

City Council Workshop

March 11, 2021

Agenda

6:00 p.m. **Call to Order**
 Pledge of Allegiance
 Roll Call
 Approval of Agenda

I. Presentation- Fire Department 2021-2022 Aerial Ladder Replacement Presentation

II. Public comment

III. Adjournment

Please see reverse side for rules of conduct for public comment at City Council meetings



SOUTH LYON FIRE DEPARTMENT 2021-2022 AERIAL LADDER REPLACEMENT PROJECT

March 4, 2021



Prepared by: Deputy Chief Michael Weir

INTENT

The South Lyon Fire Department has begun preparations and planning to replace our existing aerial ladder truck known as “Ladder 7-1” This apparatus is a 95’ mid-mount 2000 KME Aerial Cat. The apparatus began as a demo truck for KME and prior to being purchased by South Lyon, toured the country. South Lyon purchased the apparatus, and it has been a frontline responding piece since. The National Fire Protection Association (NFPA) 1901, recommends that any truck over 20 years old that will see no value from upgrading, after 25 Years of service should be retired. This number is a maximum and not necessarily realistic based on several factors. The annual cost of repairs, the capability of the equipment, down time incurred and key performance metrics through professional testing. I believe that this apparatus has surpassed its serviceable life and its replacement should be ordered in 2021. This would likely place the in-service date of a replacement aerial apparatus sometime in 2022 Our goal is to order the apparatus in July 2021 with and delivery date after July 1, 2022. Speaking with the manufacturer, they would be able to provide a better estimate of the anticipated arrival date when the order is placed as factors such as Covid, material availability and current orders in progress are all unknowns at this point. It is the intent of the South Lyon Fire Department to complete and present a final proposal for city council approval in 2021 for the purchase of a new mid-mount aerial platform apparatus. This packet shall serve as an informational document to aid council in their decision to approve or deny the requested replacement purchase.

HISTORY

The current apparatus has experienced numerous mechanical and component failures over the past few years. Major issues causing downtime have included hydraulic line failures and leaks, and Underwriters Laboratories (UL) ladder testing failure. In 2020 the truck failed the drift test as performed by UL. SLFD not only had to pay for repairs, but for additional testing to be completed in order to recertify the aerial device for service. To date, only about one half of the hydraulic lines have been replaced. It is anticipated that the additional lines will continue to fail causing additional downtime and repair costs for a truck that should be retired in the next four years. Other areas of concern include: the outdated electronic valve controllers on the pump panel, failure of the existing electronic valves and assemblies within the pump and plumbing, the electronic master stream device; as well as engine maintenance and lighting throughout the vehicle. Additionally, the apparatus is facing corrosion issues that will become a larger concern as time goes on.

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NEEDS

The City of South Lyon Fire Department utilizes an aerial ladder truck during structural firefighting emergencies, confined space rescue and/or standbys for the wastewater and DPW, as well as specialized rescue and emergency response incidents such as ice rescue. Having a properly equipped and functioning aerial apparatus is also an integral component to maintaining the city's Insurance Services Office (ISO) rating of a 3. This maintains a reduced cost to city resident's homeowner's insurance based on the fire department's ability to respond to and extinguish fires. The current aerial apparatus has experienced significant downtime due to mechanical repairs and failures which has severely limited its availability to respond to emergencies. Additionally, there are outstanding repairs that have been put on hold in an effort to save taxpayer funds with the hopes of apparatus replacement. Of those the major repair is the on-board generator estimated at \$7,500.00. The city has several structures taller than two stories as well as a significant number of commercial buildings that, if involved in a fire emergency would benefit from the use of an aerial device. The height capability of the ladder is just as important as its ability for horizontal work. This permits aerial device use when the buildings setbacks are deep, or a large area of structure needs to be accessed by an aerial ladder. In residential applications, the many apartment complexes; along with subdivisions that contain larger homes like Carriage Trace, are prime candidates for the use of an aerial ladder during structural firefighting. In commercial applications, the use of an aerial ladder to aid in fire suppression from an elevated platform is invaluable. One of the more notable examples would be the Pullum window fire that occurred on December 22, 2014 (Pictured below). Currently, SLFD houses and utilizes one of the only ladder trucks in the area. Lyon Township and Salem Township do not currently have a ladder truck. Green Oak Township does have a ladder truck; however, it is housed at Station 81 located at Silver Lake Rd. and Old US-23 and does not typically respond into South Lyon until a 2nd alarm is struck. The next due aerial apparatus' respond from Wixom, Northfield Township, Milford, and Brighton. Our ability to quickly and effectively arrive on scene with our own aerial and properly position it for maximum operational effectiveness is paramount to our continued success and functionality as an aggressive and efficient fire department. The ladder does respond outside of the community for mutual aid requests. In 2019 and 2020 the ladder has left the city a total 16 times and the aerial devise has been utilized six of those sixteen times.



