

# **APPLETON FIRE DEPARTMENT APPARATUS COMMITTEE PRESENTATION**

**Submitted by Committee Members:**

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**Prepared for:**

**Jeffrey Jirschele, Chair  
Members of the Safety & Licensing Committee  
& the Common Council**

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## **Introduction**

In October of 2012, Chief Len VanderWyst tasked a committee to evaluate and report on two main topics. The first topic was to evaluate the Appleton Fire Department's (AFD) current apparatus with respect to location, staffing level, and type. Consideration was to be given to the following:

- Insurance Services Office (ISO) rating
- The current staffing and apparatus type of neighboring communities
- Potential for automatic aid, mutual aid, and/or consolidation
- The current services provided by AFD and the potential for enhancement of those services given the appropriate apparatus

The second topic was to research the current apparatus replacement schedule and identify if the current schedule was appropriate. After much research and consideration, the committee recommends the following:

1. No changes to the current staffing model.
2. Relocate 9342 to Station 6 and place a rescue pumper at Station 2.
3. Sell the Elite pumper and replace with a Pierce pumper.
4. Replace pumpers 9321 and 9322 with matching pumpers.
5. Change the replacement schedule to incorporate a scoring system that evaluates apparatus based on usage, condition, and maintenance.
6. Enter a single source contract with Pierce Manufacturing for the purchase of future apparatus.

### **Recommendation 1: No changes to the current staffing model.**

When the initial discussions of staffing began, there were several factors that were not settled that could impact how stations and apparatus could be staffed; specifically, additional automatic aid agreements and the potential for consolidation. After several weeks, Chief VanderWyst informed the committee members that consolidation and additional automatic aid agreements should no longer be considered by the committee at this time. Additionally, the committee should work on the basis that there would be no additional personnel added to the table of organization and that the newly created firefighter/inspector position would stay in place. Given this information, the committee quickly ascertained that there were limited opportunities for significant changes to the existing staffing model.

The committee gave some consideration to revisiting the practice of a two-person response vehicle. This change would require the elimination of an engine company and would have allowed for a firefighter to be available as a fourth on an engine or as a chief's aid. This approach was previously attempted approximately five years ago at AFD but was deemed unsuccessful by management due to inconsistent staffing levels. As discussion progressed on this possibility, reference was made to a March 2012 comprehensive study of the Duluth Fire Department. This study was chosen as a reference document for two reasons: 1) Tridata Division, the firm conducting the study, is nationally recognized for their analysis of public safety systems. 2) Duluth, Minnesota has a very similar size, population, service level, and organizational makeup to that of Appleton, Wisconsin. In this study, Tridata identified

that two person units "...are not only ineffective from a fire suppression standpoint, but they are also potentially dangerous for the firefighters as well as potentially disastrous for Duluth citizens." (Comprehensive Study of the Duluth Fire Department, p. 53) Based on this professional assessment and the department's previous experience, the committee rejected the proposal of a two-person unit.

**Recommendation 2: Relocate 9342 to Station 6 and place a rescue pumper at Station 2.**

The committee considered the locations of the current apparatus in the city with respect to equipment and type. Consideration was also given to the current automatic aid agreements and what those departments are able to provide. The committee concluded that as long as the agreements remained in place, the current equipment locations, specifically the location of extrication equipment, seemed to provide adequate coverage.

The committee did recognize that a growing need on the City's north side could be met by moving the Quint (9342) to Station 6. The need on the City's north side is twofold: 1) Additional resources for fire suppression are delayed due to the geographic locations of stations. 2) The setbacks and lightweight construction of many of the homes in Fire District 6 render the typical compliment of ground ladders on an engine company useless if not dangerous. The placement of an aerial device in District 6, with the staffing of four, would provide compliance with the two in, two out standard as well as place appropriate equipment where there is the potential for greater need. Fire department chief's staff decided to implement this recommendation immediately to meet this need.

In order to maintain the current coverage for extrication, the committee recommends placing a rescue pumper at Station 2. The rescue body provides for ample space for the standard engine company equipment as well as additional space and features for the tools required to perform vehicle extrication. The addition of a second rescue pumper to the fleet will also serve well during times of routine maintenance. Currently, when 9321 is out of service, all of the rescue equipment must be transferred to an alternate unit which is then usually staffed with a shift inspector. This practice increases response time for extrication events. Having a second rescue will allow that equipment to respond with a minimum three-person crew.

