New 2024 KME Tractor Drawn Aerial (TDA) Ladder Truck
Frequently Asked Questions

1. **Is a ladder truck new in the Fire Department's fleet?**

   Leland has had a ladder truck since 2002. This new TDA ladder truck, which was approved in the FY21-22 budget and ordered in July 2021, is set to replace the existing 23-year-old truck, which was built in 2001. Wait times for the manufacture and delivery of newly built ladder trucks are currently about 3-4 years.

   The current ladder truck will become a reserve truck once the TDA is fully in service.

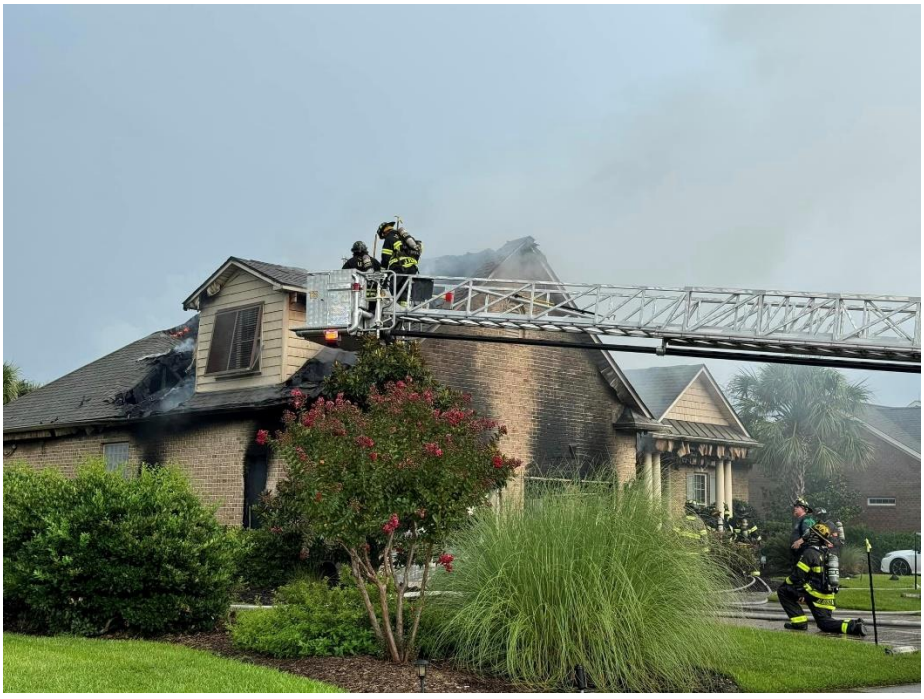
2. **Why does Leland need a ladder truck?**

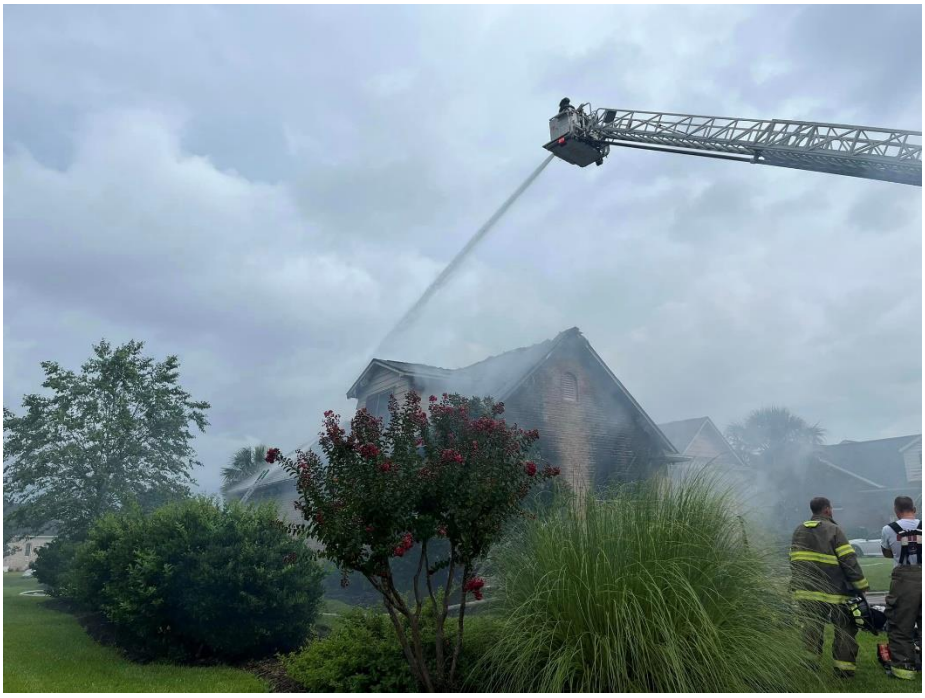
   Most people think ladder trucks are only needed to respond to fires in tall buildings. However, during the regular 5-year fire rating inspection, the North Carolina State Fire Marshal's Office (NCSFMO) evaluates two main criteria to determine the need for a fire department to have a ladder truck. These include:

   a. Any fire district that has five (5) or more buildings that have three (3) or more stories or are 35 feet or more in height. As of the beginning of 2024, the Leland Fire District had 280 buildings that meet this criterion that are existing, in construction, or in the planning phases. These include apartment buildings, hotels, and 3-story houses.
   b. Any fire district that has five (5) or more buildings that are less than three (3) stories in height but are larger than 10,500 square feet in size. As of the beginning of 2024, the Leland Fire District had 40 buildings that meet this criterion that are existing, in construction, or in the planning phase. These include grocery stores, large hardware stores, big box retail stores, strip malls, etc.

