

# **Town of Andover, Massachusetts**



## **Fire Services Organizational Analysis**

**October 2006**

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## **EXECUTIVE SUMMARY**

The Andover Fire Department has served the community well because of the dedication of its personnel. However, as demonstrated during our visits, by reputation, and well documented through history, the Department has a hardened Union environment typical of eastern Massachusetts' communities. Through a long history of events, labor/management relations have fluctuated, but could best be described as strained. The Department has a strong labor contract that has evolved such that past practices and union involvement, rather than elected and appointed leaders, seem to establish the primary oversight and direction for the Fire Department. The erosion of management rights and prerogatives could severely impede thoughtful and comprehensive responses to existing challenges and future needs. This situation is exacerbated because the Deputy Chiefs are also members of and represented by the Firefighters' Union. This situation, while not unusual in the fire service, creates obvious and difficult management challenges, particularly in a situation where the Fire Chief is the only firefighter in the Department who is not a member of the Union.

On the other hand, the Department has been fortunate to have enjoyed significant support from the Town. Examples of this support are evidenced by exceptional facilities, above average equipment in terms of quantity, quality and age, and excellent equipment maintenance. Although we heard some discussion relative to a need for a fourth station, it is not clear that a fourth station is needed and suggest that through relocation of the existing Ballardvale Station and renovation of the West Fire Station, overall response times throughout the Town could well be improved.

We have made a number of individual recommendations for the Town and the next Fire Chief to consider towards improving fire and EMS delivery to the citizens of Andover.

## **PURPOSE, SCOPE AND METHODOLOGY**

The purpose of this study was to provide an overview and an external perspective regarding the operations, practices, and culture of the Andover Fire Department. Hopefully, the issues addressed in more depth will be helpful in focusing discussions during the selection process for the next Chief of the Department.

During this effort we have particularly appreciated the assistance of Chief Murnane and Executive Secretary Elizabeth Kochakian for developing extensive background data, for

their invaluable historic perspectives, and for their valiant (if not always successful) efforts to schedule key appointments.

As Chief Murnane prepares to retire, we would be remiss if we did not recognize his passion for, contribution to, and love of the Andover Fire Department.

The Municipal Resources Team was retained to review data and observe operations in order to provide an informed and objective perspective regarding key aspects of the Department, and to develop a summary report and “challenge statement” that will be useful in interviewing and evaluating Fire Chief candidates, as well as assisting the successful candidate in charting a future course for the Department.

### **OUR OBJECTIVES**

- To help municipalities and agencies obtain maximum value for limited tax dollars;
- To raise public awareness of the value and professionalism of their municipal resources; and
- To help local leaders develop and execute plans that best meet their community’s needs, given the resources available.

MRI has been in the municipal consulting business for more than a decade. The list of satisfied clients speaks for itself. (See Appendix V for itemized Fire Department assessments carried out by MRI.)

Our objective is to also provide Andover with a series of recommendations and alternatives that form a blueprint for the future success of the Andover Fire Department and ensure a high quality of service and value for the community.

### **SCOPE**

1. Assess and evaluate the Department’s current management/administration, training, and fire prevention functions
2. Identify existing strengths, weaknesses, efficiencies, and inefficiencies in these areas.
3. Present potential options, recommendations, and implementation strategies for structural and procedural improvements in these areas

## **METHODOLOGY**

There were eight major work elements involved in this review:

1. A review of compiled data regarding key operational aspects of the Department.
2. A thorough tour of the community to gain a sense of the physical environment, the primary fire and life safety risk exposures, and the location of population and commercial centers in relationship to facilities.
3. Interviews with key individuals including the Board of Selectmen, Town Manager, Assistant Town Manager, Personnel Director, Fire Chief, Deputies, Dispatchers, Fire Prevention, Police Chief, and Police Commander, as well as occasional informal interviews with firefighters.
4. A review of facilities and equipment.
5. Informal conversations with firefighters while on station tours. (The Firefighters Union provided a letter, but was unwilling or unable to meet as a Union leadership team with the MRI team.)
6. An emergency response ride-along.
7. A review of response time statistics.
8. A summary comparative analysis using National norms and practices of other Massachusetts communities.

## **BACKGROUND AND DEMOGRAPHICS**

The Town of Andover, located in Essex County, Massachusetts, was incorporated in 1646. Andover has a historic past, with a community heritage dating back to the Colonial era. While the Town is home to many high-tech and other large corporations, it also offers a rural dynamic that has attracted nearly 10,000 additional residents since 1970. Andover has a total area of 32 square miles, and is located approximately 20 miles north of the City of Boston, and 10 miles east of Lowell. State Routes 28, 133, and 125 traverse through Andover, as do Interstates 495 and 93. According to the Massachusetts Highway Department, traffic counts in 2005 showed 24,500 daily trips along Route 28 south of I-495, 15,047 trips on Route 125 south of Route 28, 18,500 trips on Route 133 east of I-93, 109,900 trips on I-495 south of I-93, and 134,462 on I-93 north of Route 125. This traffic volume clearly demonstrates the added life-safety responsibility Andover's public safety personnel must address daily. Other modes of transportation in Andover include Commuter Rail service provided by the MBTA.