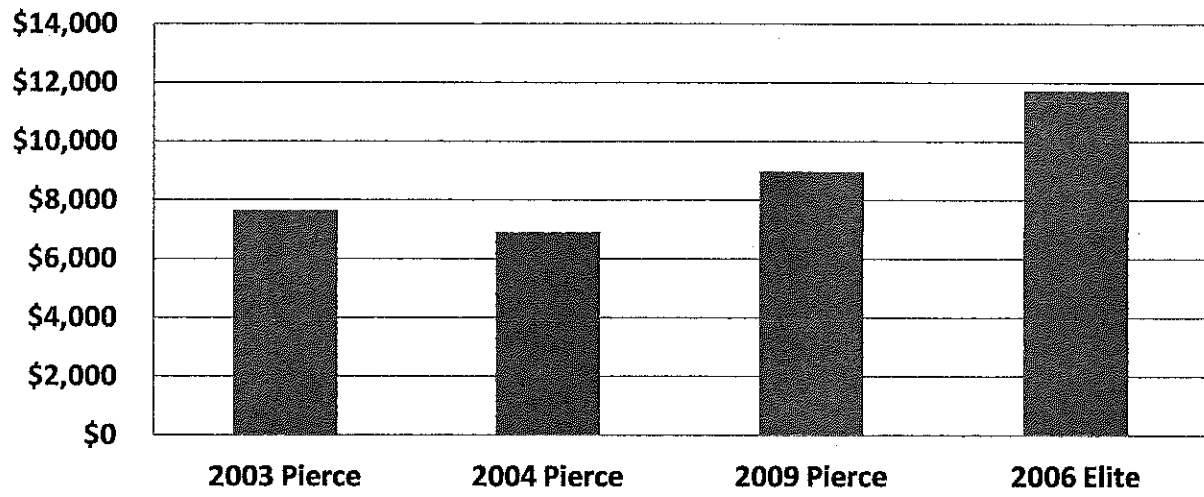
**Recommendation 3: Sell the Elite pumper and replace with a Pierce pumper.**

Two major factors play into the committee's recommendation to sell the Elite pumper: maintenance and equipment familiarity.

Maintenance has been an issue with the Elite pumper since delivery. As shown in Figure 1-1, the maintenance costs have trended higher on average when compared to data gathered for three different Pierce pumpers over their time in service. The bankruptcy of Elite Manufacturing makes finding parts for the apparatus challenging for two reasons: 1) The parts are unique to the Elite and require the fire department mechanic to spend additional time looking them up. 2) Time must be spent determining where the parts can be located due to the closing of the company. Because the Elite is a different vehicle than the rest of the fleet, it requires additional time for the fire department mechanic to diagnose any troubles with the apparatus.

Fig. 1-1

### Maintenance Cost Comparison Elite Pumper vs. Pierce Pumper Average Annual Cost



Having a vehicle that is different from the rest can be difficult for the end users as well. While the components generally work the same, the Elite has many variations that require operators to use valuable training time to learn those variations. This would not be the case if all apparatus were manufactured by the same company and of like - kind. This variation also increases risk on the fire ground and is viewed as a safety concern.

The committee feels that by selling the Elite now, the Department can maximize the potential for resale while eliminating the potential exposure for future excessive maintenance costs.

**Recommendation 4: Replace pumpers 9321 and 9322 with matching pumpers.**

As our community and response areas grow, the committee recognizes the need for our fire department to grow and diversify to meet the future response needs set before us.

When evaluating the services that the department currently provides, the committee recognized that over the past 10 years, a considerable amount of time and budget has been spent on specialty areas of rescue. These specialties include rope rescue, water rescue, collapse rescue, trench rescue and confined space rescue.

While having the additional expertise is beneficial and useful, the current housing of the equipment that complements the knowledge is not immediately accessible because it is not stored on any staffed apparatus. If a call for a specialized rescue were to come in, personnel are required to switch vehicles before a response begins causing delays in service. If crews are not in station when the call comes in, the service is delayed even further.

