Mountain Green 5 Year Fire Protection Minimum Modernization Plan

June 2018

**Purpose:**

*To present the needs of the Mountain Green Fire District Operations Division over the coming years, due to existing needs and expected community growth.*

Mountain Green is a community on the edge of explosive residential and commercial growth in the near future. The Fire District presently has the capability of only just adequately meeting the firefighting and emergency response needs of our community. There are the three immediate objectives of the 5 Year Modernization Plan:

1. Replacement of present EMS first response vehicle with a newer and well-designed vehicle.
2. Provide a weekday daytime paid staff of 3 firefighter/EMT’s
3. Replacement of the structural fire engine with a more capable vehicle

There are an additional nine items that have been identified as larger expenditures which will need to be addressed over the 5-year period as well:

* Fire Alarm/Fire Sprinkler system for the station
* Replacement of obsolete 4-gas detector/meter
* Replacement of antiquated hydraulic vehicle-accident rescue tools
* Acquisition of shed or container to store equipment cluttering apparatus bay
* Replacement of obsolete Thermal Imaging Cameras
* Installation of Diesel Exhaust Extraction system in fire apparatus bay
* Acquisition of Mobile Computer Terminals for primary response vehicles
* Construction of decontamination area for contaminated firefighting and EMS gear
* Continue replacement programs for fire turnout gear and Self-Contained Breathing Apparatus

**Executive Summary of Immediate Objectives:**

* Our main fire engine is now 13 years old, and though still capable, will need replacement soon due to several factors including age, changes in fire apparatus design, obsolescence of equipment it carries, and the need for an additional apparatus to supplement the initial fire attack of structural fires per national fire service standards and practices.
* A daytime paid staff of 3 firefighters is needed. Our current staffing system is entirely volunteer, which is very commendable and historically adequate at many hours of the night for emergency calls but during daytime hours, staffing suffers tremendously. Most of our volunteer firefighters are at work during daytime hours and cannot respond to emergencies within the District.
* Our EMS first-response vehicle has shown signs of age, poor design and mechanical unreliability. The primary backup vehicle is 17 years old and on the verge of being unserviceable. The structural fire engine is unable to fulfill this need, due to age and lack of capability to carry the equipment from the EMS response vehicle. Therefore, a new EMS first response vehicle will be needed soon.

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**Detailed Analysis of Immediate Objectives:**

*EMS Response Vehicle Replacement:*

Morgan County Ambulance provides EMS transport for Mountain Green. Due to the ambulance station being located in excess of 10 miles and therefore many minutes from any residence in Mountain Green, the Fire District provides EMS First-Responder service to the community.

The current EMS Response Vehicle is a rebuild of an E-One Corporation 1997 light rescue body onto a 2009 Ford F550 4WD chassis that was previously owned by the Texas Department of Transportation. The District acquired this vehicle in 2013 to replace the 2001 Ford F250 Pickup which had been used for EMS response for the previous 12 years. The now-17-year-old F250 is the present back up for the EMS response vehicle while it is in the shop, responds for a second EMS call or personnel transport to emergencies, and mounts the snow plow to plow the station or to provide access to unplowed streets for emergency calls.

Although it is vastly superior to the equipment carrying capability of the 2001 F250, problems have developed with the two used components of the primary EMS response vehicle and the way they were combined. The E-One Body wiring is over 20 years old, resulting in several subsequent repairs having to be made since acquisition, particularly after a fire in the wiring insulation damaged part of the vehicle lighting system. There is no “master” disconnect switch to shut electrical power to components, and there was no circuit-breaker system provided for the many electrical components in the body. The body’s compartment system has no capability to expand to hold additional rescue tools or EMS equipment, resulting in equipment stacked atop other equipment, making access difficult in an emergency. Several compartments leak, potentially damaging equipment.

The 2009 F550 chassis is still serviceable, but has over XXXXX miles on the vehicle, and reliability is somewhat in doubt. There has been an electrical starting issue that has been difficult to pinpoint by mechanics; occasionally the vehicle is dead and needs to be jumped, necessitating a battery maintainer be hooked to the vehicle at all times to prevent this issue.

In Operations’ estimation, this vehicle should be replaced with a similar “Light Rescue” type vehicle, and the 2009/1997 truck can be placed as a second-out vehicle for second emergency calls, a spare for when the first-line is out of service, and also be fitted with the snowplow presently on the F250 for emergencies or to plow the station. An F550 is a much more capable vehicle for plowing.

Estimated replacement cost for a new/slightly used Light Rescue vehicle is approximately $120-140,000.

*Weekday Daytime Paid staffing of 3 Firefighter/EMT’s:*

Daytime availability of volunteer firefighters has always been difficult to achieve. Mountain Green, which has no commercial development to speak of and is in fact a bedroom community for the Weber/Davis/Salt Lake City region, has an even harder time with securing adequate staffing. Volunteer personnel are away at work, physically unable to reach the fire station in time to respond for calls. All volunteer departments in the area have similar issues: Morgan Fire staffs in a volunteer, paid-on-call manner like Mountain Green does. They have no paid daytime staffing. Uintah Fire and

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South Weber City also have similar volunteer services, but have mutual aid with their close-by Weber County paid departments (Weber Fire District, South Ogden City, etc.) Mountain Green has no paid back-up nearby for when there are inadequate District volunteer firefighters available; the travel time is too great. This lack of adequate staffing leaves Mountain Green standing potentially unprotected while shorthanded during the daytime hours. In fire or EMS emergencies, seconds count. A rapidly-developing daytime house fire or wildland fire, or a critical EMS call, cannot be adequately consistently staffed with our present volunteers.

