budget not including benefits or transport revenues. After benefits and net of transport revenues, per capita expenditures are \$249.



From these 19 Reasonable Peers, we met with 5 of them

- Avon (\$407 per capita)
 - West Bridgewater (\$284)
 - **Cohasset** (\$269)
 - Southborough (\$209)
 - Ayer (\$198)
 - Plainville (\$197)
 - **Middleton** (\$163)
 - Plympton (\$141)
 - Orange (\$124)
 - **Marion** (\$120)
 - Hopedale (\$118)
 - Mendon (\$117)
 - Freetown (\$114)
 - Halifax (\$113)
 - Sturbridge (\$113)
 - Townsend (\$109)
 - Ashburnham (\$105)
 - **Topsfield** (\$104)
 - Dighton (\$100)
 - **Added: Newbury** (\$80)
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Communities spending \$200 or more per capita on Fire/ EMS are few (only 11 of 50 towns with populations below 10,000)

Towns on the Cape

•Brewster	\$233
•Chatham	\$513
•Eastham	\$389
•Orleans	\$478
•Truro	\$801
•Wellfleet	\$469

Non Cape Towns

•Avon*	\$407
•Cohasset	\$266
•Manchester	\$219
•Southborough*	\$209
•West Bridgewater*	\$284

*Per capita expenditures are not valuable measures for Avon and West Bridgewater because they derive 53% and 39% of their levy from commercial and industrial enterprises respectively. Southborough also is distorted because it derives 15% of its revenues from the industrial and commercial segment.



Manchester and Cohasset have the most costly staffing model

	Manchester	Topsfield	Middleton	Newbury	Marion	Cohasset
Population	5,249	6,388	9,419	6,853	4,919	8,273
Road Miles	39.4	60.6	56.9	66.8	40.6	47.8
Avg Single Family Tax Bill	11,760	8,836	7,320	5,052	6,197	11,483
Fire Budget						
Before Benefits	\$1,150,217	\$850,272	\$1,631,020	\$887,351	\$953,151	\$2,199,774
Including Benefits*	1,570,877	979,706	1,889,888	1,049,143	1,017,868	2,911,660
Revenues	263,035	100,000	516,235	218,695	349,559	507,487
Full Budget net of Revenues	1,307,842	879,706	1,373,653	830,448	668,309	2,404,173
Per Capita Expenditures						
Before Benefits	\$219	\$133	\$173	\$129	\$194	\$266
After Benefits	299	153	201	153	207	352
Net of Revenues	249	138	146	121	136	291

* Represents Actual Benefits for Manchester and "pro forma" benefits for other towns as if their benefits equate to Manchester's benefits per fulltime firefighter.

Manchester and Cohasset are the only two towns with more than 10 full-time firefighters

	Fulltime Firefighters	Call Firefighters	Fulltime Firefighters Per 1,000 Residents
Manchester:	13	11	2.48
Topsfield:	4	18	0.63
Middleton:	8	24	0.85
Newbury:	5	40	0.73
Marion:	2	34	0.41
Cohasset:	22	4	2.66

Among the peers examined, only Cohasset mans its fire station 24-7 with a minimum of four fulltime firefighters


	Fulltime Firefighters	Hours Fire Station is Manned	Minimum # on Duty	Back up Contract: Private Ambulance	# Calls Annually	Population	# of Calls as a % of Population	Miles from Nearest Hospital
Manchester	13	24-7	3**	No	481	5,249	9%	8.6
Topsfield	8	6 AM-6 PM	3/0	Northeast	614	6,388	10%	4.4
Middleton	4	24-7	3	No	731	9,419	8%	2.8
Newbury	5	7 AM-5 PM*	4/2	Cataldo	681	6,853	10%	4.7
Marion	2	24-7	4/2***	No	737	4,919	15%	6.8
Cohasset	22	24-7	4	No	722	8,273	9%	10

*Newbury mans its two firehouses with full-time firefighters on weekdays and call firefighters filling the day shifts on weekends.


