

**A Staffing Review of the
Reading Fire Department**



September 22, 2017

September 22, 2017

Table of Contents

Introduction:..... 3
Current Staffing Levels:..... 3
Recent Development Trends and Future Development Anticipated: 5
Comparable Communities: 6
Use of EMS Revenue to Offset Costs:..... 14
Review of the 1987 Study of the Reading Fire Department: 14
Recommendation: 16
Bibliography 17

Introduction:

In August of 2017 an internal study was conducted to determine how the Reading Fire Department compares with the fire departments in the 25 Peer Communities identified by the Finance Committee. We sought data from each of these communities in a wide range of areas such as: population, staffing, number of supervisors, Emergency Medical Services, EMS revenues, salary budget, overtime spending and other relevant data. As a result of this request we received data from 24 communities.

The goal of the study was to compare the Reading Fire Department to the comparable communities using a number of measurements to determine if additional staffing is warranted. A secondary goal was to look at development trends in Reading and potential development areas to predict future increases in call volume.

In addition to our comparable community data, the Town of Reading Economic Development Action Plan 2016-2022 developed by the Metropolitan Area Planning Council was reviewed to offer insights in future development. We also reviewed a study of the Reading Fire Department that was conducted in 1987. This report is titled a Survey of the Reading Fire Department and was prepared by George Paul Fire Safety Consultants Inc. This study was conducted to assist in locating the current Fire Department Headquarters building. Although a great deal of this study is outdated, there were recommendations to staffing levels and this data has been included.

Current Staffing Levels:

The Reading Fire Department's staffing consists of a Chief, Assistant Chief, five Captains, four Lieutenants, thirty six Firefighters, one Secretary and two part time Fire Alarm Technicians. The Department's 47 employees are organized around four Groups of eleven personnel (2 Officers and 9 Firefighters). Their primary focus is on delivery of emergency services. Administrative functions are performed by the Fire Chief, Assistant Fire Chief, Fire Prevention Officer and Department Secretary.

The Fire Chief has overall responsibility for emergency management, personnel, fire prevention, financial management, major purchases, overall maintenance of equipment, facilities and training. The Assistant Fire Chief is responsible for fire prevention, data collection, and maintenance of equipment, facilities and training. The Fire Prevention Officer is responsible for reviewing new development and ensuring code compliance, conducting fire prevention inspections, scheduling fire equipment and station maintenance. All senior level personnel respond to major emergencies. The Department secretary handles payroll, ambulance billing and other administrative functions.

The emergency medical system is supervised by a Firefighter who is designated as the EMS Coordinator. The EMS Coordinator is responsible for quality assurance and quality control, ambulance supplies and licensing. The EMS Coordinator is assigned to a shift and performs full firefighting duties. The EMS Coordinator is assisted by a Firefighter who is designated as the EMS Liaison. The EMS Liaison is responsible to perform EMS training ordering and stocking

medications. The EMS Liaison is assigned to a shift and performs full firefighting duties. Below in *figure 1* is the Reading Fire Department's organizational chart:

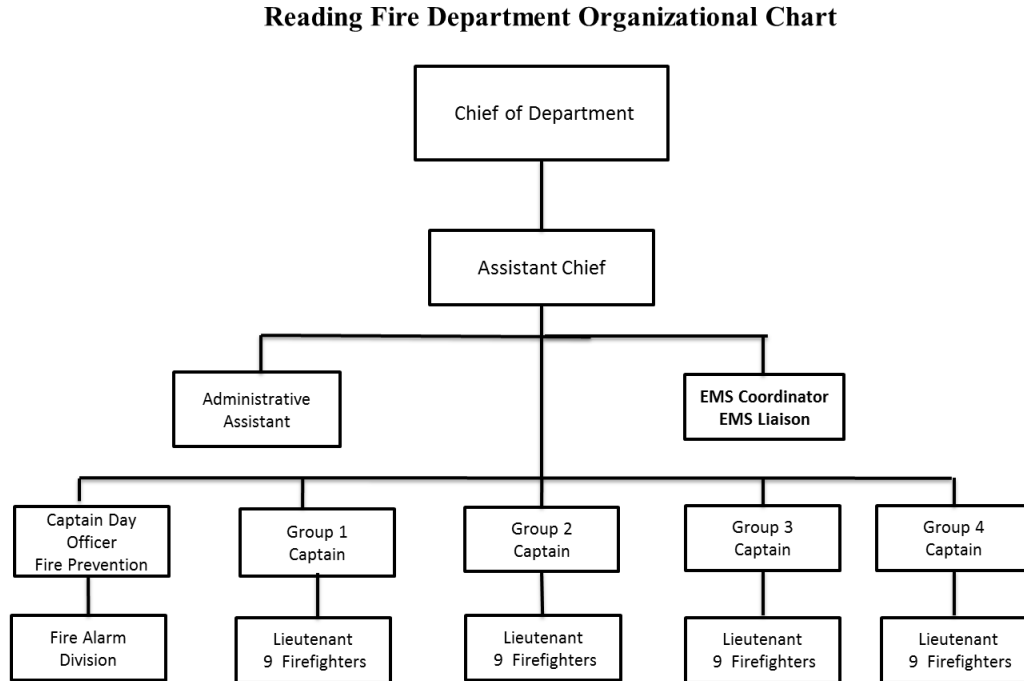


Figure 1

Of the 47 uniformed employees, 44 are assigned to a Firefighting group. Each day the on duty shift staffs two engines, a ladder truck and an ambulance. Each group is supervised by a Captain who is the shift commander. Captains are responsible to respond to emergencies, deliver services, training, scheduling, equipment maintenance and routine fire prevention duties. The Lieutenants are responsible for supervision of the West Side Fire Station and the Firefighters who are assigned there. The Lieutenants are responsible to respond to emergencies, deliver services, training, equipment maintenance and routine fire prevention duties.

To ensure each piece of fire apparatus has the personnel to operate it appropriately, the Fire Department has minimum staff level of 10 personnel per shift. It is important to note that the Fire Prevention Officer is considered part of the minimum staffing level.

Many calls require the response of more than one piece of fire apparatus. These calls include emergency medical responses, fires, motor vehicle accidents, construction accidents, hazardous materials incidents and flammable liquid spills. An example would be a motor vehicle accident on Routes 128 or 93, it not unusual for the call to require the response of an engine, ladder truck and the ambulance. If there are significant injuries on scene, the call will require the entire shift to respond.

Recent Development Trends and Future Development Anticipated:

Since the development of the Walkers Brook Drive area, we have seen several large residential projects including: the Reading Woods development located off South Street. This complex includes 9 large wood framed buildings and town homes, Reading commons located off West Street that includes 6 large wood framed buildings and town homes, Johnson Woods located off West Street that includes 5 large wood framed buildings and town homes. We have also seen mixed use development that combines residential and commercial space such as 24-54 Haven Street.

Below is *figure 2* is a breakdown of our emergency responses to these recent developments for calendar year 2016. Added together these developments represented 10% of our emergency medical responses in 2016.

Address	Occupancy	EMS	Fire	Total
Walkers Brook Drive	Commercial	52	43	95
New Crossing Road	Commercial	48	2	50
Reading Commons	Residential	31	19	50
Reading Woods	Residential	39	76	115
Johnson Woods	Residential	9	22	31
24-54 Haven Street	Mixed Residential-Commercial	11	6	17
General Way	Commercial	20	6	26
Total		210	174	384

Figure 2

There are plans for an additional mixed use development at the former Post Office site on Haven Street, and on Gould Street. There are plans for a large wood framed residential building located at the intersection of Prescott and Lincoln Streets. Plans are also underway for two large wood framed residential buildings located at the intersection of Lakeview Avenue and Eaton Street.

A review of the Town of Reading Economic Development Action Plan 2016-2022 developed by the Metropolitan Area Planning Council indicates Reading’s population is increasing and growing older. This plan uses population data from the 2010 U.S. Census where Reading’s population was listed as 24,747 and predicts a population increase of 10% by 2030. (MAPC, December 2015) Current population data from the Town Clerk’s Office places our population at 26,356. This is a 6.5% increase in population over the 2010 census population. This plan also predicts 75% increase to our senior population defined as over 66 years of age. (MAPC, December 2015)

The plan indicates that demand for housing is strong in Reading and predicts we will need an additional 950 housing units by 2020. The plan identified four Priority Development Areas in Reading. (MAPC, December 2015) They are as follows:

- PDA #1 Downtown 40R Proposed Expansion Area. This area offers potential growth in retail, restaurants and smaller office space on second and third floors of mixed use buildings and multifamily buildings.
- PDA#2 South Main Street. This area was identified as multifamily as being the most appropriate use for the PDA. The area could also have mixed use.
- PDA #3 New Crossing Road Development. This area was identified as multifamily as being the most appropriate use. The area could have potential for mixed use of residential and office space.
- PDA #4 One General Way. This site was most appropriate for office development in the area of 15,000 to 30,000 square feet. The remainder of the parcel could be used for other uses such as residential and retail. This site could also have a mix of retail and office space.

