

Title: Greenview Fire-Rescue Services Apparatus and Equipment Replacement

Policy No: 3021

Effective Date: March 9, 2021

Motion Number: 21.03.092

Supersedes Policy No:

Review Date: March 9, 2024



Purpose: The purpose of this policy is to establish a scheduled apparatus replacement plan, which improves the process of apparatus replacement and allows for planning of funding sources. The goal of this plan is to ensure that heavy fire apparatus are replaced when necessary to maintain a safe, reliable, and innovative fleet and do so in a cost-efficient manner. And this policy ensures Greenview is compliant with NFPA guidelines, OH&S guidelines, Alberta Transport Legislation, and Greenview policies.

1. DEFINITIONS

- 1.1 Class A Pumper** means an apparatus meeting that criterion for a pumper truck that can be used to fight fires in structures or other types of fires requiring larger volumes of water.
- 1.2 Commercial Chassis** means a chassis constructed for several different uses. i.e. Freightliner Etc.
- 1.3 Custom Chassis** means a chassis constructed by a specialty manufacturer for the sole purpose of use in the Fire Service. i.e. Spartan, Pierce, Rosenbauer, E-One etc.
- 1.4 FAMA** means Fire Apparatus Manufacturer's Association.
- 1.5 Fire Apparatus** means vehicles of varying types and sizes that fulfil different roles or functions during fire and rescue operations.
- 1.6 FUS** means Fire Underwriters Survey; Administered by SCM Risk Management Services. Provides information on Fire Departments in Canada to the Insurance Industry, to help set ratepayer insurance rates. They develop recommended Standards for Municipalities and Industry to follow.
- 1.7 GPM** means the amount of water flow volume capability of a particular pump installed on an apparatus.
- 1.8 Greenview** means the Municipal District of Greenview No. 16.
- 1.9 Life Cycle** means the useful life of an apparatus based on the average years, engine hours, and mileage before the repair and maintenance to operate the equipment becomes cost prohibitive.

- 1.10 Light/Medium Duty** means vehicles with a gross vehicle weight of less than 8,500 lbs, including SUV's, minivans, ½ ton trucks.
- 1.11 Tender** means an apparatus that supplies water to other trucks or drop tanks during fire operations. If provided with a pump, this type of truck usually does not have high volume pumps.
- 1.12 Tender/Pumper** means an apparatus that supplies water to other trucks or drop tanks during fire operations. However, the pumps are usually large enough that the truck could be used to fight fires just as you would be able to with a Class A Pumper. These trucks could have access issues due to the weight of the truck where a Class A Pumper would work better. It is recommended this type of truck be purchased versus just a standard Tender due to its versatility and ability to support other pumpers with water supply.
- 1.13 Wet Rescue Class A Pumper** means a specially designed fire apparatus that is used for multi-operations including fire suppression, vehicle extrications and other light rescue operations. It reduces the need to have multiple trucks responding on certain calls reducing cost ultimately for a department.
- 1.14 Brush Truck** means a smaller fire vehicle that is used for woods and brush fires. They are much lighter than larger apparatus and can access areas much easier than larger apparatus. They carry smaller high pressure pumps and less water, but are a very effective tool, especially in this area due to the terrain encountered during fires.
- 1.15 Rescue** means different styles of trucks used in various rescue operations. These operations can include vehicle accident extrication, building collapse, confined space rescues and other specialized rescue operations.
- 1.16 Utility/Support Units** means different styles of trucks used in various ways to assist prior to, during, and after emergencies. They may carry equipment, supplies and personnel for emergency operations. They also are used to pull trailers and other devices.
- 1.17 Support Unit** means This term is used to describe various styles of vehicles used to provide support during an emergency. The vehicles can range from automobiles, trucks to tractors. Most of the uses for this plan are for providing transportation for personnel to emergencies, training and mutual aid.
- 1.18 NFPA** means The National Fire Protection Association (NFPA) is a non-profit organization that utilizes its membership to develop standards for fire and life safety. The document includes standards for the construction and safety features used on fire apparatus and other equipment used by the fire service. NFPA also covers thousands of other standards that relate to fire and life safety. These standards are generally the nationally accepted standards and processes and can be legally binding in certain situations.

- 1.19 NFPA 1901** means Standard for Firefighting Vehicles, Automotive Fire Apparatus, Wildland Fire Apparatus, and Automotive Ambulances.
- 1.20 NFPA 1911** means Standard for the Inspection, Maintenance, Testing, and Retirement of in-service Emergency Vehicles.
- 1.21 NFPA 1915** means Standard for Fire Apparatus Preventive Maintenance Program.
- 1.22 ISO** means the Insurance Service Office/Commercial Risk Services is an organization that generally rates communities on their ability to provide a level of fire protection. The rating for many residential properties can affect the amount of insurance paid by a home owner in a coverage area. For the purposes of this document, this process only considered that we maintain the current ISO ratings in each fire response area. However, older apparatus that fall within the replacement recommendation of NFPA may receive deficiency points for future ISO ratings if not replaced.