Ladder 7-1 operating at the Pullum Window fire. December 22, 2014

STATS

- 2000 KME mid-mount Aerial Cat platform
- Current mileage: 35,211
- Current engine hours: 3,309
- Estimated downtime from January 1st 2019 – December 29, 2020. Approximately 150 days
- 2019 repairs including parts and labor: \$6,975.75
- 2020 repairs including parts and labor: \$12,393.34
- Estimated repairs outstanding: Unknown, currently repairing on an as needed basis to maintain functionality with the exception of the PTO generator. Estimated cost for repair is \$7500
- In 2015, SLFD began exploring the potential to send our current aerial apparatus out for an upgrade in order to extend its serviceable life. Estimates for this to be completed through the manufacturer came in at \$372,716.00 on November 28, 2017. It was ultimately decided that this was not the best option for the city and the upgrade project was scrapped. This is no longer considered a viable option for SLFD as this would only extend the life of the vehicle for a short period of time (3 years). This option would have made more sense if it was completed years ago and we would still push to follow NFPA and end service at the 25-year mark. Had we completed the upgrades we likely could have pushed the apparatus to the 30-year mark. At this point the amount of money it would cost to upgrade the ladder would undoubtedly be higher than this original estimate and could potentially add 3-5 years of serviceable life.

ITEMS THAT WERE TO BE ADDRESSED IN THE UPGRADE PROPOSAL

CAB & CHASSIS

- Change all emergency, running lights, turn signals, brake lights, and headlights to LED (replace light bar to match 2016 Pierce Saber - Whelan)
- Review suspension front/rear: bushings, pins, etc.
- All new brakes: calipers, chambers, pads
- Replace radiator (new or remanufactured is acceptable)
- Remove rear windows facing turntable
- Driver's side outrigger control door – new door holder
- Remove middle two jump seats – install mounting tray (similar to Engine 7-1)

AERIAL LADDER

- New cables
- New wear pads
- Inspect and repair hydraulics
- Inspect and repair upper & lower controls
- Install rope lighting on aerial ladder (red)
- Replace all flood / work lights with LED heads

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- Inspect and repair all sensors and controls that operate the outriggers & control ladder functions
- Replace electric cables in outriggers
- Remove four red strobe lights under the floor of aerial bucket

PUMP

- Inspect and repair all valves
- Repack pump
- Install new air primer (remove the electric one)
- Remove and replace the electric master stream with a manual one (Akron #3570)
- Pass/side pump area is a compartment – need a webbing door made with seat belt type latch