Although we do not know what the actual mix of development will be. It is clear as a community we are growing in population and will continue to grow into the near future. It is likely we will see more multi-floor, multi-unit wood framed buildings and multi-floor, multi-unit wood framed mixed use buildings. The factors of an increasing population, an increased senior population and an increase number of large residential buildings will combine to cause an increase in emergency medical and fire responses.

Comparable Communities:

The population levels of the comparable communities and the level of Emergency Medical Services provided by the each of the Fire Departments is illustrated in *Figure 3*. The population figure for Reading was obtained from the Town Clerk's Office and population figures for the comparable communities were obtained from each of the communities as part of the data request. A review of the data indicates Reading is on the higher level of the comparison communities and ranks the 9th highest in population.

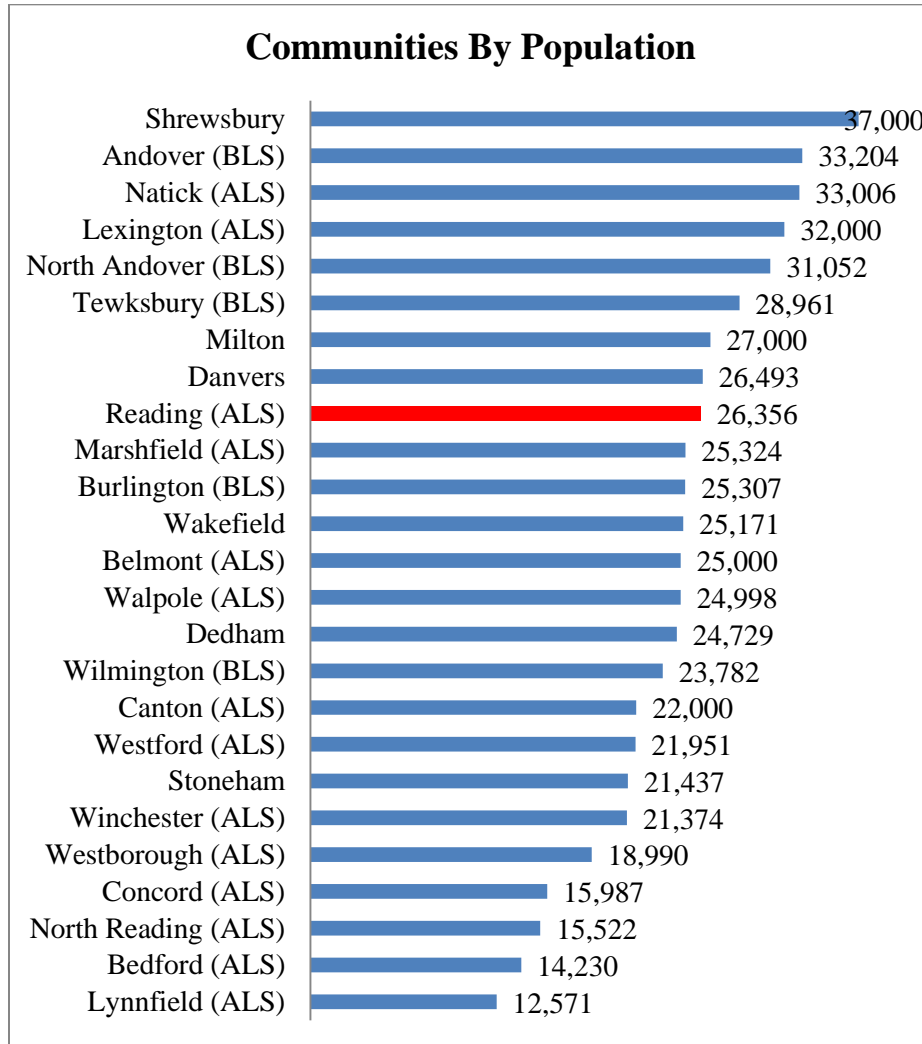


Figure 3

Figure 4 illustrates the total number of Firefighters in each of the Fire Departments in the comparable communities. In this comparison, Reading ranks 15th. It is important to point out that not all these Fire Departments provide emergency medical services. When a department provides this service, two on duty Firefighters per shift (for each staffed ambulance) spend a significant amount of time performing patient care and transport duties. This in effect reduces staffing available for firefighting duties. In Figure 3 the level of EMS provided is added in parenthesis after the community name. Communities that do not provide EMS services do not have an EMS level indicated. Secondly, the data reveals some of the comparable communities with a larger staff serve a smaller population.