2. POLICY

- 2.1 To maximize fire fighter capabilities in using fire apparatus and to minimize the risk of injuries, it is important that fire apparatus be equipped with the latest safety features and operating capabilities. In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus.
- 2.2 It is a generally accepted fact that fire apparatus, like all types of mechanical devices, have a finite life. The length of that life depends on many factors, including vehicle mileage and engine hours, quality of the preventative maintenance program, quality of the driver training program, whether the fire apparatus was used within the design parameters, whether the apparatus was manufactured on a custom or commercial chassis, quality of workmanship by the original manufacturer, quality of the components used, and availability of replacement parts, to name a few. In the fire service, there are at times fire apparatus with 8 to 10 years of service that are simply worn out. There are also fire apparatus that were manufactured with quality components, that have had excellent maintenance, and that have responded to a minimum number of incidents that are still in serviceable condition after 20 years.
- 2.3 In accordance with NFPA 1915, the factors influencing apparatus replacement are:
- A. Age;
 - B. Engine Hours;
 - C. Kilometres;
 - D. Downtime and maintenance and repair costs;
 - E. Life cycle and resale value; and
 - F. Whether the apparatus meets all present 1911 safety standards.
- 2.4 Regular replacement of fire apparatus helps maintain the health and safety of firefighters and the public, while ensuring the prudent use of ratepayer funding. Life cycles must be developed with the goal of minimizing overall fleet costs, maximizing vehicle availability, and providing firefighters with safe and reliable units to perform their job functions

3. METHOD

- 3.1 Greenview recognises the standards and guidelines set by the NFPA as the accepted standards as they relate to fire and life safety.
- 3.2 The preventative maintenance and equipment replacement of Greenview Fire Services apparatus are aligned with the following NFPA standards:
 - A. NFPA 1901: Standard for Firefighting Vehicles, Automotive Fire Apparatus, Wildland Fire Apparatus, and Automotive Ambulances;
 - B. NFPA 1911: Standard for the Inspection, maintenance, Testing, and Retirement of in-service Emergency Vehicles; and
 - C. NFPA 1915: Standard for Fire Apparatus Preventative Maintenance Program.
- 3.3 Apparatus replacement will also be evaluated on life cycles. Fleet unit life cycles are based on the best practice method recommended by industry standards. The overall goal is to replace vehicles at the lowest life cycle cost before the operating cost exceeds vehicle capital.
- 3.4 In circumstances where an apparatus becomes cost prohibitive to maintain or operate, before the end of its established life cycle, it may be considered for early replacement.
- 3.5 Upon review, if a vehicle or piece of equipment has continually performed at a high level, with a satisfactory maintenance and repair record, that vehicle or piece of equipment may be considered for a life cycle extension.

5. RECOMMENDATIONS FOR APPARATUS REPLACEMENT

NFPA 1915: Standard for Fire Apparatus Preventive Maintenance Program

Excellent Condition:

- Fewer than five years old.
- Fewer than 800 engine hours.
- Fewer than 25,000 kms if not used in stationary applications.
- No known mechanical defects.
- Very short downtime and very little operating expense.
- Excellent parts availability.
- Very good resale value.
- Meets all present NFPA 1911 safety standards.

Very Good Condition:

- More than five but fewer than 10 years old.
- More than 800 but fewer than 1,600 engine hours.
- More than 25,000 but fewer than 50,000 kms if not used in stationary applications.
- No known mechanical or suspension defects present.
- Short downtime and above average operating costs.
- Good parts availability.
- Good resale value.
- Meets NFPA 1911 safety standards.

Good Condition:

- More than 10 years but less than 15 years old.

- Some rust or damage to the body or cab.
- More than 1,600 but fewer than 2,400 engine hours.
- Some existing mechanical or suspension repairs necessary.
- Downtime and operational costs are beginning to increase but not terribly above the average.
- Parts are still available but getting difficult to find.
- Resale value decreasing.
- Meets all NFPA 1911 safety standards.

Fair Condition:

- More than 15 but fewer than 20 years old.
- Rust, corrosion, or body damage apparent on body or cab.
- More than 2,400 engine hours.
- More than 75,000 but fewer than 100,000 kms if not used in stationary applications.
- Existing mechanical or suspension repairs necessary.
- Downtime is increasing, and operational costs are above the historical average.
- Parts are becoming harder to find and/or obsolete.
- Very little resale value.
- Does not meet all NFPA 1911 safety standards.

Poor Condition:

- More than 20 years old.
- Rust, corrosion, or damage to the body of cab impacting apparatus use.
- More than 2,400 engine hours or 100,000 kms.
- Existing mechanical or suspension problems affecting the apparatus operation.
- Downtime is exceeding in-service availability.
- Operational costs are exceeding the resale value of the apparatus.
- Parts are obsolete.
- Does not meet all NFPA 1911 safety standards.

6. RECOMMENDATIONS FOR FIREFIGHTING EQUIPMENT REPLACEMENT

6.1 Self-Contained Breathing Apparatus (SCBA) will be replaced as per NFPA 1852 standard.

6.2 Firefighting bunker gear will be replaced as per NFPA 1851 standard.

6.3 All other firefighting equipment will be annually inspected and examined to ensure compliance with the manufacturer's standards. It will be replaced on an as needed basis.

7. LIGHT-MEDIUM DUTY VEHICLES

7.1 Light and medium duty vehicles will be evaluated for replacement in accordance with Policy 4006 Vehicle and Equipment Replacement.

VEHICLE/EQUIPMENT TYPE	TIME IN SERVICE (years/kms)
Light/Medium Duty Vehicles	10 years/ 200,000 kms
Medium Duty Diesel Vehicles	10 years/ 300,000 kms
ATVs/UTVs	15 years