

Letter of Transmittal

To: The Gray Town Council

From: The Ladder Truck Committee

Date: 10 October 2017

Subject: Ladder Truck Committee: Recommendation to the Gray Town Council

Enclosed is the summation of the relevant topics investigated by the Ladder Truck Committee in efforts to arrive at a recommendation to the Gray Town Council, as to whether or not the Council should pursue replacement of the ladder truck.

The collective effort of the LTC was to provide research and insight to the Council and interested parties regarding the need of a ladder truck in providing public safety services. The investigation conformed to a two month time period to produce results that could affect the generation of the 2018 fiscal budget.

Should the Council have questions with this report or require further information, please reach this committee via Councilman Dan Maguire.

Ladder Truck Committee
Recommendation to the Gray Town Council

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Report Distributed October 17, 2017

**Prepared for:
The Gray Town Council**

Abstract

The Ladder Truck Committee sought to define and investigate the options available to the Town of Gray regarding the aging ladder truck and understand the need for this specialized piece of fire apparatus. Along the path of inquiry, the LTC delved into the impacts of a new truck, the mutual-aid component, and the influence on safety for firefighters. This report will explain the committee's findings on these topics as well as look at resource management within the fire department.

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List of Abbreviations

FY	Fiscal Year
GFR	Gray Fire Rescue
GPM	Gallons Per Minute
ISO	Insurance Services Office
LTC	Ladder Truck Committee
NFPA	National Fire Protection Association
RIT	Rapid Intervention Team
YR	Year

Discussion

Introduction

The 1996 aerial ladder truck owned by the Town of Gray and identified as Truck 44 of the Gray Fire Rescue Department was purchased more than 20 years ago, and is now exceeding its expected useful life. In 2016, the Fire and Rescue Department submitted for budget consideration, the replacement of Truck 44. The Council moved to create a warrant article for the June 2017 municipal election that, if approved, set aside a portion of the trucks replacement value and created a Ladder Truck Committee (LTC) with a charge to “study whether the Public Safety needs of the Town require the replacement of the current ladder truck and to make its final recommendations on the issue in time to be included on next year’s annual Town meeting warrant” (Town of Gray Warrant Article 9).

The Ladder Truck Committee set forth to fulfill its charge beginning in August 2017. The LTC investigated topics such as why the town needed the current truck, the benefits and expectations of a new truck, the available options to replace or not, why and how often the truck goes out of town, and what rules and regulations impact a fire service ladder truck. This report explains these issues and culminates with a recommendation from the LTC.

Purpose of Gray’s Current Truck

The current ladder truck in operation at GFR is a 1996 Ferrara/HME/LTI. It has a 75 foot aerial platform, a 500-gallon water tank, and a 1250 gpm water pump. The truck also carries water supply hose, fire attack hose, lighting equipment, several types of power saws, powered fans for ventilation, a RIT kit, a large assortment of ground ladders, and a large complement of hand tools all designed to do the specialized work that the truck is also intended for.

The large complement of ground ladders, specialty tools and equipment on Truck 44, are required by NFPA (NFPA 1901) to be carried on an aerial fire apparatus. The other apparatus in the department's fleet are not capable of taking on this added load.

A 1994 report from the firm Donovan & Associates (a fire and life safety consulting group), explored the needs of the fire department during the era of the departments first ladder truck. The report contains the findings of a 3 day visit and subsequent evaluation from Joseph Donovan.

In the report, Donovan urged the purchase of an aerial ladder truck for several reasons including: “the number of large volume buildings and buildings 35-feet or higher in town” (Donovan). Since Donovan’s report in 1994 the number of buildings fitting these criteria has doubled, through new construction or building additions. The town of Gray has more than twenty large commercial buildings that, if they were involved in a fire beyond the incipient stage, would require large volumes of water applied with master streams.

Option 1: Refurbish Current Truck

The committee extensively analyzed the option to refurbish the ladder truck. The current truck is 21 years old and was purchased with a 20-year life expectancy. The truck's components were made by several different manufacturers. Some of these manufacturers are no longer in business, which means support is not available and parts are now needing to be custom made. A cost estimate from a Northeast Emergency Apparatus suggested that refurbishment of the aerial portion of the truck alone could cost between \$235,000 and \$280,000 (LaCasse). This estimate did not include work on the engine/drivetrain, chassis, cab, body, water pump and tank.

NFPA acknowledges two levels of refurbishment (NFPA 1912) which leave us with the option to either do a massive refurbishment (level I) and bring the truck up to current standards, or do paint and basic repairs to individual components (level II). A level I refurbishment would be virtually impossible and at the very least cost prohibitive.

If the choice was made to repair or refurbish the truck it would be a lengthy process and the town would be left without a ladder truck for most of a year. The budget process could take a year and the refurbishment work would tie the truck up for another 9+ months. This would make the truck roughly 23 years old when it was returned to service, with much of it still in 23-year-old condition. This option includes a large investment in an already aged fire truck and, too many variables that could translate into more cost.