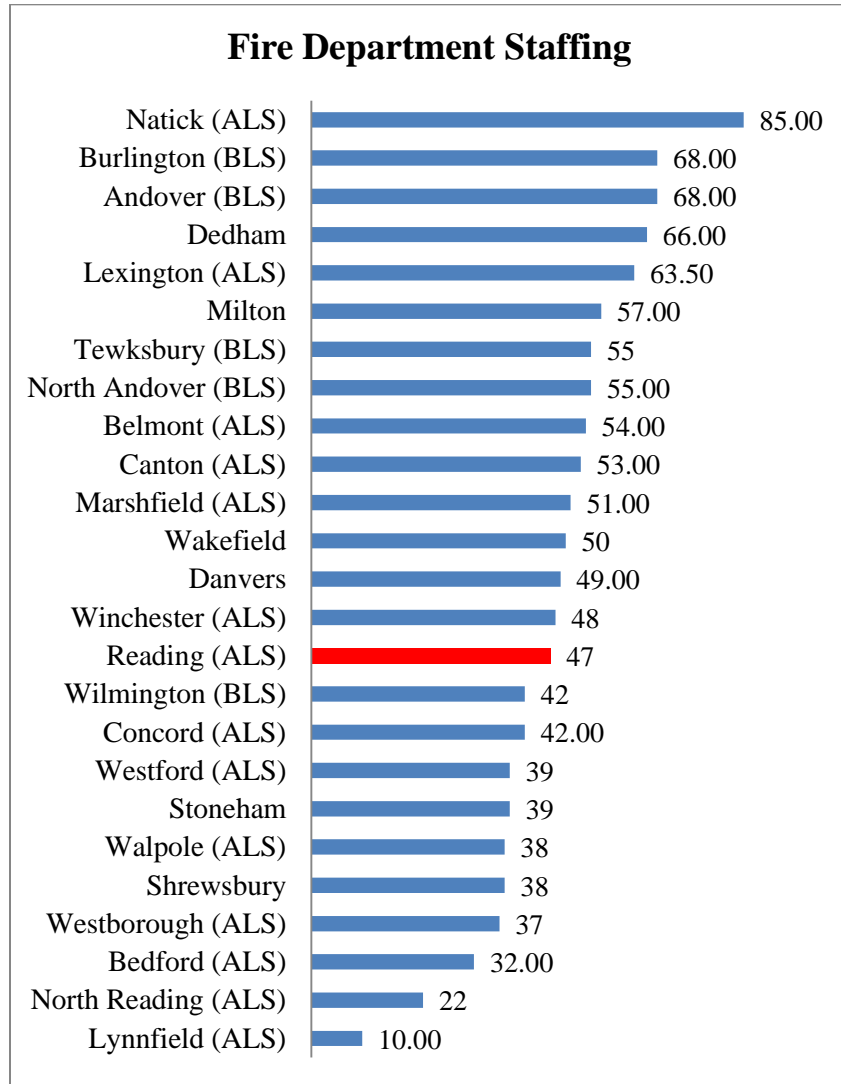


Figure 4

The number of supervisors in each of the comparable communities was examined. *Figure 5* illustrates the total number supervisors below the rank of Fire Chief in each of the Fire Departments. In this comparison, thirteen of the comparable communities have significantly more supervisors than the Reading Fire Department and eight communities have fewer total supervisors. The comparison shows the Reading Fire Department has a lower number of Lieutenants. In many of the comparable communities each engine and ladder company is staffed with a supervisor at the rank of Lieutenant and the shift commander responds in a utility vehicle. Communities with this staffing configuration have more Lieutenants.

Community	Assistant/Deputy Chiefs	Captains	Lieutenants	Total
Lynnfield (ALS)*	1	1	3	5
North Reading (ALS)	1	4	0	5
Shrewsbury	1	4	0	5
Bedford (ALS)	0	2	4	6
Wilmington (BLS)	1	0	6	7
Concord (ALS)	1	4	4	9
Walpole (ALS)	1	4	4	9
Westborough (ALS)	1	4	4	9
North Andover (BLS)	1	0	9	10
Reading (ALS)	1	5	4	10
Stoneham	0	5	5	10
Westford (ALS)	1	4	5	10
Marshfield (ALS)	1	4	8	13
Winchester (ALS)	0	5	8	13
Danvers	1	5	8	14
Milton	1	0	13	14
Canton (ALS)	1	5	9	15
Andover (BLS)	4	0	13	17
Burlington (BLS)	1	6	10	17
Dedham	4	0	13	17
Wakefield	0	5	12	17
Lexington (ALS)	2	4	12	18
Tewksbury (BLS)	1	5	12	18
Belmont (ALS)	1	5	13	19
Natick (ALS)	5	7	15	27

Note: Lynnfield has a Call Deputy Chief

Figure 5

The ratio of total staff per 1,000 citizens was examined and illustrated in *Figure 6*. The average fire department staffing for the comparable communities is 1.97 Firefighters per thousand citizens. Reading ranks at the 8th lowest staffing average at 1.78 per thousand citizens and this is below the comparable community average. To bring the Reading Fire Department up to the average level of these communities would require the addition of 4 Firefighters. It should be noted that the Lynnfield Fire Department's low staffing numbers skew this average in a downward direction.

