

Presented To:	City Council
Presented:	Wednesday, Sep 23, 2009
Report Date	Friday, Sep 18, 2009
Туре:	Managers' Reports

Request for Decision

Emergency Pumper Replacement

Recommendation

That Council adopt the Fire Chief's report and recommendation dated September 18th, 2009.

Finance Implications

The purchase of the two pumpers for delivery in 2010 will be funded from the 2010 and 2011 capital envelopes as identified in the 2009 - 2011 Capital Budget submitted to Council in 2008.

If approved, a funding source for the purchase of three pumpers in the estimated amount of \$1.5 million will be identified during the 2010 Capital Budget deliberations. Funding sources may include the Provincial Grant - Investing in Ontario, capital envelopes, or reserves.

Signed By

Report Prepared By Marc Leduc Fire Chief. Digitally Signed Sep 18, 09

Recommended by the Department Marc Leduc Fire Chief. Digitally Signed Sep 18, 09

Recommended by the C.A.O. Doug Nadorozny Chief Administrative Officer Digitally Signed Sep 18, 09

GREATER SUDBURY FIRE SERVICE

EMERGENCY PUMPER REPLACEMENT

Fire Services is currently experiencing a pumper shortage. Since amalgamation there have been three reserve pumpers to replace our twenty-two front line pumpers that required servicing or that are in the shop for breakdowns and/or repairs. Unfortunately, three of our pumpers are presently out of service with serious frame problems. The three pumpers in question are:

1. Pumper 26 (1988 Pierce):

This reserve pumper is 21 years old. Upon the last inspection, the frame was determined to be rusted and has eroded to approximately one third of the original thickness. This was discovered as a result of new departmental procedures which include pressure washing the underbody and frame. During pressure washing, layers of rust/corrosion were dislodged thus raising concern on the condition of the frame. The thickness of the frame was determined by ultra sound testing. This pumper cannot be repaired and has been permanently taken out of service.

2. Pumper 2 (1998 Almont):

This front line pumper is 11 years old and it has a bent frame. The frame is not repairable. In order for the pumper to be repaired the frame would need to be replaced. The cost to replace the frame could range from \$80,000.00 to \$100,000.00. The replacement, if feasible could take as long as 3 months. Only after reviewing all costing will it be determined if it is feasible to repair and return the unit to service.

3. Pumper 3 (1999 Almont):

This front line pumper is 10 years old and it has a cracked frame. The frame will be welded to meet Ministry of Transport requirements. Once repaired, the frame will require regular inspection. Any subsequent damage to the frame will require the entire frame to be replaced. This repair should last for 4 or 5 years depending on usage. The cost of repairs will be approximately \$10,000.00. In order to maintain good customer relations the manufacturer of the frame has agreed to cover this cost.

Note: The Ministry of Transportation Vehicle Safety Standards, Schedule 1, section 11.1 states that "a damaged frame or cargo body is to be removed from service". Section 11.2 states a "visibly shifted, cracked, collapsing or sagging frame is to be removed from service".

As a result, pumpers # 2, 3, and 26 have been removed from service.

Fire Services has consulted with the City's Legal Division to pursue any warranty that may apply for pumper 2. The warranty documentation does not provide any leverage to exert a claim. However, we will continue dialog with the frame/chassis manufacturer to achieve a satisfactory resolve.

OTHER SIMILAR PUMPERS AND POTENTIAL PROBLEMS

1. Pumper 27, 1988 and Pumper 5, 1989:

These two pumpers are the same make and model as pumper #26. A preliminary inspection on pumper # 5 found heavy corrosion on the frame at the rear axle. Both pumpers # 5 and # 27 will have their frames ultra sounded for thickness in the coming weeks. If it is determined that these frames do not meet the Ministry of Transportation requirements, these units will be permanently removed from service.

Note: Ultra sound thickness testing is not a regular procedure of our inspection process. This testing was only performed because of concerns raised during inspection and pressure washing of the frames.

2. Pumper 4 (1997 Almont):

This pumper is of the same make and model as pumpers # 2 and # 3. It has been inspected and no defects were found in the frame at this time. This pumper will be monitored on a regular basis.

FACTORS AFFECTING THE STATUS OF THE PUMPER FLEET

1. Aging fleet:

The average age of our 22 pumpers is currently 13.45 years old with 7 units over 20 years old.

2. Lack of capital funding:

The Fire Services' capital funding levels have not been sufficient to allow for the adequate replacement of fire equipment and fleet. In 2004, the Master Fire Plan recognized fleet replacement had annual capital shortfall of \$1.2 million. The figures below indicate the Fire Service budget available to purchase all required capital including the cost of fleet replacement.