Option 2: Continue Use of Current Truck As-Is

The current truck is performing excellently for its age. It is fully functioning however, it is already exceeding its life expectancy and predicting how long it will last is impossible. It is expected that older apparatus has increased costs of repair due to age/use and has a finite life expectancy. Should the decision be made to wait it out until catastrophic failure occurs, the town would then be left without a ladder truck for possibly two years. This extensive time without a ladder truck is attributed to the budget cycle and the industry norm of close to a year for delivery.

Option 3: Purchase New Truck

A new truck would be expensive, cost estimates suggest as much as \$1.4 million for a ladder truck similarly equipped to the current Truck 44. The price of the current ladder truck was \$573,029 in 1996. According to manufacturers, fire apparatus prices have inflated at near the same rate as regular passenger vehicles, between 3% and 4% yearly. A Ford F150(XL,4x4,V8) in 1996 had a MSRP of \$17,320 and in 2017 the MSRP is \$33,080 (Harris Local Government).

A new ladder truck would have newer safety features and equipment. It would be required to meet many improved safety standards from NFPA, as well as state and federal motor vehicle safety standards. The useful life would be 20 years rather than the unknown of maintaining the current truck beyond the 23 years old it will be if replacement is approved for the 2018 budget. The cost of operating a new truck would be comparable to that of the current truck but without the repair costs due to age. Purchasing a new ladder truck while the current truck is still

serviceable will greatly reduce the likelihood of a lengthy term where there is no ladder truck in town.

Truck Specifications

To make the ladder truck as capable as possible while working within some constraints, the fire department has specified some key features that affect the overall cost of the truck, as well as its ability to perform multiple tasks. The combination of these key features puts this truck in a class known as a 'quint' because it has the following five key features: water pump, water tank, water hose, aerial/platform, and ground ladders. The pump, tank, and hose allow the truck to perform the same functions as an engine/pumper, as well as move water up the aerial waterway and discharge from an elevated large volume nozzle. The aerial platform offers a safe work platform for fire and rescue activities. The complement of ground ladders on a ladder truck is far superior to other apparatus types. The size of the truck and its role lend it well to carrying more and longer ground ladders that wouldn't fit on any of the departments other apparatus.

The length of the aerial is more important to its ability to reach objectives that the truck can't get too close to rather than height alone. The industry standard has progressed to aerials reaching 100+/- feet high (depending on manufacturer and model) and similarly as far horizontally. In many cases there are obstructions to proper ground ladder or ladder truck placement such as snow, steep grades, porch/decks, parked cars, dumpsters, trees, wires, pools, and many others that make extensive reach a necessity to make best use of the aerial ladder.



Figure 3: Aerial Reach

Ladder trucks often are quite long. The overall length of the truck when the aerial device is stowed affects where the truck can fit, both traveling and in the station. Some manufacturers offer configurations that can work for Gray, and some other trucks are just too big overall to fit.

Ladder trucks come in similar setups or in a comparable class within the fire apparatus industry. However, different manufacturers offer unique characteristics that affect some key points of value to a specific department's use. Some of these points are the quality of construction and materials used, anti-corrosive and other measures to increase serviceable life, and the overall length of the truck. Also, to be considered is a brand's coverage area, specifically, how far away is manufacturer support and maintenance.

Impacts of a New Truck

Should the town elect to purchase a new ladder truck, current staffing levels would be maintained to use it effectively. Additional staff would be required to accomplish the same tasks without a ladder truck. The cost to employ each additional firefighter would likely exceed the cost of the ladder truck over 20 years (assuming cost to town being approximately \$75k/yr) (Markavich). A new ladder truck would operate in the same or similar capacities and methods to the current truck, so additional training would only be initial familiarization training provided by the manufacturer and included in the purchase of a new truck as an industry standard. The current ladder truck already performs multiple functions and a new truck would do those same multiple functions, but would not eliminate any other equipment.

Gray Fire Rescue has analyzed their fleet usage and identified apparatus that no longer applied to the type of calls received. This allowed for consolidation and fleet reduction. The department is currently operating 3 engine/pumpers (one at each of 3 stations), 2 ambulances, 1 tank truck, 1 heavy rescue, 1 utility truck, and 1 ladder truck. In the last ten years, the department has removed from its fleet: 2 wildland trucks, 1 mini-pumper, and 1 spare engine/pumper. The duties of these eliminated fire apparatuses have been reassigned to other trucks capable of multiple functions.

Firefighter Safety

The safety of firefighters is another key reason an aerial ladder truck has tremendous value. The use of an elevated work platform that supports multiple firefighters and equipment is an immeasurable benefit to the safety of the people who work and volunteer for the Gray Fire Rescue Department. There are many safety concerns when working on elevated structures or roofs such as: snow and ice, steep and slippery roofs, and failing structural support. Newer construction materials and practices provide greater difficulty for firefighters needing to cut through them as well as greater safety risks when the structures fail at a faster rate in a fire.