   While ladder trucks can be used to rescue people from taller buildings, they are much more commonly used to provide an overhead water stream through piping and a nozzle attached to the end of the ladder. This is used to suppress fire in larger one or two story commercial or apartment buildings or even larger houses, where it would otherwise be difficult for firefighters to apply water from the ground.

The pictures below show Leland Fire/Rescue crews using the current ladder truck at a house fire in July 2024.





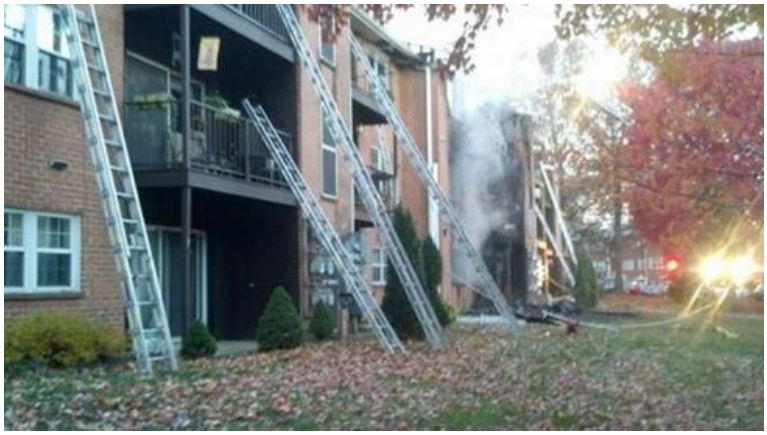
3. How do the roles and responsibilities of firefighters on an engine (pumper) and a ladder truck differ?

Leland Fire/Rescue operates with an engine and ladder truck deployment model, meaning the engine crews and the ladder truck crews have specific tasks, roles, and responsibilities at a structure fire. Many of these tasks have to be done at the same time. For instance, the engine crew deploys hose lines, usually to the interior of the building to attack the fire, and half of the ladder truck crew enters the building to search for and rescue any victims, while the other half of the truck crew makes strategic openings in the building to provide ventilation. The search and rescue operation must begin as soon as possible either before or while the fire attack operation is taking place, and the fire attack and ventilation operations must be coordinated to take place as close to the same time as possible.

Studies show that when search and rescue is initiated before or at the same time that fire attack takes place by the engine crew, victims have a 67% chance of survival. If that search and rescue waits until later, after the fire is suppressed, those same victim's chance of survival drops to 41% (Firefighter Rescue Survey, 2022). Time is life.

Ladder trucks also carry a different set of equipment specific to their jobs/tasks at a fire. For instance, another important job of the ladder truck crew is to ladder the roof and many different sides of the building with portable ground ladders. An engine can only carry 48 feet of ladders, while ladder trucks must be able to carry at least 115 feet of ladders.

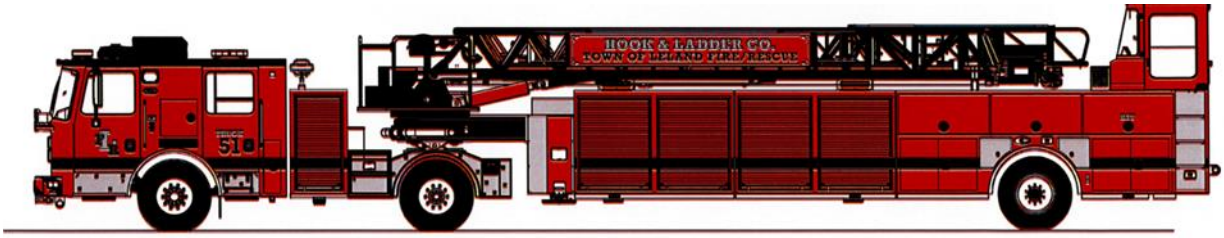
The pictures below show ground ladders at an apartment building and on a ladder truck.