To address this issue, the committee recommends replacing 9321 and 9322 with pumpers that have larger amounts of storage space. This would allow for the Appleton Fire Department to start transitioning some of our specialized equipment to frontline staffed apparatus based on current needs; thus, enhancing the current level of service. Additionally, the equipment would be more accessible to those assigned to the rig allowing for more hands-on time leading to increased proficiency with the equipment.

The committee conducted some research on available apparatus designs and found that the Pierce Ultimate Configuration (PUC) models built by Pierce offered increased storage capacity with the potential of a shorter wheel base than our current rescue pumper. The committee was able to tour the manufacturing facility and get a closer look at the options on these models. The committee feels that the PUC design should be strongly considered for all pump-equipped vehicles when designing future apparatus for the Appleton Fire Department. Additionally, the committee believes the department should continue to strive to purchase like-kind apparatus for our standard engines.

The committee considered the option of utilizing a light rescue for specialized equipment in place of the PUC option. In this scenario, the light rescue would provide the response capacity that the rescue pumper now serves while also having the ability to transport the specialized rescue equipment. The six engine companies on the department would all be standardized. This option posed issues as follows:

- **Staffing.** As stated earlier in this report, an increase of staffing levels is currently not possible. This leaves the shift inspector as the likely person to be assigned to the vehicle or to move to a cross-staffing matrix. The committee did not feel that either option was acceptable. Having the shift inspectors on the vehicle alone leaves the equipment unattended and unsecured for extended periods. Additionally, the checks on the equipment would likely cut into the time the shift inspectors spend on inspections, pre-plans, and investigations. The committee felt that cross-staffing the unit would be a step backwards. The goal of the recommendation was to enhance service by providing additional equipment to trained personnel. Cross-staffing in this scenario further segregates equipment giving responders less on scene.
- **Efficiency and cost.** The use of current light rescue would likely have an impact on the current set-up of the 9371. As it stands, 9371 serves as a self-sustained investigation vehicle which allows for engine companies to clear fire scenes earlier and get back into ready status. In order to maintain this level of efficiency, a different vehicle would have to be attained at an unknown cost.

**Recommendation 5: Change the replacement schedule to incorporate a scoring system that evaluates apparatus based on usage, condition, and maintenance.**

Currently, the Department does not have a consistent model for the replacement of apparatus. Although budget dollars are appropriated and credited to the Central Equipment Agency (CEA) account annually for replacement of each vehicle, not all apparatus are on the same replacement schedule. Some were placed on a 15-year replacement schedule, while others were placed on a 20-year schedule, creating a situation where multiple vehicles will be due for replacement at virtually the same time. This

method, regardless of the number of years assigned for amortization purposes, gives no consideration to the condition, value, or reliability of a particular piece of apparatus.