In an example, a job is to be performed on a typical residential pitched roof, 2 to 4 firefighters are necessary to deploy the ground ladders needed to reach one objective. The firefighters need to carry the ladders potentially through snow and other hazards, and climb them while carrying another ladder to use on the roof. Next, the firefighters carry heavy tools and equipment up the first ladder and onto a second ladder followed by more dangerous work. Firefighting is inherently dangerous, and an aerial ladder/platform can reduce risk of fatigue, injury, and possibly death.



Figure 1: Ground Ladders

The next example is an aerial ladder deployed from a stable location. Under usual circumstances, two firefighters either ascend the aerial ladder once it is in position or maneuver the platform from the safety of the platform with their tools already onboard. The platform reaches the location requiring firefighter intervention and they do their work from the safe working platform. While in motion, the firefighters have safety harnesses to tether themselves to the platform.



Figure 2: Safe Working Platform

There are many applications for use of an aerial device: access to elevated structures, access to areas that cannot support a ground ladder, access to vehicles and people needing assistance up or down an embankment, elevating a master stream of water or large volume nozzle, overhead access to rail cars or semi-trailers, and rescuing persons in high places such as bucket trucks/lifts/trees. All of these scenarios and others can be performed with greater firefighter safety by working from an aerial platform.

Mutual-aid Statistics and Automatic-aid vs. Mutual-aid

In our region, fire departments function with the help of two kinds of “aid” or assistance from neighboring communities; automatic-aid, and mutual-aid. The goal for a given communities’ fire department is to stack the deck in their favor so that they have the right kind of trucks, equipment, and staffing to handle their usual calls. However, every department gets the not as frequent calls that require more resources than the department usually has available.

Automatic-aid is where one department or service agrees to automatically handle calls of a certain type or in a certain area for another department. Often with this type of aid, an exchange of funds or services is agreed upon. In the Town of Gray, the Raymond Fire and Rescue Department is the automatic primary responding agency for fire and rescue calls to the portion of Gray on the other side of Little Sebago Lake. In exchange, Gray is the automatic primary responding agency for fire and rescue calls on North Raymond Rd from Gray to Poland. The exchange is fairly equivalent and agreeable to both communities.

Mutual-aid is where the fire department responds to all calls in their community, but needs extra assistance from out of town departments for some of them. The type of equipment and other resources needed depends on the nature of the call. In the case of a fire where there is insufficient water, then the need would be extra tankers to make an effective water delivery system. There may be a need for special technical rescue equipment and assistance, or wildland firefighting equipment, or additional ambulances and fire engines. On any call that requires mutual-aid, it’s a certainty that additional personnel are needed too.

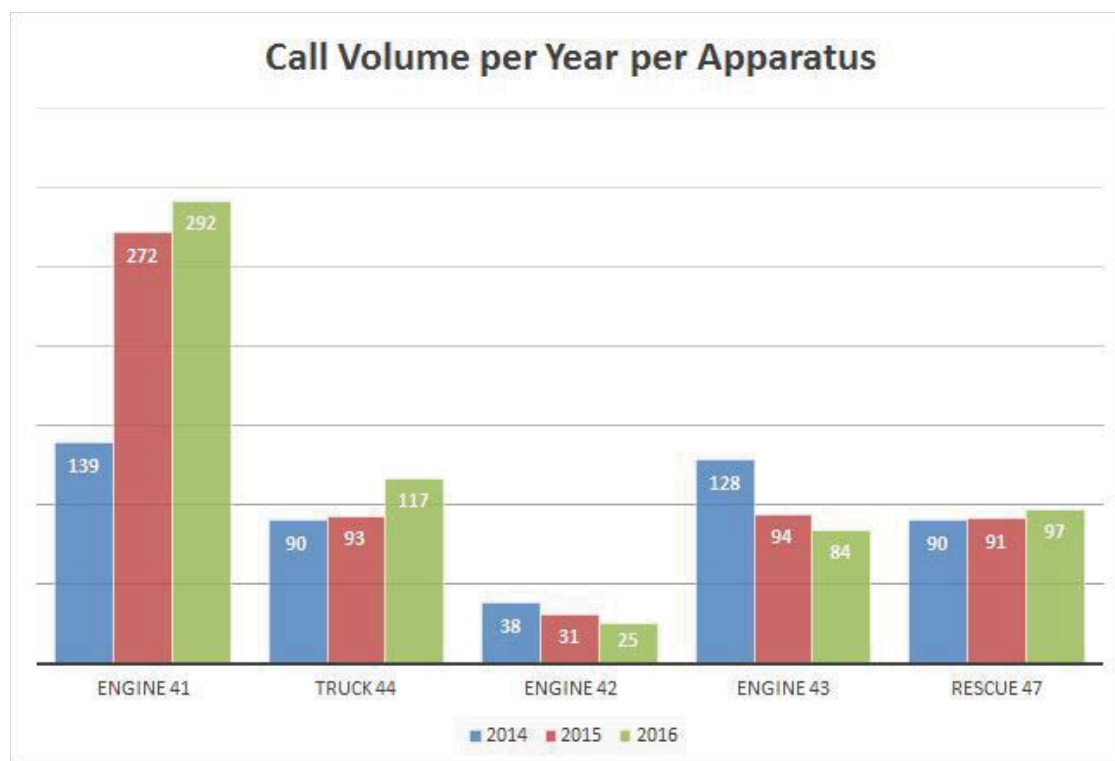


Figure 4: Call Volume per Year per Truck (GFR call reporting)