** Typically vacant shift is not backfilled leaving 2 on duty frequently, not including Chief who works weekdays

*** Includes Chief and Captain weekdays

Some of the reasons cited for towns opting to offer EMT transport are the following:

- **Gradual shift of EMS from Police to Fire Departments.** As recently as the 1960s, police departments often provided EMS but as crime increased and the incidence of fire declined, fire departments increasingly assumed this role
 - **Relevance.** Smoke detectors and fewer fire incidents have encouraged fire departments to add ALS/BLS transport to remain fire relevant and increase the return on investment per firefighter in the dual role
 - **Seamless care.** Housing EMS in fire departments that act as “all hazard response units” allows for seamless care from firefighters who are trained to enter hazardous environments and also provide emergency medicine
 - **Distance from hospital and town size.** Smaller towns that are remote relative to private ambulance services and area hospitals opt to provide transport to shorten response times for residents
 - **Revenue.** Many towns consider the transport revenues an opportunity to defray the fixed cost of running the fire department
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Benchmarking is difficult because fire departments vary based on a range of anecdotal differences


- **Tradition.** Towns with a strong history as call departments tend to be more effective in retaining a continued commitment from call firefighters
 - **Demographic shifts.** The changing life demands and demographic shifts of towns away from blue collar to white collar communities cut into the number of individuals willing to volunteer as call firefighters (Weekday hours can be especially challenging to fill even for successful call departments.)
 - **Catch 22.** The shift towards a fulltime department becomes a catch 22 as call firefighters find themselves less vital and unable to count on part-time shift opportunities
 - **Training.** Increased training regimens also reduce the appeal. (The state first mandated Fire 1 and 2 training requirements in 1995 and for those departments adhering to this standard, this training is an enormous barrier to entry for new call firefighters.)
 - **Community Affluence.** Towns with more money tend to spend more on the fire departments as a general rule, unless they have long established call departments
 - **Economies of scale.** Minimum staffing numbers place smaller towns at a disadvantage relative to larger ones in terms of per capita costs
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Manchester's Fire Department outspends its neighbors

Neighboring Towns	Population	Average Single Fam Tax Bill	2014 Fire Budget	Fire Budget Exp Per Capita
Essex	3,606	\$7,887	\$257,115	\$71
Hamilton	8,131	8,926	621,539	76
Ipswich	13,574	6,854	1,551,315	114
Rockport	7,131	5,903	260,838	37
Wenham	5,055	10,159	571,582	113
Manchester	5,249	\$11,760	\$1,155,764	\$220

Source:https://dls.gateway.dor.state.ma.us/DLSReports/DLSReportViewer.aspx?ReportName=Comparative_Report&ReportTitle=Community+Comparison+Report

Note that numbers are based on 2014 whereas in other areas of the report, 2016 numbers are cited.



Only one of our neighbors (Ipswich) mans its fire station 24/7 and only two provide BLS transport.

Neighboring Towns	Fulltime Firefighters	Call Firefighters	Fulltime Firefighters Per 1,000 Residents	Manned 24/7?	EMT Transport?	Miles from Hospital
Essex	0	40	0.00	No	BLS only	6.8
Hamilton	4	22	0.49	No	No	6.6
Ipswich	18	12	1.33	Yes	No	9.8
Rockport*	0	50	0.00	No	BLS only	5.5
Wenham	3	26	0.59	No	No	3.6
Manchester	13	11	2.48	Yes	Yes	8.6

*Distance from Rockport to Beverly is 17.9 miles and to Addison Gilbert is 5.5 miles

The two towns with BLS transport rely on private ambulance companies to provide transport for ALS.

Wealthy towns on average spend more on fire than less wealthy ones

Towns with Highest Average Single Family Tax Bill	Ranking	Average Single Family Tax Bill	Fire Expenditures	Population	Fire per Capita
Weston	1	18,762	3,045,801	11,853	257
Sherborn	2	15,104	392,748	4,239	93
Lincoln	3	15,033	1,340,079	6,565	204
Dover	4	14,149	424,388	5,797	73
Wellesley	5	13,971	4,740,996	29,090	163
Carlisle	6	13,588	305,513	5,028	61
Lexington	7	12,955	5,349,929	32,650	164
Concord	8	13,490	3,790,062	19,285	197
Sudbury	9	12,082	3,388,728	18,367	185
Manchester	10	11,760	1,155,764	5,249	220
Wayland	11	11,730	2,390,092	13,444	178
Belmont	12	11,656	4,540,868	25,332	179

Note that three of the listed towns (Carlisle, Sherborn and Dover) have call departments due to a long history as rural towns



Larger towns spread the fixed cost of their departments over a larger population to reduce per capita costs

Top Single Family Tax Bill Towns (Sorted by Population)	Population	Family Tax Bill	Fire Expenditures	Fire Per Capita
Lexington	32,650	12,955	5,349,929	164
Wellesley	29,090	13,971	4,740,996	163
Belmont	25,332	11,656	4,540,868	179
Concord	19,285	13,490	3,790,062	197
Sudbury	18,367	12,082	3,388,728	185
Wayland	13,444	11,730	2,390,092	178
Weston	11,853	18,762	3,045,801	257
Lincoln	6,565	15,033	1,340,079	204
Dover (Call Department)	5,797	14,149	424,388	73
Manchester	5,249	11,760	1,155,764	220
Carlisle (Call Department)	5,028	13,588	305,513	61
Sherborn (Call Department)	4,239	15,104	392,748	93