Andover is bordered by seven communities: Tewksbury and Dracut to the west, Methuen and Lawrence to the north, North Andover to the east, and North Reading and Wilmington to the south. The make-up of these communities ranges from a largely rural flavor in North Reading to a significant urban environment in Lawrence.

One additional dynamic within Andover is the presence of two rivers of significance, the Shawsheen and the much larger Merrimack. The concern of river flooding along these rivers is a very real threat as evidenced by the major flooding event that occurred in the Spring of 2006.

**DEMOGRAPHICS**

According to U.S. Census Bureau estimates, Andover ranked 46<sup>th</sup> out of Massachusetts’ cities & towns in 2005 with a population of 33,042. As the chart below indicates, Andover’s growth in the 1970s and 1980s far outpaced the overall County. That trend reversed itself beginning in the 90s.

Population Growth

	<u>Andover</u>	<u>%+/-</u>	<u>Essex</u> <u>County</u>	<u>%+/-</u>
1970	23,695		637,887	
1980	26,370	11.29%	633,632	-0.67%
1990	29,151	10.55%	670,080	5.75%
2000	31,247	7.19%	738,301	10.18%
2005 Est.	33,042	5.74%	783,262	6.09%
TOTAL 35-yr CHANGE	+9,347	39.45%	+145,375	22.79%

Source: US Department of Commerce, Bureau of Census, 2005 Internet Site

In terms of population comparison, the following chart shows similar sized communities with 2005 population estimates comparable to Andover:

RANK	TOWN	2005 EST.
41	Amherst	34,047
42	Chelmsford	33,759
43	Braintree	33,681
44	Falmouth	33,644
45	Shrewsbury	33,174
<b>46</b>	<b>Andover</b>	<b>33,042</b>
47	Chelsea	32,518
48	Watertown	32,303
49	Natick	31,943
50	Dartmouth	31,389
51	Franklin	30,893

According to the 2000 US Census, the population age distribution shows that the largest segment of Andover's population is between 25 and 54:

#### Population Age Distribution

Age	Number	%
Under 5	2,052	6.6%
5-19	7,513	24.1%
20-24	885	2.8%
25-44	8,603	27.5%
45-64	8,363	26.8%
65 and over	3,831	12.2%

*Source: US Department of Commerce, Bureau of Census, 2000*

The age distribution of the Town, as indicated above, shows a Town in which 61% of the population in 2000 was under the age of 45. In fact, only 12.2% of the population is over 65 years of age, while school age children (5-19) account for 24.1% of Andover's total population.

Andover's median household income in 1999 was \$87,683. Compared to Essex County's which was \$51,576 or Massachusetts's at \$50,502, it is considerably higher in both cases. Also, the economic characteristics of the Town measured in terms of families below the poverty line, shows a rate of 2.5% compared with the County at 6.6%, the State at 6.7%, and the USA at 9.2%.

## **ECONOMIC DEVELOPMENT**

Calendar year 2005 data reported by the US Census indicates 1,075 establishments employing 34,528 individuals in the community. In comparison, neighboring Wilmington totaled 18,183 employees in 815 establishments.

Employers (Establishments) & Employees

<u>Year</u>	<u>Employers</u>	<u>Employees</u>
2001	1,075	34,528
2002	1,094	32,846
2003	1,108	31,769
2004	1,148	31,600
2005	1,104	31,907

Job stability has fluctuated during the last five-year period, with a noticeable drop occurring in 2001 and 2002, a time that coincided with the most recent economic downturn in the Commonwealth. Yet the creation of 907 new jobs from 2004 to 2005 may be a sign of positive things to come. At the same time, however, it is important to note that increases in population and workforce development within any community often results in increased service demands on all facets of Town services, including public safety departments.

On the labor front in Andover, the unemployment rate among Andover residents, as reported by the Commonwealth's Workforce Development internet site, has dropped steadily since 2002, down from 5.0% in CY02 to 4.1% in 2005.

## **HOUSING**

According to the Massachusetts Department of Revenue, the average property value increased by 7.53% from FY05 to FY06. The FY06 average value in Andover was \$561,362. In terms of neighboring communities, this increase was fairly consistent with others and lower than the actual State average. Wilmington's average value increased by 8.05%, Tewksbury's by 8.30%, and North Andover's by 7.56%. The average increase statewide was 9.26%. In FY06, Andover's tax rate was \$11.40 per thousand, with an average property tax bill of \$6,400, ranking the Town 29<sup>th</sup> of the 338 communities reporting.

## **GOVERNMENT**

Like many Massachusetts communities, the Town of Andover has a Board of Selectmen/Open Town Meeting form of government like many Massachusetts communities. The day-to-day operations of the Town are the responsibility of the Town Manager.



## **EDUCATION**

Andover's public school system is managed by an elected five-member school committee and appointed Superintendent of Schools. The district serves students from preschool through grade twelve, and is made up of ten schools, with six elementary schools, three middle schools, and one high school. School enrollment figures provided by the Massachusetts Department of Education show a FY07 foundation enrollment in the district of 5,880 students, an increase of 1.5% from FY06. Andover is also a member of the Greater Lawrence Regional Vocational Technical High School, located in Andover, and according to Department of Education, has 19 students enrolled there for FY07.