According to the fire departments call reporting software in the last three years, Gray's ladder truck has responded to approximately 100 calls a year (see figure 4). That's right on par with the other frontline specialty fire apparatus in Gray. The out of town calls, or mutual-aid calls for the ladder truck, have averaged just under 30 per year. It is of note that many of the out of town calls are canceled after the call was delivered and logged. The mutual-aid response was pre-planned for the type of category the call fits but, the department having jurisdiction decided that the mutual-aid response was unnecessary in certain cases. In the last three years, the number of times the truck was canceled enroute to a call out of town ranged from 10-23.

The ladder trucks that are closest to the Town of Gray, and are our only two mutual-aid ladders, respond from locations that are roughly 15 minutes away. Windham Ladder 4, housed at North Windham Station is approximately 7 miles to Gray village. Cumberland Ladder 107, housed at Cumberland Central Station is approximately 8.3 miles to Gray village.



Figure 5: Locations of mutual-aid aerial ladders (Google Maps)

Asset sharing with other communities

Resources coming from out of town cannot arrive at an emergency as quickly as resources housed already within the community having the emergency. Sharing a truck with other communities could increase the truck's response time effectively decreasing its usefulness at an emergency. Positioning the truck for effective use necessitates a ladder truck be among the first arriving fire trucks at an emergency. If the truck were to continue to be housed in a location centrally in Gray, then there would be no more benefit to the other communities than there is currently with mutual-aid agreements. Sharing a truck with another community would also impact the reciprocal relationship with all the other communities that Gray exchanges mutual-aid with.

Sharing a truck would effectively cut costs. It would also cut the trucks effective use in the Town of Gray. If we did share the truck with another community, where would we house it? If it was to be housed equidistant from town centers or any other mutual location then a new station would be required at more cost. Should we share it but house it in a currently staffed existing station? This would provide no greater service to either town than the current arrangement that relies on mutual-aid for significant calls. If more than one community had financial interest in the truck, then more than one community would desire control of the truck, where it's housed, how it's staffed, on what calls it goes, and how it's maintained.

Conclusion

The Ladder Truck Committee has thoroughly investigated the concept of replacing the Town of Gray's ladder truck. Research and reporting has been provided on industry requirements and standard practices as well as the Town of Gray's specific needs. The LTC has found a ladder truck in the Town of Gray to be a valuable asset.

Recommendation

Through our efforts, the Ladder Truck Committee believes it has completed its mission and is confident in its recommendation to the Council. The LTC unanimously recommends the Town of Gray purchase a new aerial fire apparatus to replace the existing Truck 44.

We further recommend purchase of a new ladder truck should include options that define the apparatus as a 'quint' (water pump, water tank, hose, ground ladders, aerial platform). The current truck should be sold or traded to recover its value towards the purchase of its replacement.

Work Cited

Donovan, Joseph L. Report to The Honorable Town Council, Town of Gray. Donovan & Associates. 1 November 1994.

“Gray.” Map. Google Maps. Google, 2017. Web. 28 Sept. 2017

Harris Local Government. Trio Software Blue Book Valuation Version 3.2.44. Retrieved 21 September 2017.

LaCasse, Mike. Cost Estimate. Northeast Emergency Apparatus LLC. 25 August 2017

Markavich, Cathy. Email Cost Estimate. 6 October 2017

National Fire Protection Association. 1901 Standard for Automotive Fire Apparatus. 2016 edition.

National Fire Protection Association. 1912 Standard for Fire Apparatus Refurbishing. 2016 edition.

Annotated Bibliography

Donovan, Joseph L. Report to The Honorable Town Council, Town of Gray. Donovan & Associates. 1 November 1994.

Joseph Donovan was employed to conduct a survey of the town's fire suppression capabilities with specificity in the category of fire apparatus. He was the Fire Chief of the City of Jackson, Mississippi and principal in Donovan and Associates, a firm consulting on the matters of fire and life safety. He wrote this report defining recommendations to the town including that of reasons to purchase the ladder truck currently in operation and considered for replacement now.

Elkanich, Kurt. Personal interview. 24, 31 August, 7 September 2017

Kurt Elkanich is the Chief of the Gray Fire Rescue Department. He provides context to the statistics and other information requested of the department. He has been present for all committee meetings to answer questions. He is reliable in providing information the department has recorded such as call statistics.