Community	Population	Staff	Firefighters Per 1,000 Citizens
Lynnfield (ALS)	12,571	10.00	0.80
Shrewsbury	37,000	38	1.03
North Reading (ALS)	15,522	22	1.42
Walpole (ALS)	24,998	38	1.52
Wilmington (BLS)	23,782	42	1.77
North Andover (BLS)	31,052	55.00	1.77
Westford (ALS)	21,951	39	1.78
Reading (ALS)	26,356	47	1.78
Stoneham	21,437	39	1.82
Danvers	26,493	49.00	1.85
Tewksbury (BLS)	28,961	55	1.90
Westborough (ALS)	18,990	37	1.95
Lexington (ALS)	32,000	63.50	1.98
Wakefield	25,171	50	1.99
Marshfield (ALS)	25,324	51.00	2.01
Andover (BLS)	33,204	68.00	2.05
Milton	27,000	57.00	2.11
Belmont (ALS)	25,000	54.00	2.16
Winchester (ALS)	21,374	48	2.25
Bedford (ALS)	14,230	32.00	2.25
Canton (ALS)	22,000	53.00	2.41
Natick (ALS)	33,006	85.00	2.58
Concord (ALS)	15,987	42.00	2.63
Dedham	24,729	66.00	2.67
Burlington (BLS)	25,307	68.00	2.69
Average	24,538	48	1.97

Figure 6

The FY 18 budget was examined for all the fire departments in the comparable communities. In this examination only the salary portion of the budget was examined. This salary data includes the fiscal year overtime budget for each department. The expense portion of the budget was not examined since there are significant variations in how the different communities allocate the cost of utilities, heating, building maintenance and vehicle maintenance. Since Reading has centralized these costs into the budgets of other departments this comparison would not have yielded any useful data. Below in *Figure 7*, Reading can be seen as ranking 14th out of the 25 communities. It is important to highlight that Reading provides emergency medical care at the ALS level. Departments that provide this level of service incur more overtime training costs to recertify their paramedics.