REPLACEMENT APPARATUS

In September of this year SLFD formed an apparatus replacement committee headed up by Deputy Chief Mike Weir with committee members Captain Cory Armstrong and APO Taylor Buchanan. The height restrictions of our current station; along with the steel ladder requirements, the group started with establishing a maximum overall height of 10' 2". The current overall height of our ladder is 9' 11". The group reached out to manufacturers in order to establish a starting point with manufacturers that could provide the overall height of 10' 2". Those manufacturers were Spartan, KME, Sutphen, Pierce, E One and Rosenbauer. Of those, only one was able to meet the 10' 2" ride height requirement with a steel aerial ladder. Additionally, SLFD is limited to only purchasing a mid-mount aerial apparatus. Rear mount aerials are generally at a lower price point; however, are significantly taller than a mid-mount. SLFD did investigate station modification in order to fit a taller apparatus. A bid proposal was obtained from WILLIS BUILDING CO., INC. The proposal included raising the "old" portion of the bay area roof. This included the 3 apparatus bays that face north and exit onto Whipple street. The cost to raise the roof approximately 48", came in a range from \$260,000 to \$310,000. This would be a significant financial investment for the city and would be cost prohibitive when compared to the cost savings of purchasing a taller mid-mount or rear mount truck. Additionally, SLFD would need to find space to house its entire fleet, along with turnout gear and other miscellaneous equipment for the duration of the roof replacement project as the bay area would be exposed to the elements as well as construction traffic and debris throughout the duration of the proposed project. It is the recommendation of Chief Vogel and I to not raise the roof and proceed with the apparatus as presented which will fit out needs operationally.

- Spartan 10'2"
- KME 10'6"
- Sutphen 10'10"
- Pierce 10'8"
- E One 10'10"
- Rosenbauer 10'8"

Of the manufacturers that responded, Spartan was the only one that had already engineered and manufactured a 10'2" mid-mount steel aerial platform truck. The committee began working with CSI Emergency Apparatus, LLC based in Grayling MI on the specs for a new apparatus. This is the same company that is performing the new box and upgrade work to our Rescue 7-1 apparatus. CSI is a Spartan dealer and has provided us several meetings and is in the process of designing and providing us with an updated spec sheet and drawings. Major points of interest for the new aerial are as follows.

- 100' Mid-mount aerial device with dual water monitors.
- The new aerial apparatus will be upgraded to being medically licensed at the basic life support (BLS) level. Our current ladder is not.
- Significant upgrades in safety systems over our current apparatus
- All LED emergency and scene lighting
- Removal of the PTO generator
- Will meet or exceed current standards for the ISO rating of a ladder company

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We were able to locate some comparable apparatus in the rear mount configuration in order to compare the cost of raising the roof of the station and purchasing a rear mount truck versus not altering the station and moving forward with the purchase of the proposed mid-mount. While these numbers and apparatus are not exact matches to the specific needs of the fire department, they are comparable for the purposes of our cost and benefit analysis.

- Rosenbauer Commander 4-Door Tilt Cab, 100' Mid-Mount Steel Platform \$1,133,134.00
- Rosenbauer Commander, 4-Door Tilt Cab, 100' Rear Mount Platform \$1,265,462.00
- Sutphen SP100, Custom 4-Door Full-Tilt Cab, 100' Mid Mounted Platform
\$1,216,235.30
- Pierce Arrow Chassis, 4-Door Full Tilt cab 100' Mid-Mounted Ladder with Platform
\$1,322,460.00
- Pierce Arrow Chassis, 4-Door Full Tilt cab 100' Rear-Mounted Ladder with Platform
\$1,254,844.00
- Ferrara Inferno, 4-Door Full-Tilt OEM Cab, 100' Mid-Mounted Platform \$1,293,858.00
- E-One Typhoon, 4-Door Full-Tilt cab SM10 100' Mid Mounted Ladder with Platform
\$1,424,375.00

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SUMMARY

It is the intent of the ladder replacement committee and SLFD; upon approval, to purchase a 100' mid-mount aerial platform apparatus to replace the existing 21-year-old KME. SLFD has the intent of purchasing a near manufacturer spec, stock mid-mount truck for the purpose of fire suppression and incident response to the citizens of South Lyon. Keeping in line with the stock specifications will allow the cost to remain as low as possible while obtaining all of the needed equipment and functionality to adequately meet the needs of SLFD and the community. SLFD also intends to request a waive of the competitive bid process due to the inability for any additional manufacturer to meet the overall height and steel ladder material requirement of our specifications and of our facility. As stated above, we intend to apply some modification to the stock specifications. Those modifications include removal of the PTO generator and the addition of an in-cab compartment to house the required medical equipment for this truck to become medically licensed and able to respond to medical emergencies. While we do not yet have a comprehensive cost estimate from CSI, initial projections place the cost of this project in the area of \$1,400,000 to \$1,500,000. The financial information shall be determined through coordination with Patricia Tiernan and other city officials as indicated. This portion of the purchase would commence once SLFD has gathered all necessary information and finalized the project specifications as well as pending city manager and council approval to proceed. At this point SLFD is asking for direction to gage your thoughts on what financial arrangement should be made to move forward with the purchase. This document is only designed to serve as an informational packet to prepare council for the upcoming fiscal year proposals and long-term planning for apparatus replacement. Questions on this packet can be made at the council workshop scheduled for March 11, 2021.

