Tilton-Northfield Fire & EMS
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Report

To: Fire Commissioners
From: Chief Sitar
CC: Fire Station Committee
Date: September 29, 2014
Re: Fire Station Needs

Background: This committee was formed to perform a needs assessment on whether the District would benefit from a new, a rehabbed, an addition, or any combination of the listed options to our present facilities. The Committee met over several months to deliberate over what the District's current facilities needs are and what the District's needs would be up to 50 years in the future. The Committee also looked at what limitations on the District's operations are in place due to our present facilities. The Committee also discussed possible facility options that might be put in place that would meet the District's needs presently and up to fifty years going forward. The committee additionally discussed what qualities would be required in a new or rehabilitated facility.

History: The District presently has two facilities, one located in Tilton at 12 Center Street and one located in Northfield located at 149 Park Street. These facilities are eight tenths of a mile apart with both located in what is known as the "Village District". The facility at 12 Center Street was originally built in 1867 with an addition that effectively doubled the building's size added in 1895. It has been remodeled many times since. It has two apparatus bays, living quarters for three firefighters, and administration space for Fire Prevention, the Administrative Assistant, and the Fire Chief. The facility at 149 Park Street was built in 1986, has five apparatus bays and a restroom. My understanding is that this station was built with possibility that at some time in the future, an addition of living quarters might be added.

There have been numerous attempts since 1986 to address the fire station situation with specific consideration of replacing the Center Street facility. The dissolution of the Winnisquam Fire Department and subsequent sale of the Winnisquam Fire Station has highlighted the difficulties of providing a response to the East Tilton area of the District in a timely fashion.

In the early 2000s, there was an effort to add an addition to the Park Street Station. The addition was to mainly include living quarters at a cost of approximately $450,000. That effort failed. Around 2008 the Town of Tilton bought a building on Business Park Drive that might be used as a combined police and fire station, a public safety building if you will. After careful investigation and debate that attempt was abandoned due to many unresolved questions as to the implementation and cost of the plan. The building was then sold to a private entity.

In 2010 there was discussion and debate on the dissolution of the fire district. The proposed result would have split the fire district into two departments, one serving Tilton and one serving Northfield. The result

of the discussion was a warrant article at District meeting. The vote on the Warrant Article was resoundingly supportive of keeping the District intact.

Since then, there has been plenty of conversation, but no real effort to address the fire station issue. It is generally recognized throughout the District, that the Center Street Station must be replaced. It is also recognized that any solution must meet the needs of both the towns of Tilton and Northfield, as well as the Fire District and that any solution proposed should meet those needs for 50 years into the future.

Procedure: The Committee met bi-weekly for the months of July, August, and September. The committee researched and discussed what function spaces would be needed in a new or rehabbed facility. They discussed the advantages and disadvantages of different floor plan layouts, multi-purpose areas, and finish materials. The committee researched and discussed the limitations placed upon the Departments operations because of our facilities. The Committee further researched and discussed the location of fire stations both present and possible future locations. Finally, the Committee discussed different scenarios and options for the future of the department's stations.

Limitations: The committee listed some limitations that the department currently has now due to the facilities we presently have. Some of the limitations are operational in nature, some are functional, and some are safety and health related.