The exceptions are the three call departments: Carlisle, Dover and Sherborn

Distance from hospitals may also be a cost factor

Top Single Family Tax Bill Towns Sorted by Distance from Hospital	Miles from Hospital	Family Tax Bill	Fire Expenditures	Population	Fire Per Capita
Manchester	8.6	11,760	1,155,764	5,249	220
Carlisle	7.9	13,588	305,513	5,028	61
Sudbury	6.9	12,082	3,388,728	18,367	185
Sherborn	5.8	15,104	392,748	4,239	93
Weston	5.6	18,762	3,045,801	11,853	257
Lincoln	5.5	15,033	1,340,079	6,565	204
Dover	4.0	14,149	424,388	5,797	73
Wellesley	3.5	13,971	4,740,996	29,090	163
Belmont	2.4	11,656	4,540,868	25,332	179
Lexington	2.0	12,955	5,349,929	32,650	164
Concord	1.8	13,490	3,790,062	19,285	197
Wayland	0.7	11,730	2,390,092	13,444	178

Manchester's response times are better than its peers

	Medical Emergency		Fire		Total Calls	
	Avg. Response Time (minutes)	# of Incidents	Avg. Response Time (minutes)	# of Incidents	Avg. Response Time (minutes)	# of Incidents
Cohasset	6.7	869	6.8	92	5.6	2,093
Marion	4.7	765	5.3	22	5.0	1,193
Middleton	11.5	818	6.6	54	11.8	1,724
Newbury	6.2	251	6.8	18	5.8	677
Topsfield	4.6	513	5.0	91	2.4	1,947
Average						
Incl. Middleton	6.8		6.1		6.1	
Excl Middleton	5.6		6.0		4.7	
Manchester	3.8	454	4.5	20	3.9	948

Source: Massachusetts Fire Incident Reporting System. Request submitted to Derryl Dion. Calendar year 2015 Data.

Manchester's response times are better than its neighboring communities

	Medical Emergency			Fire			Total All Calls	
	Avg. Response Time	# of Incidents		Avg. Response Time	# of Incidents		Avg. Response Time	# of Incidents
Essex	7.1	49		7.9	17		7.4	225
Hamilton	4.2	46		5.6	19		5.6	424
Wenham	5.7	375		5.0	11		5.3	683
Average	5.6			6.2			6.1	
Manchester	3.8	454		4.5	20		3.9	948

Rockport did not report its response data to MFIRS

Manchester's response times compare well to wealthy towns

	Medical Emergency		Fire		Total Calls	
Top 12 Single Family Tax Bills*	Avg. Response Time	# of Incidents	Avg. Response Time	# of Incidents	Avg. Response Time	# of Incidents
Belmont	4.1	1,470	4.4	81	4.4	2,669
Concord	6.2	1,454	5.7	58	6.5	2,093
Dover	5.9	7	5.5	8	6.2	136
Lexington	NA		5.0	42	4.9	42
Lincoln	7.7	537	6.5	75	7.5	1,056
Sherborn	5.7	249	4.6	22	5.6	460
Sudbury	4.3	1,191	3.9	33	4.5	2,112
Wayland	2.9	1,089	3.0	30	3.5	3,544
Wellesley	5.6	1,899	5.2	37	5.6	4,080
Weston	6.3	1,188	5.7	36	5.9	2,288
Average of Top Towns	5.4		4.9		5.5	
Manchester	3.8	454	4.5	20	3.9	948

Despite the absence of obvious conclusions to be drawn from this study, there are takeaways worthy of consideration.

1. MBTS ranks #2 in its spending per capita on Fire/ EMS Transport relative to the top twelve average single family tax bill towns in the Commonwealth
 2. The town also has a fulltime staffing model that exceeds most of the towns examined
 3. The MBTS department's response times are shorter by one to two minutes compared to peers
 4. Even though recruiting/ retaining call firefighters is a challenge for all towns, most of the towns examined (even affluent ones) have been successful in holding onto a respectable list of call personnel
 5. None of the smaller towns, with the exception of Cohasset (population of 8,273) attempt to man their stations for two in two out coverage
 6. A majority of the towns surveyed have moved to central dispatch and are pleased with its effectiveness, associated cost savings and the technology upgrades afforded.
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