## **MANAGEMENT/ADMINISTRATION**

The administration of the Andover Fire Department has evolved over time in a civil service environment promoting candidates from within the Department. Management rights in a collective bargaining atmosphere have been eroded throughout the years so that critical areas of budgetary control (overtime, training, staffing) either are spelled out in the bargaining agreement or are assumed to be a certain way through the past practices of the Department.

The Fire Chief is the only non-Union employee in the uniformed ranks. The four Deputy Chiefs are members of the same Union as supervisors (Lieutenants) and firefighters. A reduction in Fire Department strength several years ago eliminated the administrative Deputy Chief, who also coordinated all Fire Prevention program efforts.

From a Fire Department tactics (emergency management) vantage point, the Department can handle very well the "routine" fires and rescues that occur on a daily basis. The Department is hamstrung, however, in the collective bargaining arena, due to years of pro-active labor pressure resulting in contracts which limit management's ability to control spending with respect to overtime, employee benefits, time off, productivity, etc.

The Deputy Fire Chiefs need to function more as managers and not as mere agents of the labor Union. Arranging a meeting with the four (4) Deputies as a group (considering them as a senior management team) with the MRI team was nearly impossible. Eventually a meeting was arranged with three (3) of the four (4), who all requested overtime pay for the time spent. This is not the attitude one would expect from the senior operations managers of the agency (Appendix O).

The new Fire Chief needs to be a strong, seasoned leader who is capable of implementing positive change gradually while working with labor in a strong Union environment.

The position of a non-Union Assistant Fire Chief needs to be created outside of the confines of Civil Service, with a competitive compensation package. Creating a strong management team is essential to support a new Fire Chief who will be expected to implement positive change, as well as to bolster the Fire Prevention Program which badly needs additional resources.

Establishing the position of Training Officer is also important in order to ensure that the administrative team has the resources to provide the full range of administrative functions for the Department.

### **THE TOP FIVE CHALLENGES FOR THE NEXT CHIEF**

1. Working collaboratively with Union leadership to create constructive change in a strong Union environment.
2. Developing a consistent, expanded, and productive structure for daily activities of all members of the Department (Appendix U).
3. Developing and gaining approval of the positions of Assistant Chief and Training Officer in order to provide much needed administrative support (Appendices B, C, E, & F).
4. Creating stronger community outreach and operational efficiency through significantly increased shift involvement in fire prevention, fire inspection, and education (Appendices U and K).
5. Evaluating Emergency Medical Services, and in particular, the option of providing Advanced Life Support (ALS).

### **OUR TOP FIVE RECOMMENDATIONS FOR THE NEXT CHIEF**

1. Work within the Union contract to create a reasonable pace of proactive change to adapt to opportunities and service delivery methodologies that exist within the Massachusetts Fire Service and are needed to meet future challenges.
2. Develop a comprehensive and consistent training program and create the position of daytime Training Captain (Appendix D).

3. Develop a strategy for prioritizing and implementing the actions needed to move the Department towards total compliance with the OSHA Two In/Two Out Standard, as well as assuring maximum use of the existing capability. This will require hiring four firefighters as soon as possible to add one firefighter per shift at the Ballardvale Station. The West Station eventually will need full staffing of an ambulance and a pumper in this growing area of the Town to comply with OSHA Two In/Two Out and to insure that there are sufficient-arriving forces to begin firefighting operations in this hotel/residential/commercial district. This will require the hiring of four additional firefighters later in the decade. Even though Massachusetts is not an OSHA state, lawsuits across the country are being decided with the OSHA and NFPA standards as the maxim relied upon for meeting minimum guidelines of staffing and assignment (Appendices D, G, and Q).
4. When the additional firefighter is on staff at the Ballardvale Station, deploy the third ambulance to Ballardvale and staff it with two members of the engine company on a first come/first serve call basis. In partnership with the Town, the Union, and the area hospitals, evaluate the potential of providing Advanced Life Support (ALS) services at the Intermediate or Paramedic level.
5. Enhance community outreach by immediately developing increased shift involvement in preplanning, fire prevention inspections, and public education efforts.

## **MANAGEMENT/ADMINISTRATION RECOMMENDATIONS**

- 1-1** Recommendation: The Town needs to bargain back core management rights to control overtime expenses and be able to assign staff to increase productivity. Specifically, controlling the number of personnel allowed time off simultaneously will assist with controlling spiraling overtime costs.
- 1-2** Recommendation: The Town must select a qualified successor Fire Chief who has the ability to partner with the Union and the Town administration to forge partnerships to move the Fire Department into the 21<sup>st</sup> century.
- 1-3** Recommendation: The Town must add the non-Union position of "Assistant Fire Chief" to be an integral part of the management team. This position functionally will supervise the Fire Prevention program, but also will assist the Fire Chief in overall Department administration and be the clear #2 person in the Fire Department (Appendices B, C, and K).
- 1-4** Recommendation: The four Deputy Fire Chiefs must be integrated into the overall management team. They can be assigned major program areas (maintenance, pre-planning, EMS, research, and development) besides the

management of their work shift. Their focus needs to be tailored to the overall good and welfare of the Fire Department in total and the citizens of Andover; not protecting the *status quo*.