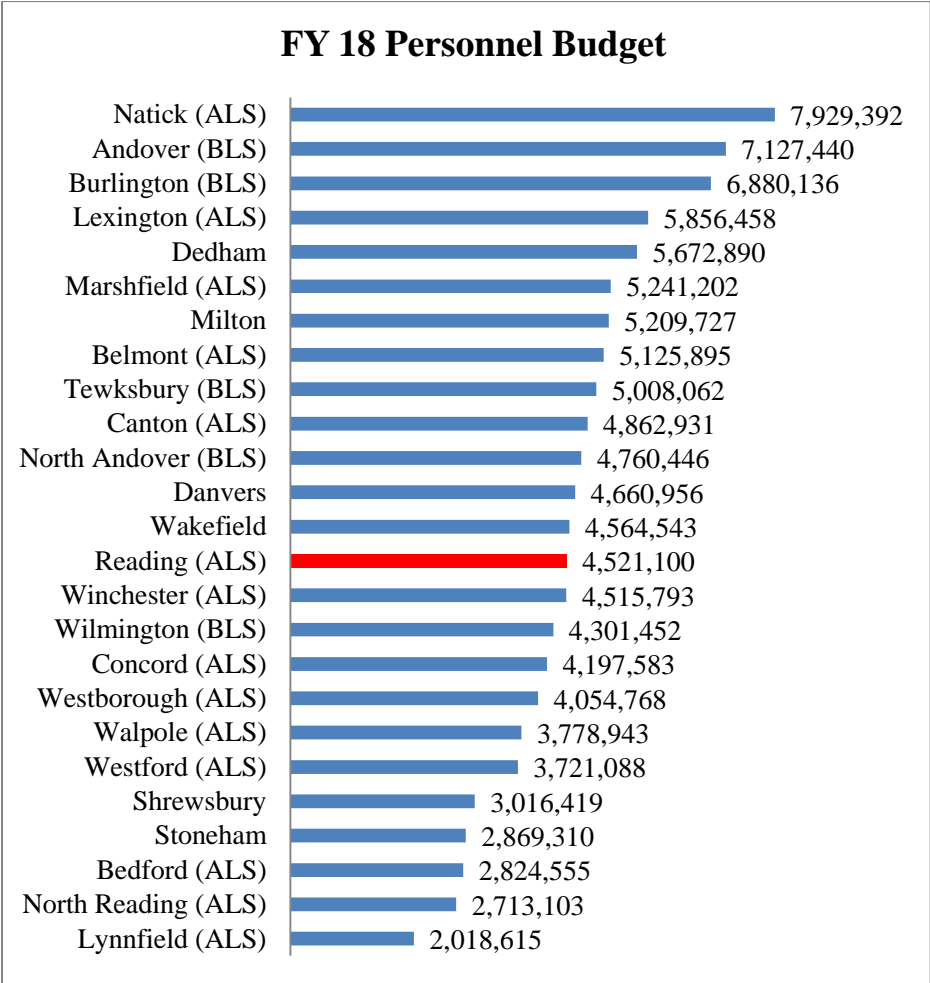


Figure 7

Overtime expenditures spent by each of the comparable communities for the last four years was examined and illustrated in *figure 8*. Reading ranks below the average community expenditure in each of the last four years.

Community	Population	FY 14	FY 15	FY 16	FY 17
Andover (BLS)	33,204	1,073,598	1,142,631	933,940	1,108,032
Bedford (ALS)	14,230	326,099	353,258	314,029	409,495
Belmont (ALS)	25,000	520,391	639,332	496,811	685,576
Burlington (BLS)	25,307	637,668	739,496	637,361	804,255
Canton (ALS)	22,000	688,000	672,000	720,000	720,550
Concord (ALS)	15,987	547,896	601,305	668,643	600,448
Danvers	26,493	549,290	605,641	524,051	724,670
Dedham	24,729	695,650	523,824	494,461	545,223
Lexington (ALS)	32,000	688,459	885,259	990,419	986,000
Lynnfield (ALS)	12,571	273,368	308,836	279,015	321,677
Marshfield (ALS)	25,324	623,388	780,088	770,111	806,167
Milton	27,000	390,996	421,137	439,364	458,904
Natick (ALS)	33,006	766,424	763,850	728,094	823,807
North Andover (BLS)	31,052	647,685	650,046	621,121	631,830
North Reading (ALS)	15,522	747,491	844,198	813,685	923,168
Reading (ALS)	26,356	503,381	574,041	530,518	617,708
Shrewsbury	37,000	424,873	467,019	477,234	539,961
Stoneham	21,437	271,948	299,000	326,000	332,500
Tewksbury (BLS)	28,961	711,678	672,910	466,074	630,070
Wakefield	25,171	402,268	319,866	411,926	510,290
Walpole (ALS)	24,998	459,758	529,175	557,729	540,216
Westborough (ALS)	18,990	410,742	406,850	332,792	311,298
Westford (ALS)	21,951	455,503	421,122	452,635	498,230
Wilmington (BLS)	23,782	961,226	938,099	714,333	715,000
Winchester (ALS)	21,374	454,783	536,460	395,633	555,426
Average	24,538	569,303	603,818	563,839	632,020

Figure 8

The data average overtime expenditures for the last four years for departments that provide emergency medical care at the ALS level is illustrated below in *Figure 9*. Paramedics require additional training hours to recertify their license and this results in additional costs for ALS departments. Departments that provide Basic Life Support service or that do not provide EMS services at all would incur less cost. Of the 14 communities that provide ALS level of care Reading ranks 8th in overtime expenditures. This is below the 14 community average of \$582,702. Some communities do use the overtime funds to staff a second ambulance and some communities use an enterprise account for ambulance associated overtime expenditures.