Source: https://firefightertoolbox.com/truck-company-ops-ladders-important/

Source: https://www.firehouse.com/apparatus/article/53095224/how-fire-departments-decide-how-many-ladders-to-carry-on-their-vehicles

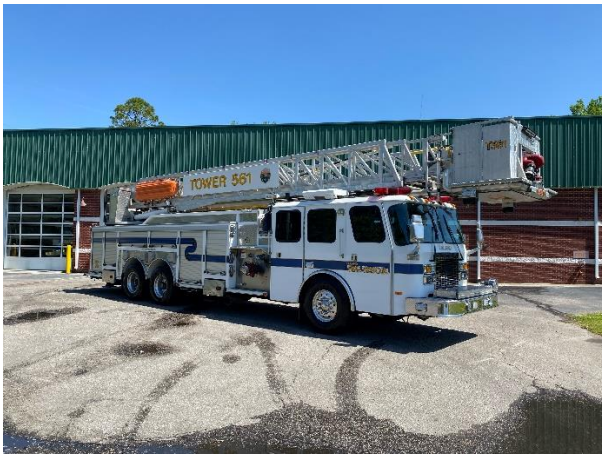
4. Why did Leland purchase this specific Tractor Drawn Aerial (TDA) or Tiller type of ladder truck?

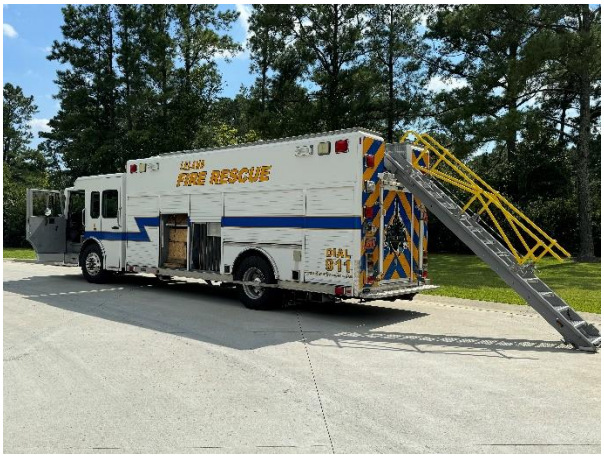


Currently, Leland Fire/Rescue operates both a 2001 ladder truck and a 2007 rescue truck. The current ladder truck functions as a typical ladder truck responding to fires, while the rescue truck is used to carry heavy technical rescue equipment used for stabilizing and cutting people out of wrecked vehicles when necessary, as well as confined space or high-angle rope rescue. Both vehicles are operated by the same crew, so they have to jump back and forth between the two depending on the type of call. If they are out of the station in one vehicle and a call requires the other vehicle, their response is delayed, as they must return to the fire station to transfer over before responding.

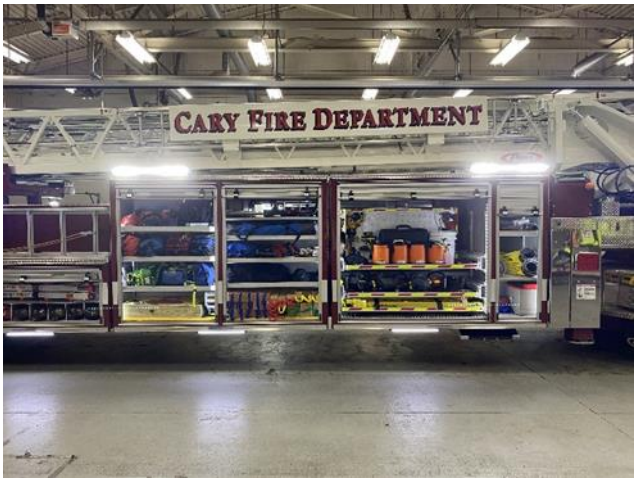
The new 2024 TDA ladder truck is the only type of ladder truck that is large enough to allow us to consolidate all of the equipment from both current trucks into one vehicle. This allows for quicker responses, as the single crew will no longer have to staff two separate vehicles. It will also prevent us from having to add staff specifically for the rescue truck and fund the replacement of the rescue truck in the future.

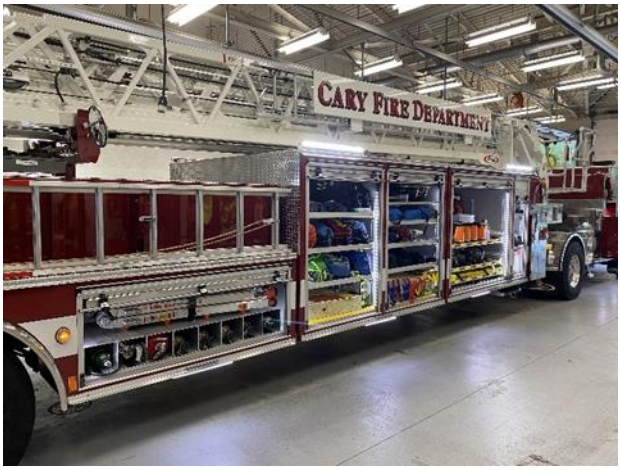
Ladder Truck Call Types	Rescue Call Types
All structure fires	Motor vehicle collisions with patient pinned/entrapped
All fire alarm activations in buildings	High-angle technical rescues
Gas leaks	Confined space technical rescues
Elevator emergencies	Agricultural technical rescues





Examples of the amount and type of equipment that can be carried on a TDA ladder truck:





Source: https://www.atlanticemergency.com/Apparatus_Details?id=a003l00001WjC7hAAF