Gray Fire Rescue. Apparatus Needs Assessment Report. Morrison, Galen; Elkanich, Kurt; Hutchins, Nick; Dodd, Alec; Desjardins, Chris. 2016

Gray Fire Rescue has had a chief appointed Apparatus Needs Committee for 6+ years. This committee submitted a report on the department's needs regarding a new ladder truck last year. This report includes many facts and comparisons that apply to the current council appointed Ladder Truck Committee's task. The report provides reasoning from the fire department's perspective as a proponent of purchasing a new ladder truck and includes solid backing information that could benefit the LTC's investigation.

Gray Fire Rescue. Call Reporting. September 2017

These are statistics generated by the records of calls for service to the Gray Fire Rescue Department. These statistics show call volumes per specific fire apparatus and the numbers of calls inside the department's jurisdiction vs. mutual-aid calls. The statistics are not published but records made available upon request.

Gray, Town of. Warrant Articles. 13 June 2017

These are the warrant articles for the annual town meeting. Article 9 references the creation and duty of the Ladder Truck Committee.

Harris Local Government. Trio Software Blue Book Valuation Version 3.2.44. Retrieved 21 September 2017.

This is the software many local governments, specifically the Town of Gray, use to evaluate fee values for vehicle registrations. For the purposes of this report, the values gained were original Manufacturer Suggested Retail Price for a historic and current MSRP of a common passenger vehicle.

Hutchins, Nick. Personal interview. 24, 31 August, 7 September 2017

Nick Hutchins is the Deputy Fire Chief of Gray Fire Rescue. He is also the fire department mechanic and has lead a committee addressing the department's apparatus needs for the past 6 years. He has provided great amounts of information about the current apparatus, the new apparatus being proposed and the industry standards.

Insurance Services Office. Fire Suppression Rating Schedule. Revised 2013 edition.

ISO has generated a schedule that rates a fire department's ability to provide fire suppression. This includes identifying fire loads and the required resources to mitigate the potential fire losses in a community. This schedule is widely used by area fire departments as a tool to identify the assets they should have to provide a certain level of service.

LaCasse, Mike. Cost Estimate. Northeast Emergency Apparatus LLC. 25 August 2017

Cost estimates for refurbishment of the current ladder truck. NEA is the closest most qualified business to offer such services pertaining to our specific ladder truck. The option of refurbishment was explored in depth and will be an important component of the report. A phone conversation was held between the Town of Gray Deputy Fire Chief and Mike LaCasse, Northeast Emergency Apparatus LLC to discuss the specifics of the cost estimate.

Ladder Truck Committee. Committee meeting minutes. 24 & 31 August 2017, 7 & 21 September 2017.

The Ladder Truck Committee met several times to discuss topics to be investigated and information that is of importance to the charge of the committee. The report is based on the findings of the committee and its recommendation. The minutes serve as meeting notes.

Markavich, Cathy. Email Cost Estimate. 6 October 2017

Email from Cathy Markavich, Finance Director for the Town of Gray, stating the approximate cost for a Firefighter/EMT-A pay, benefit and outfitting with personal protective equipment to be approximately \$75,000/yr at FY2018 rates.

National Fire Protection Association. 1901 Standard for Automotive Fire Apparatus. 2016 edition.

National Fire Protection Association. 1911 Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles.. 2017 edition.

National Fire Protection Association. 1912 Standard for Fire Apparatus Refurbishing. 2016 edition.

The NFPA writes standards and codes that are adopted by governing agencies for the purposes of promoting safety and regulating fire, electrical and the related. These standards are adopted by the State of Maine, so that state entities like the Bureau of Labor or federal, state and local motor vehicle laws can cite offenses based on the NFPA standard. NFPA provides guidance to fire departments as to what they should and shall do in most capacities. This resource is very credible and applicable to the topic.

Appendix A: Donovan & Associates Report

Summary of public safety needs and fleet structuring within the Gray Fire Rescue Department as investigated and reported in 1994 by the consulting firm Donovan & Associates. The report is preceded by the biography of Joseph Donovan.

Joseph L. Donovan

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9/20 Minutes 601-956-1392

He has been the Fire Chief of the City of Jackson, Mississippi since April 15, 1991. The Jackson Fire Department is a fully paid department consisting of 396 members, 25 fire companies in 22 fire stations providing fire and rescue services to an area of 110 square miles and a population of 197,000. Since becoming fire chief, he has implemented innovative racial and gender neutral hiring and promotional processes. Seventy three fire fighters have been hired; 23 chief officers, 59 captains and 37 lieutenants have been promoted. Seventeen new dual-use fire apparatus and innovative fire and rescue equipment have been purchased, reducing the number of fire companies from 32 to 25, increasing the rescue companies from four to six, decreasing the average age of the fleet from 17.1 to 5.36 years, increasing the department's pumping capacity by 4,250-GPM and increasing the staffing on 20 companies. Three new fire stations are being built. One is a consolidation of Stations 2 and 8. One is a replacement for Station 10, which will also include a fire safety education center and a fire museum. One will be for a newly annexed area staffed by a transferred company. New fire safety education, fire inspection, pre-emergency planning, incident management, comprehensive training and fire fighter safety programs have been implemented. The department has been completely computerized with the installation of a new Computer Aided Dispatch/Records Management System. A new 800-mhz communications system is being installed. The net savings to the City as a result of the changes implemented since 1991 is projected to be approximately \$90,000,000 over a 20 year period.