- 1-5** Recommendation: A “daily schedule” of activities needs to be created and adhered to for the improvement of productivity, especially if the Town is going to move towards satisfying OSHA staffing standards (Appendices G and U).
- 1-6** Recommendation: OSHA's “Two In/Two Out” rule should be complied with. To do so, four (4) new positions should be added in FY08 and assigned to the Ballardvale station (Appendix G).
- 1-7** Recommendation: Continue to utilize NFPA 1710 as the on-scene resource management tool to attain a 12 person assignment, 90% of the time, in 8 minutes. The new Chief should evaluate and report compliance relative to NFPA 1710 on an annual basis (Appendix G).
- 1-8** Recommendation: Formalize the “training” function of the Department by adding a Training Captain to coordinate all fire, rescue, EMS, physical fitness, and fire safety education training Department-wide (Appendix F).
- 1-9** Recommendation: Institute a structured physical fitness and back safety program through the Training Officer. This will reduce the injured on duty statistics we observed, saving wear and tear on firefighters and the overtime budget (Appendix M).
- 1-10** Recommendation: After four staff is assigned around the clock in Ballardvale, assign an ambulance to that Station. Currently an ambulance must come from Headquarters or West Station into this District, and sometimes, depending upon the nature of the emergency, the pumper is dispatched along with it. Immediate dispatch of EMS from Ballardvale will improve service delivery to citizens and improve the efficiency of personnel assigned.
- 1-11** Recommendation: Institute Incident Command System (ICS) practices on all Fire Department operations.
- 1-12** Recommendation: Evaluate the current apparatus replacement program to ascertain whether the acquisition of another quint in FY12 to replace the aerial tower and the 1988 pumper makes sense operationally for the West Station.
- 1-13** Recommendation: Evaluate whether staffing the ladder function in Headquarters utilizing the ambulance crew is wise considering the deployment activities of the ambulances. The importance of fully staffing the aerial out of Headquarters is critical for search, rescue, and ventilation operations, especially if one or two ambulances are committed to EMS emergencies and a working fire occurs.

- 1-14** Recommendation: At some point (perhaps FY11 or FY12), four (4) more firefighters, one (1) per shift, should be added to the West Station so that a complete engine company and a two (2) person ambulance can be staffed simultaneously. Growth here will keep the ambulance engaged more often, leaving the current three (3) person engine company to handle firefighting duties in this high density hotel and commercial district.
- 1-15** Recommendation: Evaluate the possibility of moving EMS from Basic Life Support to Advanced Life Support. Create a partnership from administration, labor, citizens, and the hospital to investigate the cost/benefits to the Town and ascertain the long-term reliability of hospital-based ALS (many of these services are shutting down).
- 1-16** Recommendation: Currently the bargaining agreement allows up to fourteen (14) personnel per shift to be off at one time. This creates overtime on a grand scale and needs to be negotiated downwards.
- 1-17** Recommendation: A system for quick re-call of personnel in emergency situations needs to be created (radio or alpha-numeric pagers).

## **COMPARISON TO MASSACHUSETTS AND NATIONAL STANDARDS**

Andover is fairly close to the mean in terms of most operational aspects. As an example, in terms of shift staffing, the Massachusetts average is 2.25 firefighters per 1,000 residents. Using this formula, Andover falls exactly on the mean when compared to staffing for comparable Massachusetts communities with a population range of 28,000 to 40,000, and is more than twice the Northeast average for similar-sized communities (based upon NFPA figures for all six New England states which include many combination career/volunteer Fire Departments in Connecticut, Maine, New Hampshire, and Vermont).

Other pertinent comparative analysis observations include:

- The National average of 3 fire stations for a community of Andover's size is consistent with current levels and for Massachusetts peer communities.
- The National average for the number of pumpers is 4; exactly the number Andover has.
- Most Massachusetts Fire Departments of Andover's size have an administrative senior officer second in command to the Fire Chief, pointing out the need for an Assistant Fire Chief's position (Appendices B and C).

- Approximately half the Massachusetts Fire Departments have full-time training officers. The others assign that function to a line Deputy Chief or shift supervisor (Captain or Lieutenant) (Appendix F).
- The majority of Massachusetts Fire Departments have a line supervisor (Captain or Lieutenant) oversee EMS. The more sophisticated a program is (ALS and/or heavy community CPR/defibrillator programs), the more likely one is to find a full-time EMS Director as well.
- The number of fire and EMS emergencies Andover encounters annually is comparable to other Massachusetts peer communities.
- Approximately 65% of peer Massachusetts Fire Departments offer ALS EMS service.

The data detailed above was developed by a comparative analysis, surveying Massachusetts Fire Departments in communities of 28,000 – 40,000 persons, including Lexington, Gloucester, Stoughton, Amherst and 20 others.

Andover provided us with a list of six peer communities. These communities include Acton, Arlington, Belmont, Billerica, Lexington, and North Andover. A twenty-six (26) point analysis comparing Andover to its peer communities is integrated and shown in Appendix A.