2005	\$305,120.00
2006	\$198,531.00
2007	\$1,122,319.00
2008	\$594,156.00 ²
2009	\$838,558.00

Notes:

- 1. In 2007, \$527,000 in one time funding is included from the Master Fire Plan
- 2. In 2008, an additional funding allocation of \$200,000 was approved by Council

Recently the Finance Division in conjunction with Fire have inventoried and valued all Capital Assets maintain by Fire Services. The annual replacement value is estimated to be approximately \$1.6 million, which is well short of the annual Capital Envelope of \$855,000 for 2010.

3. Not enough reserve pumpers in the fleet:

The Master Fire Plan recognized that Fire Service should increase the number of reserve pumpers from three to five.

Fire Services operates from 25 fire stations throughout the community which is divided into 5 fire districts. In order to adequately facilitate the temporary replacement of pumpers during breakdowns or servicing, we require 1 reserve pumper per district. This increase would give us a ratio of 4 to 5 front line pumpers for every 1 reserve pumper. The current ratio is 8 front line pumpers to every 1 reserve pumper.

Increasing the number of reserve pumpers lessens the burden on these older reserve pumpers and decreases the possibility of a pumper shortage.

- 4. Road conditions and salt
- 5. Unforeseen frame problems with pumpers 2 and 3 (As noted above at the beginning of the report):

Because of the relatively young age of these two units, these failures were completely unforeseen since the units are only 10 and 11 years old.

Frame and chassis specification changes, enhanced maintenance and inspection programs should help mitigate future problems of this nature.

EFFECTS ON RUNNING PROCEDURES

As spare pumpers are not available to replace units out of service the status of fire protection diminishes for the affected community by way of increased response times for the first arriving pumper. Our temporary response procedures are designed to reduce the impact.

Note: Firefighters and firefighting apparatus (non-pumpers) are still maintained within the affected communities.

Until the number of available pumpers is increased, the running procedures have been temporarily altered to accommodate the shortage. This means that on occasion, some fire stations will not have a pumper.

In circumstances when a station is left without a pumper due to breakdowns, servicing, or transfer to an alternate station, the Firefighters from the affected station will respond with other apparatus (tankers). Pumpers will also respond from neighbouring fire stations. This will have an impact on response times. Unfortunately, the level of service will be diminished until the situation is corrected.

Note: The following procedures will be implemented as necessary when repairs and/or maintenance are required. The procedures to be used will be dependent upon the situation that occurs, keeping public protection at the forefront. Response times and the next closest available responding station(s) were taken into consideration.

Examples: (These procedures are subject to change upon operational requirements)

Within district 1: When a pumper is taken from service, we will remove aerial 1 from aerial response status and implement it as a pumper. We will also place a reserve aerial into service to provide aerial response.

Within districts 1 to 5:

When one front line pumper is taken out of service, we will reposition the pumper from Coniston to the designated station. The Minnow Lake and Wahnapitae stations will provide pumper response to Coniston.

When two front line pumpers are taken out of service, we will reposition the pumper from Black Lake Road in Waters to the designated station. The Lively and Copper Cliff stations will provide pumper response to the Waters area.

When three front line pumpers are taken out of service, we will reposition the pumper from Val Caron to the designated station. The Val Therese and the Hanmer stations will provide pumper response to the Val Caron area.

CURRENT PUMPER FLEET (listed by age)

Note: The shaded area identifies equipment with high risk of failure. Eight of the current pumpers are 20 years old or older.

1.	Pumper # 25	1983	Red Deer Lake Rd
2.	Pumper # 18	1986	Capreol
3.	Pumper # 28	1987	Reserve
4.	Pumper # 21	1987	Falconbridge
5.	Pumper # 22	1987	Skead
6.	Pumper # 26	1988	Reserve (out of service rusted frame)
7.	Pumper # 27	1988	Reserve (same model as pumper 26)
8.	Pumper # 5	1989	Copper Cliff (same model as pumper 26)
9.	Pumper # 10	1993	Azilda
10.	Pumper # 7	1995	Lively
11.	Pumper # 15	1995	Val Caron
12.	Pumper # 4	1997	Long Lake Rd (same model as pumpers 2 & 3)
13.	Pumper # 20	1997	Garson
14.	Pumper # 2	1998	Minnow Lake (out of service bent frame)
15.	Pumper # 3	1999	New Sudbury (out of service cracked frame)
16.	Pumper # 23	1999	Coniston
17.	Pumper # 17	1999	Hanmer
18.	Pumper #13	1999	Vermillion Lake
19.	Pumper # 24	2003	Wahnapitae
20.	Pumper # 8	2003	Whitefish
21.	Pumper # 12	2003	Dowling
22.	Pumper # 14	2006	Levack
23.	Pumper # 1	2008	Van Horne

The fire stations in Chelmsford, Val Therese, and Black Lake Road in Lively are serviced with 75' aerials which respond as pumpers. Taking these three aerials into account, Fire Services maintains a total of 22 front line pumpers with 3 reserve pumpers to cover for servicing and breakdowns.