- We are unable to house student firefighters, which not only limits the number of responders, especially at night, but also inhibits our ability to evaluate students in our work environment for possible future employment.
- The on duty crew is restricted as to what apparatus that they can choose from initially to respond to an emergency. There are times when an emergency is better suited with a response of one of the vehicles stationed at Park Street. In those cases the on duty crew or a member of the on duty crew has to first respond to Park Street to get the most appropriate vehicle before they respond to the emergency scene.
- The travel path from the living quarters to the apparatus floor at Center Street is very poor. The members must go down a relatively steep set of stairs, duck under the second floor header, take a left at the first landing, and then must descend three more stairs to the apparatus floor. If it is an engine response, you must work your way around the ambulance to get to the engine.
- We are unable to properly wash the apparatus at Center Street as there are no floor drains. This is especially true in the cold weather. All the vehicles must be washed outside and the water runoff often freezes. Additionally, the undercarriages of the engines have corrosion problems due to the road chemicals used during the cold weather which does not get washed off. Each station should have a dedicated wash bay.
- There are no bays for vehicle maintenance. Any maintenance done at Park Street on a vehicle now blocks access and possible a response of other vehicles in that station. Each station should have a dedicated maintenance bay.
- Both apparatus bays are full and there is no room for additional apparatus. If and when the department obtains an additional engine or ambulance, there is no garage space left to store the vehicle out of the weather.
- There is no apparatus apron at Center Street. When the vehicles are pulled outside for any reason, they are actually sitting in the middle of Center Street and block any through traffic.
- Access to and from Center street is very poor both physically and visually. The space to maneuver our apparatus is narrow. The sight lines when exiting are blocked by vehicles parked on Main Street; which makes for a dangerous exit. The Center Street Station cannot be easily seen from Main Street.
- The size of the Center Street station doors limit the size of apparatus that can be stationed there. The height clearance is 9 feet 5 inches.

- The size of the doors and bays at both Park Street and Center Street are too small. One must be very careful when backing into the station. The size of the doors and bays leave little room for maneuverability. Apparatus bay doors should be 14 feet high by 14 feet wide and the bays should be 20 feet wide. This allows for proper access and egress to and from the vehicles. Additionally this allows for proper inspection of the vehicles and equipment.
- There is no emergency back-up power at Park Street. When commercial power is lost, there are no lights, no heat, and the doors must be raised and closed manually.
- Park Street has no area within the station that is isolated from the apparatus bay where one can get away from the noise and heat or cold. Additionally there is also no office space there as well; there is no space where officers or EMTs can fill out incident reports after returning from a response. There is also no space where a private conversation can take place.
- There is no adequate area at either station to test, clean, or dry hose.
- The floor drains at Park Street do not comply with current environmental standards.
- Neither Park Street nor Center Street is ADA compliant for members and especially visitors.
- The exterior lighting at Park Street is inadequate. This makes for a dangerous situation when members respond to the station in the night time hours.
- There are no living quarters at Park Street such as kitchen, locker room, and shower facilities thereby limiting our ability to house firefighters there for more than a few hours.
- We are restricted in size of fire apparatus that can be stationed at Center Street because of the door and bay size. Neither the Ladder, Tanker, nor Rescue can fit in the Center Street Station. Any new engines or ambulances must be special ordered so that they fit within the station. It is especially difficult trying to specify a vehicle that meets the department's operational needs with the limitations placed on the size of the vehicles.
- There is no separation from the public access area and the members living area at Center Street. The fire station is a firefighter's home. It is where they live for their 24 hour shift period and they should have some private space available to them during that time.
- The fitness area at Center Street is not separate from the apparatus room. The apparatus room is where vehicles are stored and is not an area designed or clean enough for a fitness area. Park Street has no fitness area.
- There are no public rest rooms at either station.
- Both stations lack appropriate space for storage of firefighting and rescue equipment, EMS equipment, cleaning and other supplies, and file archive storage.
- There is inadequate space and facilities to store member's turnout gear. Each member should have 2 sets of gear and we should have enough gear storage for 50 members.
- There is inadequate turnout gear washing and drying facilities. Turnout gear should be washed after each and every fire to remove the harmful chemicals and soot from them. We need to limit our firefighter's exposure to these materials for their health now and in the future. We do have a washer for turnout gear at Park Street, but there is none at Center Street. The washed gear is dried currently by throwing the gear over a pipe in the apparatus room
- There is no clean area to fill and maintain the SCBAs. The SCBAs provide our firefighters with the air they need to breathe in a hazardous environment. It is imperative that this equipment be maintained in the best environment possible as our firefighters lives depend on this equipment.
- There is no area for equipment and personal cleaning or decontamination. Every fire produces hazardous chemicals and soot. This equipment and our personnel must be cleansed of these materials immediately after every fire to limit their exposure to these hazardous materials.
- There is no area to display the antique hand tub currently displayed at AutoServ or any of the department's historical memorabilia.