## **FACILITIES AND EQUIPMENT**

The public safety complex is one of the best that we have seen and the security measures incorporated into this facility are excellent. The apparatus fleet was found to be above average in terms of total units, type of equipment, age, and maintenance. Assuming that a new pumper is being procured for the Department in FY07 to replace the aging 1986 unit, future consideration for the next capital purchase should be given to acquiring a quint for the West Station by replacing the 1988 engine and the 1999 aerial platform together, leaving the 1996 pumper in reserve. The apparatus program currently in place reflects obvious support and capital investment on the part of the Town.

A concern exists relative to minimizing response time given the current deployment pattern. As mentioned previously, we do not believe that a fourth station is needed if the Ballardvale Station is relocated and the West Station is renovated. This recommendation is made considering the response patterns and future growth of the community. Fleshing out these options (or perhaps developing better options to achieve the same goals) should be a high priority activity for the new Chief.

- 2-1** Recommendation: The Ballardvale Station needs to be replaced minimally with a modern three bay facility (for future growth), diesel exhaust removal system, and a physical fitness room.
- 2-2** Recommendation: The West Station should be renovated for modernization, a diesel exhaust removal system, a physical fitness room, and to reduce energy consumption.
- 2-3** Recommendation: We do not recommend a fourth station at this time. The new Ballardvale Station should be located to try, as much as possible, to attain a maximum six (6) minute response time to that District.
- 2-4** Recommendation: Replacement of capital equipment has been good. An evaluation is needed to determine if the next piece of fire equipment should be a quint assigned to the West Station, trading in the 1988 pumper and the 1999 aerial ladder. The 1996 pumper then would be held in reserve status. With the future growth in West Andover, having an aerial/pumper combination immediately available for the hotels and commercial structures lends operational flexibility.
- 2-5** Recommendation: The oldest ambulance should not be traded when the next new ambulance is purchased so a spare unit can be retained when the third ambulance is assigned to Ballardvale.

## **TRAINING**

Training immediately surfaced as an area of concern, as well it should be. An aggressive, consistent, and well-documented training program is essential to maximize firefighter safety and reduce potential liability for the Town. We heard that despite the efforts of personnel assigned to training, no substantive and comprehensive internal program exists other than to send new firefighters to the Massachusetts Firefighting Academy Recruit Program. As it stands now, the responsibility for developing the training program is assigned to a Deputy Chief and delivery of the training is the responsibility of all the duty Deputy Chiefs. This training delivery program, by its nature, has produced inconsistent results and should be a continuing concern to both the firefighters and management until improved.

Impressions taken from interviews suggest that training was minimal on three shifts and the perception is that it is excessive on the remaining shift. This inconsistency affects the ability and effectiveness of the Department. Therefore, a coordinated training program based upon NFPA and Massachusetts Firefighting Academy standards, delivered and well-documented with records kept on each employee, is highly recommended. This training should include firefighting, rescue, EMS, physical fitness, fire prevention inspections, and fire safety education delivery programs.

An Administrative Captain's position should be developed to take full responsibility for developing and managing this enhanced training program on a full-time, day shift, with provisions for some night and weekend work.

- 3-1** Recommendation: Design and implement a complete Department training program to include an annual review of all NFPA Firefighter I/II skills, including Incident Command and OSHA HAZWOPER (Appendix D).
- 3-2** Recommendation: All staff should receive other annual training as required by the Town of Andover (Sexual Harassment, Right to Know, etc).
- 3-3** Recommendation: Design and implement an officer's training program including tactics and strategy sessions for operations and supervisory skill proficiency. Attendance at the Massachusetts Firefighting Academy for such coursework should be encouraged.
- 3-4** Recommendation: Design and implement an EMS training program that includes the bi-annual State refresher course, annual CPR and defibrillator certification, First Responder, and CEUs from Department instructors and guest lecturers.
- 3-5** Recommendation: Add a full-time Captain to manage and oversee a comprehensive training program. This position would be required to vary his schedule to present or supervise training on all shifts, including some nights and possibly weekends (Appendix F).
- 3-6** Recommendation: Continue to send new firefighters to the Massachusetts Firefighting Academy Recruit Program.
- 3-7** Recommendation: Daily physical fitness training must become part of a comprehensive training program to improve firefighter strength, durability, and health and to reduce overtime for injured-on-duty claims (Appendix M).
- 3-8** Recommendation: Conducting fire prevention inspections for line personnel will be required if all firefighters are expected to perform fire prevention duties on shift. The Fire Prevention staff, in conjunction with the Training Officer, can provide this training.
- 3-9** Recommendation: Fire safety education in the schools (SAFE) and for the elderly may be conducted from time-to-time by line personnel. We recommend that only firefighters who wish to conduct fire safety education be trained for this duty, as it is not for everyone and it is too important not to do it well (Appendix K).
- 3-10** Recommendation: Encourage members to attend specialized training at the Massachusetts Firefighting Academy, other institutions, and courses by certified



instructors in subject matter such as technical rescue, hazardous materials technician, confined space, instructor methodology, etc.

- 3-11** Recommendation: Officers seeking promotion to chief officer or fire prevention specialization should be encouraged to attend the National Fire Academy in Maryland where high level coursework prepares one for the demands and rigors of these positions.
- 3-12** Recommendation: All training needs to be recorded on individual member's training records annually.
- 3-13** Recommendation: The Deputy Chiefs must enforce training program requirements for everyone.

