Ladder 14 Justification for Replacement Memo

Aerial Ladder Design and Structural Integrity:

The lightweight design of the 2018 Pierce Enforcer with Ascendant 107' aerial has resulted in lower load-bearing capacity and stability issues. These concerns have been present since day one.

A large crack was discovered in the framework of the lower telescopic fly section of the ladder after a major structure fire, leading to necessary repairs. Though the damage was deemed warranty-related, it raises doubts about the overall structural integrity of the aerial.

Electronic Control and Waterway Monitor Failures:

The waterway monitor has experienced frequent failures, with issues such as miscalibrations and electronic malfunctions.

The elevation motor was replaced after a water intrusion issue during a structure fire, only for the same problem to recur shortly after the apparatus was returned to service.

The monitor's malfunctioning has caused significant downtime and repair costs, including a repair bill of $12,000 for replacing the elevation motor and backup hydraulic control.

The possibility of requiring a full replacement of the monitor, with a cost of over $17,000, further compounds the financial strain.

Ongoing Reliability Concerns:

The apparatus has accumulated over 71,000 miles and 5,400 hours of run time. For perspective, if the engine hours were converted to miles driven, the odometer would read approximately 270,000 miles. While the powertrain and chassis have shown reliability, the aerial ladder's repeated electronic and structural failures suggest potential longer-term risks.

Considering that the production time on the new tower would take three years, we could conservatively calculate the numbers to exceed 100,000 miles and 8,000 hours, if the apparatus is certifiable for that long. The department suggests it may be prudent to place an order for a replacement sooner rather than later to avoid further extensive repair costs and unexpected downtime.

In conclusion, the department faces an ongoing challenge with the current aerial ladder and its associated systems. Despite the apparatus' solid powertrain performance, the recurring issues with the ladder and monitor system, combined with concerns about the structural integrity of the aerial, raise serious questions about the apparatus' continued viability. Given the potential costs for repairs and the lead time for a replacement, it is recommended to start planning for a new unit to ensure the reliability and safety of the department's Fire Rescue fleet for the future.