Operations proposes Daytime Staffing be provided in the form of a part-time fire/EMS crew. The crew would be on duty from 0700-1700 hours daily. Nights, weekends and state and federal holidays would be staffed by the normal volunteer operations. Per National Fire Protection Association guidelines, nationally accepted fire department staffing norms, locally accepted staffing levels and our fiscal ability, a consensus has been reached that a crew of three firefighter/EMT’s, led by a working supervisor, would be adequate to be able to be an initial first response fire and EMS crew. The two firefighter/EMT’s could be paid an average of what area fire departments now pay for part time personnel, approximately $15/hour; the supervisor or Captain would be paid $18/hour. Minimum qualifications for employment would be maintaining Firefighter 1/Firefighter2/HazMat First Responder, Wildland Firefighter 1 and Utah State EMT. Supervisors should have Officer 1. Responding volunteer firefighters that assist the daytime crew would still receive their $20 per call stipend to compensate for fuel and insurance for their personal vehicles responding on the call. Officers of the District would maintain supervisory control of the part-time crew on the emergency scenes and in the station.

Estimated costs for the 10-hour part-time daytime response crew would be approximately $127,000 per year.

*Replacement of the Structural Fire Engine with a More Capable Vehicle*

Mountain Green will not see any decline in new residential development for the foreseeable future. An audit of fire impact fees taken for new housing in the District shows development has been steady and may rapidly increase at any time due to developments already approved for single family housing, as well as proposed commercial and mixed-use development. Regardless of whether paid or volunteer staffing is employed, the District faces a need for additional fire apparatus to protect the lives and property of the citizens.

Our Pierce/Kenworth 2005 1250 GPM fire engine is a very capable engine. It has a 1000-gallon water tank for operating in non-hydrant areas and has been retrofitted with better scene and emergency-warning lighting and state-of-the-art fire hoses and appliances. However, it is still 13 years old, and guidelines from the NFPA state that fire equipment in front-line service should ideally not be more than 10 years old, due to strains placed on the motor, drivetrain and equipment through the rigors of emergency response, which includes not adequately warming up the motor, driving at speeds above normal traffic, and placing the vehicle in harms way as needed to control fires or emergencies. We have put roughly 1,000 miles per year of this stressful driving on the Engine.

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No matter how capable the engine is for the majority of fire and emergency calls, our most important missing pieces of fire equipment are more and longer ladders. Class “A” triple combination pumper-type fire apparatus are usually equipped with no more than a 24 foot extension ladder and a 14 foot roof ladder, which is what our engine carries. Many newer homes in the Mountain Green area have places where only a 35-foot ladder will reach. Sometimes an even longer ladder is required, in order to access burning material in high places like a church building or a residential roof struck by lightning, or one which is difficult to access due to building setbacks and rock walls. Consideration also need to be given to the total number of ladders available on a fire ground, as this plays into how a structure fire is able to be safely fought. Only one ground ladder available for deployment makes a fire fight dangerous: fire crews need to evacuate a burning structure quickly if there is a change in conditions, and ladders should be placed proactively around all sides of a multi-story structure early in a fire incident. This requires a ladder truck.

Morgan Fire, our response partner, does not have a ladder truck. They have two pumpers that each have 24-foot ground ladders like Mountain Green. Therefore, any fires above the second floor or with difficult setbacks or ladder access cannot be safely fought by their crews.

The closest ladder truck for our use would have to come on a mutual aid request, from the city of South Ogden. Their Station 81, which houses their ladder truck, is at least 11 miles from any portion of Mountain Green. This would extrapolate into at least a 15-minute response after request to any house fire in the westernmost part of Mountain Green, and longer to Rollins Ranch or the Cottonwoods.

Any future development of Mountain Green may include larger commercial or retail buildings, or apartment buildings. Most garden-style apartments are of the three-story variety and have difficult access on the rear of the structure for ladder deployment. Many of these buildings have to be accessed across the roof by an aerial ladder type apparatus. Of course, multiple ground ladders would also be needed at various parts of any structure on fire in order to rescue multiple trapped occupants, search for hidden pockets of fire, and allow for firefighter emergency egress.

Operations proposes purchase of a “Quint” style ladder truck, which has five capabilities (thus the name) of carrying water, hose, a pump, ground ladders and an aerial ladder. Multiple ground ladders will allow the deployment on all sides of a fire or emergency, such as an earthquake effecting the new Mountain Green 2-story Middle School. Presently we would only be able to deploy one (1) ground ladder to aid the students trapped on the second floor of the school.

In secondary or back up status, our 2005 structural engine should last at least another 5-10 years if properly maintained. Both apparatus would be required on structural fires that are of a significant nature and would be able to be staffed by our volunteer firefighters subsequent to initial alarms. The new fire engine/ladder truck “Quint” would be utilized first-out on structural fires or incidents involving hazardous materials or above grade rescues, or where an elevated large hose streams would be required. The existing engine would still be used as a Tender for grass fires, a relay pumper, and for responses for auto fires and other emergencies at residences or on the interstate.

Estimated cost for a new “quint” style ladder truck is approximately $800,000.

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**Additional Estimated Costs of Other Identified Needs**

* Fire Alarm/Fire Sprinkler system for the station….. $20,000
* Replacement of obsolete 4-gas detector/meter…… $2,500
* Replacement of antiquated hydraulic vehicle-accident rescue tools….. $25,000
* Acquisition of shed or container to store equipment cluttering apparatus bay….. $2,500
* Replacement of obsolete Thermal Imaging Cameras….. $15-20,000
* Installation of Diesel Exhaust Extraction system in fire apparatus bay …..$12,000
* Acquisition of Mobile Computer Terminals for primary response vehicles …..$15,000
* Construction of decontamination area for contaminated firefighting and EMS gear …..$15,000
* Continue replacement programs: fire turnout gear, Self-Contained Breathing Apparatus $10,000