### **DATA MANAGEMENT AND PLANNING**

Response time data analysis was compromised by the inability of the Dispatch Center's computerized record-keeping to provide a specific breakdown of situational responses. Furthermore, the Department provided fire prevention activities in the subset of emergency responses which skewed the zero to 1 minute response times heavily in favor, complicating any reasonable data analysis.

Analysis of the existing data reveals that over 17% of all responses exceed nine minutes, but the inclusion of non-emergency incidents here makes the 17% number suspect.

Regardless, the NFPA 1710 (Appendix G) standard requires Fire Departments to assemble a minimum of twelve (12) personnel on fire/rescue incident scenes, in 8 minutes, 90% of the time.

- 4-1** Recommendation: The new Chief should improve the Department's records management and reporting capabilities.
- 4-2** Recommendation: An integrated fire prevention, permitting, and pre-planning module should be added to facilitate tracking fire prevention activities and sharing data during emergency responses.
- 4-3** Recommendation: The system should segregate or separate the fire and EMS response data, and eliminate the inclusion here of fire prevention statistics.
- 4-4** Recommendation: The Chief should provide a monthly activity report to the Town Manager and Department members.

- 4-5 Recommendation: The Department needs to provide for the development of a credible data set that can be used as a foundation for strategic planning efforts, as well as community-based master planning.
- 4-5 Recommendation: Within one (1) year the new Chief should develop a draft strategic plan (Appendix Q).
- 4-6 Recommendation: Within five (5) years, the Town Manager should appoint a community-based Fire and EMS Master Planning Committee.

## **FIRE PREVENTION**

Massachusetts General Laws Chapter 148 and the State Fire Prevention Regulations 527 CMR (Appendix G) dictate the frequency and type of inspections that a municipality needs to undertake. The law requires quarterly inspections of health care facilities, hotels/motels, and theaters. Furthermore, annual inspections of multi-family residences, commercial buildings, and hazardous operations are called for in the State fire prevention regulations.

Massachusetts General Laws also require Fire Departments to approve smoke detector systems and carbon monoxide protection in all residences constructed and sold. The State also calls for Fire Departments to review and approve all fire protection systems installed in any building in the Commonwealth.

Andover is not in compliance with all these laws and regulations, as not enough resources are committed to this functional area, especially with the reduction of two personnel several years ago.

Line firefighters do perform some inspection services; however, more of this work should be added to the daily shift activities. Firefighters need to be involved in fire prevention inspections so they become familiar with the occupancies they may have to fight fires or encounter other emergencies within. Not only should they visit new buildings under construction or old ones under renovation, they should perform required MGL Chapter 148 inspections in schools, health care facilities, and theaters. If the Fire Prevention function is to continue to be understaffed, line firefighting companies also should be performing Chapter 148, Section 26E, smoke detector and carbon monoxide detector inspections for sale of properties.

We were informed that the turn-around time on plans review and required inspections often exceed forty (40) days in some cases, or approximately four (4) times what is allowed by the State Building Code. More resources must be dedicated to this function. The loss of the Administrative Deputy Chief and a Fire Inspector in recent budgets, without corresponding increases in activity by the shift personnel, has had a

major impact on this function of the Department. It is critical that this area be addressed first as the rebuilding of resources for the Department is contemplated.

The addition of Mobile Data Terminals in Department vehicles that can be programmed with building and utility information would go a long way towards improving the capability of the Department to manage information for inspections and emergency responses in a more effective and efficient manner (Appendix S).

Locating Fire Prevention in Town Hall instead of the Public Safety Complex was initially required because of space challenges while the new station was being constructed. However, this arrangement seems to function well in association with the other inspection services of the Town and the team approach to plan review works well for the citizens. It is imperative though, that an Assistant Fire Chief assigned to Fire Prevention spend ample time at the Public Safety Complex for administrative duties there as well.

- 5-1** Recommendation: Adding a non-Union Assistant Fire Chief to oversee Fire Prevention is important, but as this position will also be the #2 person in the Fire Department, he will need an office both in Town Hall and at Fire Headquarters (Appendix B).
- 5-2** Recommendation: The turn-around on plans submitted to the Fire Department should be reduced to the code-required ten (10) business days, unless the Building Commissioner is requested (in writing) to extend the time (for a specific reason).
- 5-3** Recommendation: MGL Chapter 148 required inspections and fire drills in Health Care facilities, theaters, and hotels must be performed quarterly.
- 5-4** Recommendation: 527 CMR 25 annual inspections in multi-family, commercial and hazardous materials operations probably will need to be conducted by the line companies. Such a program needs to be rotated among the four work groups so that all firefighters see all occupancies in the Town over a finite period of years (Appendices G and R).
- 5-5** Recommendation: MGL Chapter 148, Section 26, series inspections of smoke detectors and carbon monoxide detectors in residences upon sale probably will need to be done by line companies.
- 5-6** Recommendation: Fire Prevention personnel need to track new and renovated building projects for code compliance and perform fire protection system acceptance testing after the engineers/architects of record submit affidavits attesting to code-conformance.
- 5-7** Recommendation: Assist the new Department Training Officer with developing and delivering a fire inspection training program for line firefighters (Appendix F).