He is a Principal in Donovan and Associates, which is a management consulting group begun in August 1986 specializing in fire and life safety. He is an internationally recognized expert on managing the fire and life safety risk in a jurisdiction and assuring the delivery of cost effective quality fire loss management, fire protection and emergency medical services. He has been the principal fire and life safety management consultant for studies in over 60 fire departments throughout the U.S.A. They are as diverse as Atlanta GA; Bayonne, East Orange and Hopewell NJ; Dallas TX; Florence and Ft. Pleasant KY; Jackson MS; Mt. Lebanon and Lebanon PA; Barnstable, Chelmsford, Hanson, Ipswich, Lexington and Sandwich MA; Norfolk VA; Scottsdale AZ; Coachella Valley Association of Governments and Stockton CA; Washington DC; Howard County and Queen Annes County MD; Dayton and Westerville OH; Martin County and Winter Springs FL; and Vail CO. He has recently authored a comprehensive book *Assessing Your Fire Department* with accompanying software for management planning and implementation.

He served as Superintendent of the National Fire Academy from January, 1982 to August, 1986. In this post, he directed the national fire training system and the development of a *Master Curriculum Plan* which included implementation of Executive Fire Officer, Command and Staff, and Technical Specialist programs at the Academy's campus in Emmitsburg, Maryland. He directed the implementation of a fire service outreach program and Training and Resource and Data Exchange network (TRADE) for state and local fire training agencies in the United States. A non-traditional baccalaureate degree program offered nationally through eight universities was fully developed and implemented as were many other significant programs. During his tenure, the *Incident Command System* (ICS) was adopted as the command system that would be taught at the Academy; a "train the trainer" program and national teleconferences were implemented.

He was awarded the Everett Hudiberg award in 1984 by the International Fire Service Training Association for his outstanding contribution to fire training in the United States and was recognized by the National Fire Protection Association for his efforts to improve the American Fire Service in 1985. He was listed in the 43rd Edition of *Who's Who in America, 1984-1985*.

He served as Chief of Fire Training for the Commonwealth of Massachusetts from 1977 to 1982. In that position, he directed the Massachusetts Firefighting Academy and also administered a statewide outreach training program for state and local government and the private sector. During his tenure, the Academy doubled its attendance. A Command and Staff program, a model outreach fire ground operations training program, a comprehensive hazardous materials program, (which included a new liquefied natural gas/liquefied petroleum gas training facility), an industrial fire brigade program, and an internationally recognized Fire Safety Program for the Mentally Handicapped were implemented. The planning and funding process for the construction of new academy facilities was initiated.

copy

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NOV 7 1994

November 1, 1994

The Honorable Town Council
Town of Gray
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First let me take this opportunity to thank you for requesting my services. I enjoyed my visit to your lovely town. The New England hospitality shown this transplanted Yankee was wonderful. I thank all who made my visit so enjoyable, especially you, Jim and Susan Gillie and Jon Barton. I enjoyed the opportunity to interact with the members of the Gray Fire and Rescue Department (GFRD), the Public Safety Committee and the Town Council.

My written report is a summary of what I told everyone who attended Sunday's meeting at the Town Hall. It also includes additional insight and information garnered through my telephone discussions with John West, Town Council Member and Bill Dale, Town Counsel.

I arrived in Gray on Friday afternoon, October 28 and went directly to Jim Gillie's office. Jim then took me on a very extensive tour of the Town of Gray, concentrating on the areas covered by water distribution and hydrant system. We also viewed those buildings which were of concern because of the size, height, life safety and/or fire risk, limited accessibility or not serviced by the hydrant system. I was able to correlate this tour with the information I had received through my review of the Insurance Services Office (ISO) Commercial Risk Services report on their 1992 *Survey of the Town of Gray* (relative to the insurance classification of the town) and the *Master Plan for the Gray Water*

• FIRE and LIFE SAFETY MANAGEMENT CONSULTANTS •

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November 1, 1994

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District completed in July 1993. Jim and I also went into the Public Safety Building unaccompanied to look at the former New York City ladder truck.

Saturday I toured the three fire stations where I surveyed the department's fire apparatus including the donated 26-year old former U.S. DOD surplus tanker truck and resurveying the 14-year old former FDNY tillered aerial ladder truck. I also interviewed Chief Barton at length about these donations and responded to a motor vehicle accident with the chief and the department. Also, Chief Barton and I thoroughly toured the east side of the "lake" area.