APPARATUS LIFE EXPECTANCY

The life expectancy of fire apparatus is directly related to its routine workload and preventative maintenance program. Apparatus life expectancy can vary depending upon call volume and workload, but industry best practice considers a life expectancy of 15 years for a front line apparatus. Fire Departments with large call volumes schedule apparatus replacements with 10 to15 years of service.

Generally a piece of apparatus is downgraded to a secondary response status when it has reached or exceeded its front line response expectancy. For example; a 15-year old Pumper may still function as a pumper but due to its age, it is placed in a lower response station or maintained as a reserve pumper.

Adopting a 15-year replacement cycle for pumpers would allow the department to downgrade apparatus to a lower response mode for 5 years and a reserve status for a 5 to 10 year period based upon the condition of the truck. Industry best practices do not recommend a vehicle be in service for longer than 20 years.

For example, the City of Kitchener has a fifteen year replacement policy. They operate pumpers for 9 years in a front line status and then downgraded them to reserve status for 6 years.

FUTURE CONSIDERATIONS

Fire apparatus is a major investment for the community and replacement must be thoroughly researched to ensure a maximum life expectancy will be achieved. Apparatus requirements must be critically analyzed to ensure that the department receives the best piece of apparatus that meet the needs of the department today and in the future.

The department is the process of conducting a fleet rationalization study. The purpose of this study is to:

- 1. Analyze the existing fleet.
- 2. Review the existing fleet replacement plan and modify as necessary.
- 3. Establish a Fleet Vehicle Financial Plan.
- 4. Demonstrate to City Council and the community that the fire department is managing the fleet in a business fashion and demonstrating fiscal responsibility.
- 5. Provide City Council information on apparatus and vehicle functions.

ACTION REQUIRED

As a result of the current shortage, the remaining older pumpers will not sustain a prolonged, heavier workload while being used in busier stations to cover for units that have failed. This could lead to further serious breakdowns and jeopardize response times throughout the community. The department must replace pumpers as soon as possible to ensure that each fire station in the City has the required equipment to provide adequate fire protection and to avoid further deterioration of the fleet.

REPLACEMENT OPTIONS

1. Purchase of custom pumpers:

Custom pumpers require approximately one year for delivery from time of purchase. This option although recommended, will not in itself rectify the immediate needs.

2. The purchase of used or refurbished pumpers:

This option is difficult to fulfill and risky at best. Suitable apparatus is not widely available in Canada. American markets offer used/refurbished units, however the American dollar value as well as required modifications for our use makes this option impractical.

We researched the availability of used pumpers from vendors in both Canada and the United States. No suitable trucks were available in Canada, although, units were available in the United States. Most of these units have high mileage and usage, and do not suit our needs. The costs of these American units are relatively high, for example, a 10 year old pumper with high usage, costs from \$80,000.00 to \$120,000.00 (US currency). These units require considerable modification for our use (winter package, all gauges, fittings and plates changed to metric). Warranty and service are also an issue. We do not recommend this option.

In early September, we inspected four used pumpers from the City of Kitchener that included 2 - 1995 pumpers and 2 - 1992 pumpers. The units were worn out. They had cracked sub frames, heavily worn motors, and damaged transmissions, therefore they were not considered as a replacement option.

3. The purchase of in stock (available now) pumpers:

The market is such that suitably priced units meeting our general needs can be purchased. New and/or demo model stock pumpers are available

with custom cabs (cab-over). Custom cabs are preferable as they provide increased maneuverability necessary in urban settings. This option in combination with the purchase of custom pumpers (replacement option 1) is recommended.

FUNDING

RECOMMENDATIONS

- 1. That City Council approves the purchase of two custom pumpers to be funded from the Fire Services' 2010 and 2011 capital funding envelope for delivery in 2010.
- 2. That City Council approves the emergency purchase of three stock pumpers with custom cabs at a cost of no greater than \$ 1,500,000.00 for immediate delivery.
- 3. That the Fire Chief report back to City Council within 60 days on the status of pumpers 2, 5, and 27 and provide any further recommendations with associated costs as may be required to mitigate the potential continued shortage of pumpers.
- 4. That an RFP be prepared to hire an external Consultant to assist Fire Services Management with the development of a fleet management plan.

Note: Council approved the purchase of a custom pumper from the 2009 capital envelope. The delivery of this pumper is expected in July 2010. With the approval of recommendations # 1 and # 2 the Department would have six new pumpers within 12 months.

Further capital planning will need to be presented to Council to balance additional capital equipment requirements.