- 5-8** Recommendation: Continue the Team approach to building safety with the Building Department, health, and zoning staff. It is one-stop shopping for the public and makes plan review much more efficient for the Town.
- 5-9** Recommendation: Add Mobile Data Terminals to all Fire Department vehicles and link them to files to provide building plans and utility information, including fire hydrant locations, hazardous materials locations, infirmed persons locations, and fire prevention inspection data. This will be important for emergencies and for routine complaint and inspection duties.
- 5-10** Recommendation: A comprehensive fire safety education program needs to be developed involving Fire Prevention staff. SAFE (Student Awareness of Fire Education) in the public schools, elderly fire safety, specialized training (i.e., Fire Prevention Week/Open Houses, smoke detectors, chimney fire safety, holiday fire safety, and water safety), and juvenile fire setter intervention are examples of programs that can be stressed.

### **EMERGENCY MEDICAL SERVICES (EMS)**

An ambulance should be assigned to the Ballardvale Station as soon as possible with the addition of a fourth fire fighter. Currently the engine company there responds on certain EMS calls awaiting the arrival of an ambulance from one of the other stations to respond. This inconsistent delivery of EMS should be rectified. Staffing an ambulance out of Ballardvale eventually could lead to station move-up of other resources upon ambulance dispatch, but this is a decision for Fire Administration to make if and when an ambulance is moved into Ballardvale.

ALS services are presently delivered by hospital-based units and not the Fire Department, which provides a BLS transport service. It should be noted that Lawrence General Hospital does an exceptional job providing this service and that the comments in this report are aimed at the development of enhanced service delivery strategies that would work in concert with the second tier response from Lawrence General Hospital. It is our observation that most Massachusetts communities similar in size to Andover have developed ALS capability. Although the second tier provided by Lawrence General serves as an exceptional resource, Andover should actively engage in planning to provide ALS in the future. This recommendation is based upon the following four factors:

- Most Massachusetts communities similar to Andover provide or contract ALS services. This level of service has become the standard of care.
- An aging population will increase ALS call volume and increase the percentage of time that a regional unit is dedicated to other communities.

- The changing reimbursement and insurance environment could lead to service reconfiguration.
- Response time and ALS therapy could be enhanced if that capability was provided by the responding ambulance crew. We witnessed two medical calls where the second tier unit responded into Andover and followed the ambulance by approximately ten (10) to twelve (12) minutes.

Approximately 65% of Massachusetts Fire Departments in Andover's peer range of 28,000-40,000 population who provide EMS are operating at the ALS level. The new Fire Chief, in consultation with the Town Manager, Board of Selectmen, the Union, and the hospitals, may want to investigate the possibility of gradually introducing in-house capability. This would require a substantial investment by the Town, but the experience of other departments suggests that a substantial increase in the annual EMS revenue stream can be anticipated, in some instances enough to offset the cost of implementation and operation.

We would recommend that Andover continue to work with and support the second tier response from Lawrence General Hospital. However, concurrently, the Town should work with the Union to see if reasonable interest exists in forging a partnership to gradually develop an internal ALS capacity. A reasonable first step in this process would be to determine the level of interest in providing pre-hospital care at the intermediate level. This would allow Andover to enhance the level of care offered and provide for a strong foundation for both future development and working with the existing resources provided through Lawrence General Hospital.

- 6-1** Recommendation: As soon as the Ballardvale Station is staffed at four personnel, transfer an ambulance there so there are three (3) ambulances in service in Town, minimizing response times to Andover citizens and increasing the efficiency of Andover's firefighters.
- 6-2** Recommendation: Maximize EMS rates to collect as much as possible to defray EMS expenses from taxpayers to those who use the service.
- 6-3** Recommendation: Insure there is a fair abatement policy for those who cannot pay (elderly and destitute).
- 6-4** Recommendation: Increase ambulance vehicles to four (4) so there is a spare along with three (3) in service.
- 6-5** Recommendation: Insure the Department training program provides for appropriate EMS re-certification opportunities, including refreshers, CPR, defibrillator, First Responders, and CEUs. Keep accurate records for each employee.

- 6-6** Recommendation: Many hospital-based ALS services are discontinuing. In some cases, this leaves a void in communities now unable to react and provide their own ALS. Andover should pro-actively assemble a focus group of administration, labor, hospital, outside physician, and citizen input to study this issue. It may result in a plan to prepare to assume ALS in the Fire Department. Initially it will cost money, but the payback will be increased fees for the Town, better efficiency for the Town's firefighters, and citizen appreciation and approval.
- 6-7** Recommendation: The Department's EMS Coordinator and the new Training Officer must work closely to effectively administer EMS training and recordkeeping.

## **DISPATCH OPERATIONS**

Currently civilian dispatchers provide fire and EMS communications services for the Fire Department. They are located on the Police side of the Public Safety Complex and supervision is provided by the Police Department. We recommend that there be more Fire Department involvement in supervision and training. Dispatchers receive less than minimal training now on Fire Department operations (Appendix J).