Respectfully Submitted,

Michael Weir
Deputy Fire Chief

FUNDING OPTIONS

Based on the cost estimate of \$1,500,000, the City of South Lyon has three viable options to fund the aerial ladder truck purchase. The following assumptions will be met regardless of the funding option selected by Council:

- \$250,000 down payment due on date of truck order
- Approximate date of truck order – July 1, 2021
- Approximate date of truck delivery – July 1, 2022
- Subsequent payments due annually until final payment

Option A:

Cash purchase using General Fund Non-Restricted funds.

Total cost of aerial ladder truck: \$1,500,000.

Option B:

Municipal Government Lease Purchase through REV Financial Services; financing arm of truck manufacturer. This is a tax-exempt lease purchase with title passing to City upon final payment. Terms of lease may be 5 years, 7 years or 10 years. Recommended course of action is 5-year term lease with an interest rate of 2.29% (available as of March 2021) for annual payments of \$267,434.19.

Total cost of aerial ladder truck: \$1,587,170.95.

Option C:

Installment Purchase Loan through Comerica Bank. This is a tax-exempt installment purchase agreement financed directly through the bank. Terms of agreement for 5 years with an interest rate of 2.4% (available as of March 2021). Estimated annual payments not available until Attorney Opinion Letter and Agreement submitted for review.

Estimated total cost of aerial ladder truck \$1,650,000.

City of South Lyon current long-term debt obligation: \$8,144,799.

Legal Debt Margin as of 6/30/2020: \$46,779,866.

Option	Funding Type	Source	Initial Payment	Initial Payment Date	Order Date	Delivery Date	Terms	Interest Rate	Annual Subsequent Payments	Total Cost of Truck
A	Cash Payment	General Fund	\$ 250,000.00	7/1/2021	7/1/2021	7/1/2022			\$ 1,250,000.00	\$ 1,500,000.00
B	Municipal Lease Purchase	REV Financial Services	\$ 250,000.00	7/1/2021	7/1/2021	7/1/2022	5 years	2.29%	\$ 267,434.19	\$ 1,587,170.95
	Municipal Lease Purchase	REV Financial Services	\$ 250,000.00	7/1/2021	7/1/2021	7/1/2022	7 years	2.39%	\$ 196,045.88	\$ 1,622,321.16
	Municipal Lease Purchase	REV Financial Services	\$ 250,000.00	7/1/2021	7/1/2021	7/1/2022	10 years	2.48%	\$ 142,675.89	\$ 1,676,758.90
	Municipal Lease Purchase	REV Financial Services	\$ 500,000.00	7/1/2021	7/1/2021	7/1/2022	5 years	2.29%	\$ 213,947.37	\$ 1,569,736.75
	Municipal Lease Purchase	REV Financial Services	\$ 500,000.00	7/1/2021	7/1/2021	7/1/2022	7 years	2.39%	\$ 156,836.70	\$ 1,597,856.90
C	Municipal Lease Purchase	REV Financial Services	\$ 500,000.00	7/1/2021	7/1/2021	7/1/2022	10 years	2.48%	\$ 114,140.71	\$ 1,641,407.10
	Installment Purchase Loan	Comerica Bank	\$ 250,000.00	7/1/2021	7/1/2021	7/1/2022	5 years	*2.4%	annual payments based on interest rate not available until attorney agreement drafted	\$ 1,650,000.00

*estimate based on March 1, 2021 contracts