The present inventory of fire apparatus and rescues in GFRD is:

Fire Apparatus

1954 U.S. surplus, gas, std. trans., 750-gallon tank, 750-GPM front pump
1968 U.S. surplus, diesel, std. tran., 1,000-gal. tank, no pump
1968 Chev., gas, std. trans., 750-gal. tank, 750-GPM mid-ship pump
1973 Chev., gas, std. trans., 750-gal. tank, 750-GPM mid-ship pump
1981 GMC, diesel, std. trans., 1,000-gal. tank, 1,000-GPM mid-ship pump
1985 GMC, gas, std. trans., 250-gal. tank, 250-GPM PTO pump
1991 Ford, diesel, std. trans., no water, heavy duty rescue/rehab/command post

Rescues

1985 Ford, gas, rescue (ambulance)
1989 Ford, diesel, rescue (ambulance)

The total water carried on these vehicles is 4,500-gallons.

Gray, Maine

November 1, 1994

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I met with the Town Council, Chief Jon Barton, Town Manager Paul Bird and other interested citizens on Sunday afternoon with following taking place:

1. I opened the meeting by discussing the obligation the Town Council has to the "stakeholders" in the Town of Gray with regards to fire protection and rescue services in the Town of Gray. These obligations include:

- a. Providing the citizens and taxpayers efficient, proficient and cost-effective fire protection, rescue and emergency medical services.
- b. Providing the volunteers with up-to-date resources, apparatus, equipment and training within the means of the Town of Gray.
- c. Providing incentives to maintaining a volunteer fire and rescue service.

2. We discussed the need for an adequate supply of water for fire fighting especially in the 2/3 of the town which does not have access to the water distribution and hydrant system.

3. Does the Town have the equipment, water and training which it needs to improve its ISO Rating? What are the trade-offs? How far should the Town go in investing its funds to improve this rating, when an improvement of the current grading of 6 to 5 would generally decrease the fire portion of an all risk policy by approximately 10%. Policy holders must be sure they enjoy the rate decrease from their insurance carrier, as not all carriers automatically reflect the revised grade if and when it is given the town. How far should the Town go in trying to reduce the grade or better still, in maintaining its current grade? As fire apparatus ages, ISO will not give the Town credit for for it, thus jeopardizing the present grade of 6 earned in 1992. Likewise, average turn-out of volunteers to emergencies can and will effect the grade.

Gray, Maine

November 1, 1994

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4. A volunteer fire and rescue department is the least expensive way of providing fire and rescue services to a town the size of Gray. The average fully-paid career engine company would cost over \$350,000 annually. The small cost of paying the volunteers of the GFRD doesn't even come close to this cost. The cost of sustaining a volunteer department simply involves providing them recognition for their services. One of the major methods used for providing this recognition for their voluntary efforts is providing them with fire apparatus and fire stations they can be proud of and which boosts their moral. A \$350,000 fire truck, amortized over 20 years nets out 1/20 of the annual cost for one fully-paid career pumper company. The volunteers of GFRD have a new fire station but their fire apparatus acts as a disincentive. They cannot, and do not, feel good about rigs that are 40, 26, and 21 years old respectively. They also voiced concern about the lack of a plan to replace the 1985 and 1989 rescues (ambulances) on a regularly scheduled basis.

5. We discussed the possibility of the fire department using the donated aerial-ladder in a limited way if the Town counsel would approve such use based on the Town committing to buy a new aerial ladder-pumper. I also questioned whether the Town of Gray had sovereign immunity. I was told it did not, and this was subsequently confirmed by Bill Dale the Town Counsel. I asked the question because of potential liability when the Town accepts donated fire apparatus which do not meet the current editions of the nationally recognized peer-group consensus standards of the National Fire Protection Association (NFPA). The specific standards are those that fire departments and fire apparatus manufacturers use in specifying and building fire apparatus respectively. I discussed *NFPA Standard No. 1904, Aerial Ladder and Elevating Platform Fire Apparatus - 1991* as it relates to the Town accepting a rig in 1994 not built to this current Standard. The major issue is that the 1991 dated Standard now requires a "250 pound tip load test" which this 1980 aerial ladder cannot meet (see attachment A, numbers 4-2.12.1 and 4-2.12.2). The Town

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Counsel has since confirmed my issue of liability as being legitimate and he recommended that the Town immediately return the truck. We also discussed the issue of liability for the donated 1968 used U.S. Army tanker truck as it relates to current NFPA Standards and he recommended that it be returned for the same reason. He noted that the fire fighters of another town, which he represents, have refused to drive, ride or operate similar type donated fire apparatus for the same reason.

RECOMMENDATION: The Town of Gray should immediately return both donated fire apparatus to limit the Town's exposure to potential liability. The Town should concentrate its efforts on buying new fire apparatus which can accomplish the same objectives.