- 7-1** Recommendation: There should be a joint Police/Fire Department Committee or working group that oversees training and quality assurance of dispatch operations (Appendix T).
- 7-2** Recommendation: All dispatchers should be EMD (Emergency Medical Dispatch) trained and consideration should be given to making it mandatory for new dispatchers to attend the Regional Training Academy held at the Milford Fire Department from time to time (Appendices H and T).
- 7-3** Recommendation: Staffing seems to be adequate, but more training in fire operations and Incident Command is essential to improved dispatch activities (Appendices H and P).
- 7-4** Recommendation: There needs to be a technology-based re-call system for Fire Department personnel in an emergency situation (radio or alpha-numeric pagers).
- 7-5** Recommendation: A formal fire radio transmitter failure contingency plan needs to be developed (Appendix T).
- 7-6** Recommendation: With only two (2) dispatchers on-duty, a 911 telephone should be installed in the bathroom which is compatible with the new 911

technology being deployed by the Massachusetts State Emergency Telecommunications Board (SETB) (Appendix I).

- 7-7** Recommendation: As Mobile Data Terminals are added, building site plans and schematic drawings should be entered into CAD for reference by dispatchers (Appendices N and S).
- 7-8** Recommendation: A formal ride-along program for new dispatchers should be established in the Fire Department so they can understand the nuances of fire and ambulance communications at emergency scenes first-hand. This better enables them to function as emergency dispatchers (Appendix I).

## **PUBLIC SAFETY RELATIONSHIPS**

The current Public Safety Department Heads cooperate very well. There is some concern within the mid-level echelons of both Departments about the perceived lower level of accountability of the other's Department. This is not unusual; it seems that almost all public safety agencies suffer from the "we work harder than them" syndrome. However, closer working relationships and better understanding in these areas need to be fostered in order to insure efficiency when emergencies occur, especially in disaster scenarios. It would be beneficial to conduct regular inter-agency meetings and training sessions where managers from both Departments are afforded an opportunity to interact and become better acquainted in a relatively relaxed atmosphere.

## **COMMUNITY RELATIONS/PERCEPTION**

The Fire Department seems to be well liked within the community. However, many departments deliver more to their communities. These additional services include involvement with community based fire safety education programs, such as SAFE, elderly fire protection, smoke detector give-aways, etc. More can be done with the Town's website and cable TV.

The Union leadership is consistently embroiled in labor disputes with the Town and, although no judgment is made here about the legitimacy of individual issues, we note that the Union was unwilling or unable to assemble its leadership team and a representative from each shift to meet with members of the MRI team as requested.

With a new Fire Chief coming aboard, it is critical that all parties recognize that the existence of the Fire Department is to provide crucial fire, EMS, code enforcement, and educational services to the citizens of the Town of Andover. That is the basic premise of providing public safety services to the community. Anything less than that should not be acceptable.

- 8-1** Recommendation: Improve and formalize fire safety education in the community, schools, and focus groups like the elderly and fire setters.
- 8-2** Recommendation: Utilize all media outlets (newsprint, community TV, Town web, community events) to get the fire safety message out.
- 8-3** Recommendation: Use on-line technology as much as possible to streamline the Permit process.
- 8-4** Recommendation: The new Fire Chief situation should be seized upon by labor and management to forge a new cooperative relationship to improve fire, rescue, and EMS services to the citizens of Andover. Confrontation is a lose/lose situation for all parties concerned, especially the citizens of Andover who pay for the service.

## **EMERGENCY MANAGEMENT**

As the response to the recent floods demonstrated, it is important that emergency management be a shared and cooperative function by all community organizations. These situations require continuous communication and coordination between the various first responders, municipal operating departments, Town officials, and the Emergency Management Director, as well as establishment of an EOC and forward command posts, with all being supported by a well-coordinated, central administrative team. It would be helpful to document the lessons learned from the flooding response (as well as any future significant emergency responses) through a facilitated interagency post-incident critique involving those who were involved in any element of the incident. This information should be integrated into Departmental plans so that future responses to emergency situations, whether natural or man-made, reflect the intelligence of past experience. Additionally, practice exercises (both planned and spontaneous) that involve all those who need to communicate and take coordinated action in emergency response situations should be scheduled on a regular basis.

- 9-1** Recommendation: Andover must develop and adopt a Plan whereby the types of incidents that would activate the EOC and Town-wide operations under EOC control are identified.
- 9-2** Recommendation: All emergency services need to practice in an EOC environment after a Plan is developed and training is completed. Tabletop exercises should follow.
- 9-3** Recommendation: After training to the Plan is completed, apply to MEMA or the Regional Homeland Security Council for grant funding to stage an actual emergency drill to test the Plan and inter-agency cooperation. Develop an after-



action document that identifies the problem issues raised and correct the Plan accordingly. Re-train all personnel.

## **CONCLUSION**

We appreciate the opportunity to be of service, especially at this critical time in the long and proud history of the Andover Fire Department. We have endeavored to provide a professional perspective, identify the challenges facing the Department and the Town of Andover, and provide recommendations relating to the opportunities for positive, constructive change that could be pursued. We believe that the next Chief of the Department, in conjunction with the Town Manager, should consider incorporating these recommendations into the goals and objectives for near term advancement of the Department.