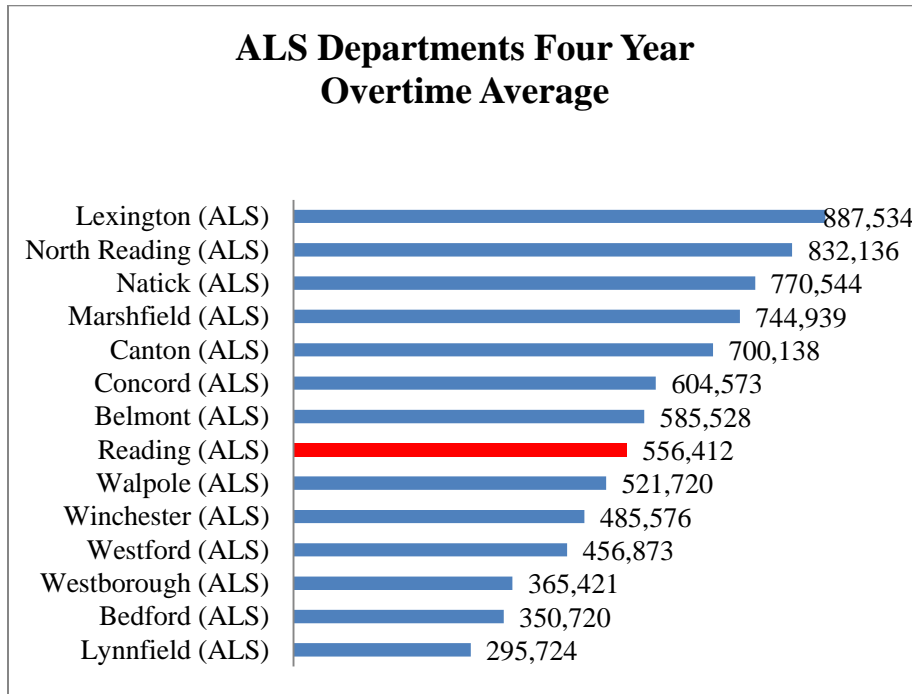


Figure 9

Use of EMS Revenue to Offset Costs:

Some communities use ambulance revenues in the form of an enterprise account to offset some of the costs of providing the service. Below in *Figure 10* of the 19 communities that provide emergency medical services, 10 communities use some form of an enterprise account and 8 communities deposit all ambulance revenues back into the general fund.

Community	Enterprise Account
Andover (BLS)	Enterprise Account
Bedford (ALS)	Enterprise Account
Canton (ALS)	Enterprise Account
Lynnfield (ALS)	Enterprise Account
North Reading (ALS)	Enterprise Account
Westborough (ALS)	Enterprise Account
Westford (ALS)	Enterprise Account
Wilmington (BLS)	Enterprise Account
Walpole (ALS)	Enterprise Account
Belmont (ALS)	Enterprise Account (Partial)
Burlington (BLS)	General Fund
Concord (ALS)	General Fund
Lexington (ALS)	General Fund
Natick (ALS)	General Fund
North Andover (BLS)	General Fund
Reading (ALS)	General Fund
Tewksbury (BLS)	General Fund
Winchester (ALS)	General Fund
Marshfield (ALS)	No Data

Figure 10

Review of the 1987 Study of the Reading Fire Department:

A review of the 1987 report titled a Survey of the Reading Fire Department, prepared by George Paul Fire Safety Consultants Inc. was conducted. This report addressed the siting of the Main Street Fire Station, staffing, training, fire apparatus and equipment. This report was completed 30 years ago and a significant portion is outdated and no longer relevant. The staffing comments however are relevant. When this study was completed our staffing consisted of: 1 Chief, 1 Deputy Chief, 3 Captains, 4 Lieutenants, 37 Firefighters, 1 full time Mechanic, 1 Secretary and

four Dispatchers. (Paul, 1987) Since this report was issued the Dispatch function has been centralized at the Police Department and the maintenance of apparatus has been centralized at the Department of Public works.

The report made a recommendation to add an executive level assistant to the Fire Chief and to increase the Department by four additional Firefighters. (Paul, 1987) The Department no longer has a Deputy Chief, but the creation of the Assistant Fire Chief's position has filled the executive level assistant need.

The report included data on call volume and Illustrated in *figure 11* is the data on emergency responses provided in the report for the years 1986 and 1987 compared to our data for 2016. The population for Reading listed in the report was approximately 24,000. (Paul, 1987) Since 1987 we have seen our population grow to 26,356 and our emergency responses have increased significantly.