I voiced a concern over the inaction by the Department and the Town in establishing and then following a schedule for replacing the fire and rescue vehicles. The ideal schedule for a community like Gray would be 20 years as front-line and 5-years reserve for fire apparatus. The rescues (ambulances) should probably be 5-years front line and 5-years reserve depending on the annual mileage and condition of the bodies. I subsequently was informed that such a schedule was in existence in the name of the Capital Improvements Plan, which has allocated funds for the purpose of replacing the 1968 attack pumper three years ago and the rescue (ambulance) this year. I cannot understand why the fire and rescue department has not written specifications to replace these rigs.

6. I discussed the issue of the management of town affairs. Doesn't the Town Council set policy for the Town Manager and Department Directors to carry out? Doesn't the Town Manager have the authority to manage the town government? Doesn't this include the fire and rescue department? Why was the fire chief not following his directive in returning this donated ladder truck? Why did he try an end run on the Manager and the Town Council?

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7. Does the Town require a piece of fire apparatus equipped with an aerial ladder? I indicated, in my opinion, that it does, due to the number of large volume buildings and buildings 35-feet or higher in the town. We discussed some of these such as the Elderly Housing complex, etc. Of concern was the water supply and the need for water to be on every piece of fire apparatus. I discussed the difficult access during the winter due to accumulated snow and during the spring, due to soft roads. I also discussed access into and around the lake area due to the narrow, winding, hilly unpaved roads.

Taking into consideration all of these points, the following recommendations are made:

1. The Town should take immediate action to specify and purchase a 75-foot aerial-ladder pumper with a 500-gallon tank, 1,250-GPM pump, four door tilt cab, automatic transmission and diesel powered equipped with a 35-foot ground ladder and 14-foot roof ladder to replace the 1968 attack pumper which should be disposed of. This type of unit is called a Quad versus a Quint which carries 110-feet of ground ladders, which the town does not require because of the ground ladders carried on the other pumpers.
2. The Town should take immediate action to specify and purchase a 2,500-gallon tanker-pumper with a 1,250-GPM pump on a commercial diesel powered chassis with automatic transmission to replace the 1968 U.S. surplus tanker being returned and allow the 1973 attack pumper to go into reserve.
3. The Town should never purchase fire apparatus which does not have combination use capability.

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4. The Town should take immediate action to replace the 1985 rescue/ambulance with a diesel powered rescue/ambulance.

5. The Town should evaluate placing 350/400-gallons of water and a 350-PTO pump on the Support Vehicle to give it combination capability.

6. The Town should also plan on replacing the 1985 mini-pumper, as soon as possible, with an all wheel drive, diesel powered, midi-pumper equipped with a 750-GPM front end pump for drafting from lakes and streams and a 350-gallon tank as a minimum. This rig can then be used as a quick-attack unit as well as the primary attack unit for the lake area because of its capability to respond quickly and have easy access to the homes and the lake itself. It can also double as a brush unit. (This is a new recommendation not discussed at the meeting, but added as a result of rethinking my recommendations on the need for a brush rig, etc.)

7. The Town should plan on replacing the 1981 tanker-pumper in 2001 with a 2,500-gallon tanker-pumper similar to the one in recommendation No. 2. This will replace the 1981 tanker-pumper which should be placed in reserve, which in turn replaces the 1973 reserve attack pumper. This pumper should be disposed of at that time.

The net water carried on wheels as a result of implementing Recommendations No. 1-6 will total 4,500-gallons which equals what is carried now. The total increases to 7,000-gallons in 2001 by implementing Recommendation No. 7.

Appendix B: Cost Estimate Aerial Repair

The following cost estimate was derived from a phone conversation between Deputy Chief Hutchins, GFR, and Mike LaCasse, Northeast Emergency Apparatus LLC on August 25, 2017. The estimate was based upon repairs NEA had performed on a similar fire apparatus and the estimate included only the aerial portion of the truck.

Item	Unit Cost	Quantity	Total Cost	Additional Comment
Sand blast, inspect and paint			\$8,200	Paint only. Cost of breaking down ladder is additional.
Wire replacement	\$8,000	4	\$32,000	
Pulleys	\$900	12	\$10,800	
Cables	\$5,000	6	\$30,000	
Airline, air dryer and monitoring equipment			\$9,000	
Water way swivel			\$25,000	Unsure if we can get parts, re-do entire electrical system.
Hydraulic swivel			\$18,000-\$25,000	Unsure if we can get parts on this as well, may be unrepairable.
Repair seals and seats on hydraulic valves			\$3,100	
New hydraulic lines			\$1,100	
New slide pads	\$600	16	\$9,600	Includes seats

New metal piping for hydraulic lines	\$1,200	12	\$14,400	Does not include retainer clips and seats
Update flow minder and wiring			\$630	
Update flow minder and display			\$405	
Water way seals and packing			To be determined	Unknown parts availability
New electrical interlock device at pedestal			To be determined	Unknown parts availability
Recommended update to current new NFPA standards			To be determined	
Torque box paint and repair rust	\$480	2	\$960	If rust is found to be excessive, additional inspection may be required with a possibility of being removed from service permanently.
Labor			To be determined	
Total project expected to cost \$235,000 - \$280,000.				