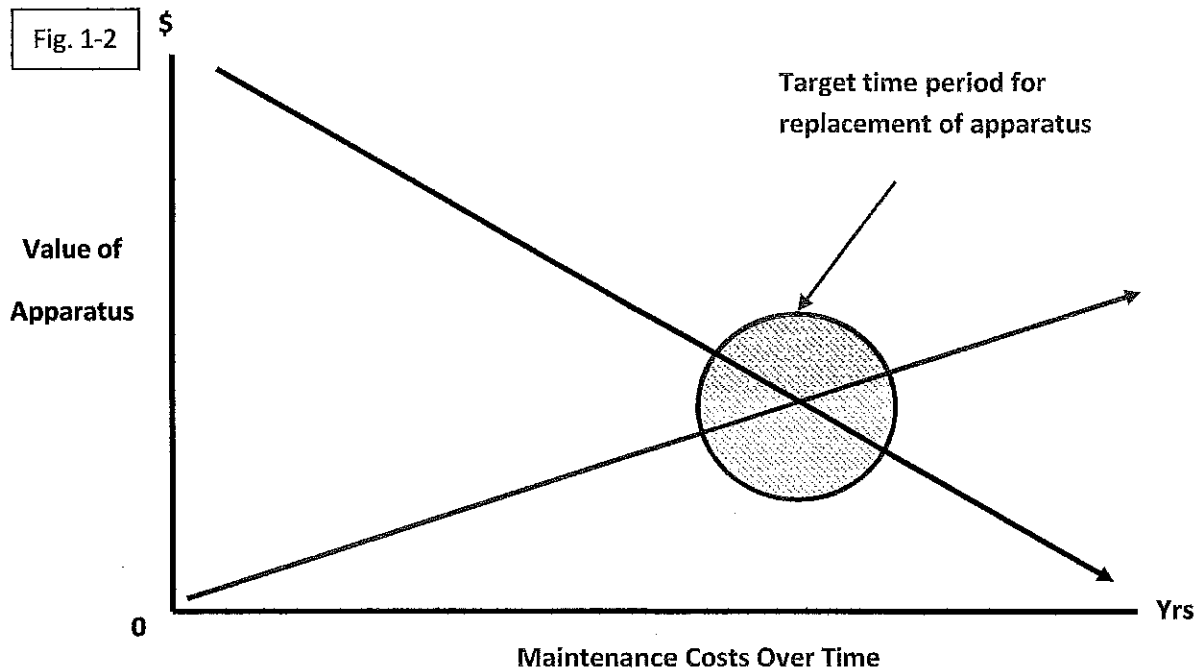
A major factor that is contributing to the wear on apparatus is call volume in the City. In 1998, the Appleton Fire Department began providing Emergency Medical Service (EMS) care at the First Responder level. Prior to this change, in the 10-year period from 1988 to 1997, the department averaged 1,215 calls per year. In the 14 full years since the implementation, annual call volume has increased to an average of 3,250 calls per year. In the last four years alone, the department's call volume has increased to an average of 3,668 calls per year. More service calls directly increases the mileage and wear and tear on the apparatus. This increase is having a negative impact on resale value and is also increasing the maintenance costs as the fleet ages.

The committee found that all other vehicles in the CEA program use a scoring system, not a random amortization, to determine when a vehicle should be replaced. This scoring system has been designed to consider cars differently than dump trucks, and scores the particular vehicle accordingly. Over time, this system has allowed managers to accurately determine a vehicle's average useful life; thus, setting the amortization and CEA funding accordingly.

With the help of Bruce Brazee, Fleet Operations Foreman, and by using this existing scoring system, the committee has developed a scoring sheet, specific to fire apparatus, which more accurately grades apparatus and gives a score to determine when a front-line apparatus needs to be replaced. Additionally, the scoring system aims to replace a piece of apparatus at a more favorable time, as depicted in Figure 1-2. By using the scoring system, the department will be able to maximize trade-in value and minimize the increasing maintenance costs. In theory, the scoring system shifts funds currently being spent on an aging fleet to newer more reliable apparatus that have up-to-date safety features.

An additional benefit to the scoring system is it will allow for department managers to annually evaluate the health of a particular piece of apparatus. If one vehicle is scoring higher than another, managers could opt to swap a like-kind apparatus from a district that has an apparatus with a lower score in an effort to extend the life of the fleet.

The committee also recommends that CEA institute a shorter amortization schedule immediately in order to appropriately fund the replacement of fire apparatus.



**Recommendation 6: Enter a single source contract with Pierce Manufacturing for the purchase of future apparatus.**

The committee recognized several advantages to entering a single source contract with Pierce Manufacturing as the sole provider for the department. Some of these advantages have been touched on in previous recommendations. The benefits are listed below:

1. Employees are familiar with the equipment configuration of Pierce apparatus. This familiarization will lead to greater efficiency in training, increase proficiency of operators, and increase safety on fire scenes by reducing the potential for delays due to differences in equipment.
2. Having like-kind apparatus allows for the FD mechanic to become more familiar with the equipment, maintain stock replacement parts, and reduce downtime.
3. Like – kind apparatus in the fleet will allow for flexibility in managing mileage and wear and tear, potentially extending the useful life of the fleet.
4. A contract will result in lower pricing of apparatus, shorter delivery cycles, and assistance in maximizing the resale of existing apparatus.

**Conclusion:**

Based on the above-mentioned recommendations, the members of the Apparatus Committee along with the members of the Appleton Fire Department, urge the members of the Safety and Licensing Committee along with the members of the Common Council to please consider and support these recommendations during budget deliberations for 2015.