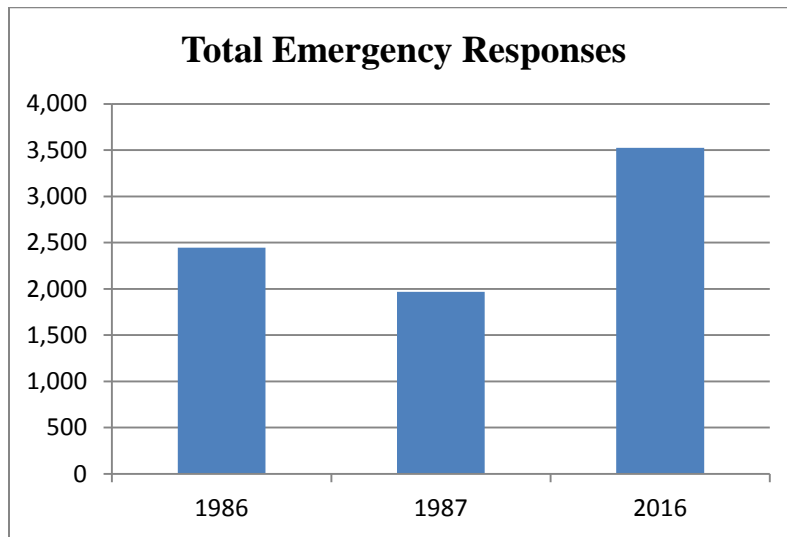


Figure 11

Below in *figure 12* is a graph that illustrates the trend of lower staffing and increasing emergency responses. The Reading Fire Department has had much higher staffing levels in previous years. For example in the years of 1972 through 1981 the Department staffing was in the 50's. The Department was at peak staffing at 56 personnel in the years 1973 through 1975.

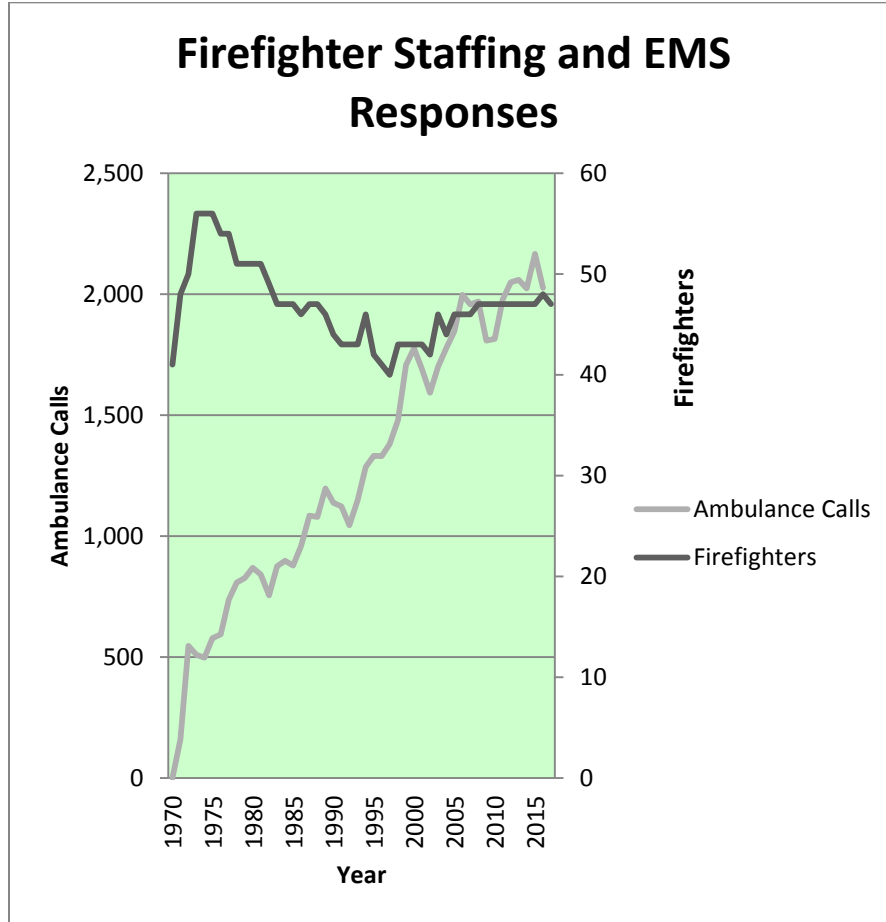


Figure 12

Recommendation:

Although we do not know precisely how Reading will grow in the future or what the actual mix of future development will be, it is clear as a community we are growing and will continue to grow into the near future. The data also predicts the percentage of our population that are seniors will also increase. It is likely we will see more multi-floor, multi-unit wood framed buildings and multi-floor, multi-unit wood framed mixed use buildings. These factors will result in an increase of emergency medical and fire responses for the Reading Fire Department.

As emergency medical responses continue to increase, the two Firefighters assigned to the ambulance will spend more time performing patient care and transport duties and they will be available less for fires or other emergencies.

Based upon the factors outlined above it is clear by the data there is a need for additional staffing. Therefore we recommend total of four additional Firefighters be added to the Department. This will increase each group by one Firefighter and will also have the added benefit of a reduction in overtime expenditures.

Bibliography

MAPC. (December 2015). *Reading Economic Development Action Plan, 2016-2012*. Council, Metropolitan Area Planning.

Paul, G. (1987). *Survey of Reading Fire Department*.