Station Requirements: the committee researched multiple sources, architectural engineering, and professional journals to help determine what a new or rehabilitated fire station would need. The

committee members also relied on their own personal experience within the fire service on station requirements. Additionally, one member of the committee recently attended a conference on fire station design. The information brought back from this conference included not only station design methodology, but also best practices used for materials and finishes.

Apparatus Bays

- The number of **Apparatus Bays** is determined by the number and size of the apparatus the department has plus what the department may have in the future. In this department's case. We currently own and need a place for 12 pieces of apparatus. The Department should plan for 6 more spaces for a total of 18. In the very near future, we will gain an engine and ambulance within our fleet. Each bay should have the appropriate utility drops such as electrical, compressed air, vehicle exhaust extraction, and water.
- A **Maintenance Bay** should be included within the district so that a piece of apparatus can be worked on in house without affecting the response of other vehicles within the fleet. This should be located near the shop and tool storage area of the station. The vehicle maintenance bay should be a drive through bay.
- A **Wash Bay** should be included in any station the department plans to build or remodel. The inclement weather here in Central New Hampshire requires the State and towns to treat the roads with sand, sodium chloride, and calcium chloride to help maintain safe driving conditions in the cold weather. These chemicals are very corrosive to the vehicles we own. To help prevent the vehicle from corroding, they must be thoroughly washed on a regular basis, including the undercarriage, to remove these chemicals from the vehicles. This will only help to extend the useful life of our apparatus.

Auxiliary Spaces off Apparatus Bays

- **Gear Storage** is required in any fire station. There must be enough gear storage available for every full-time and call member of the department. Additionally the storage should be sufficient enough so that each member can store 2 complete sets of turnout gear. We currently need space for 35 members. We should plan for space for 50 members. There should be an additional secure room available to store new and used turnout gear that is issued to new members and as replacement gear for when issued gear is damaged.
- **Gear washing and drying** is very important and the department must have these facilities available. Carcinogenic soot and hazardous chemicals are deposited on the gear at every fire. These carcinogens and hazardous chemicals must be washed off the gear to reduce exposure of these materials to our firefighters. This area will contain large commercial extractors and drying equipment. This room must be accessible from the apparatus bays and the outside.
- As with turnout gear, it is very important to have **Decontamination and Cleaning Facilities** for equipment and personnel. Any gear used and all personnel exposed to any products of combustion must be decontaminated and cleaned immediately after returning to the station and prior to going back in service. Firefighters are on average more than 1 ½ times more likely to be inflicted with some forms of cancer. Male firefighters are more than 2 times more likely to acquire testicular cancer than the general population. Studies have shown this is likely due to the firefighter's exposure to the byproducts of combustion. Studies have also shown that many of the products of combustion were absorbed through the firefighter's skin. This is why it is so imperative that firefighters and their equipment and turnout gear must be cleaned after every fire.
- There must be an area within the station where the Self Contained Breathing Apparatus **(SCBAs) can be filled and maintained**. Each time an SCBA is used and after it is cleaned, the SCBA must be inspected for any defects or damage and then must be filled so it can be ready for its next use. The SCBA is one of the firefighter's most important pieces personal protective equipment. The SCBA provides the fire fighter with clean air while the firefighter is in an immediately dangerous to life and health (IDLH) environment.

- A **Hose Storage** area is needed to store spare hose so when it is needed it can be easily placed on the apparatus.
- **Areas for Technical Training** must be provided so that firefighter can practice technical rescue skills to maintain their proficiency in those skills. Technical rescues are high hazard low incidence occurrences and possess the highest risk for firefighter injury or death. This why it is imperative that firefighters maintain their skills for those types of rescues. Trench rescue, Confined Space, and High Angle Rescue are some of the technical training props or areas that should be present. These areas are easily incorporated into a fire station. The hose drying tower is an area where many of these props can be placed.
- **Equipment storage** is always an area that is necessary near the apparatus bay. All apparatus spare equipment and tools are stored there. This area should be large enough to store supplies that would be used for Hazmat incidents and should also be able to accommodate firefighting agent (Foam) storage.
- There must be an area within the station near where the ambulances are house where **EMS Supplies** can be securely stored. There are medical supplies such as needles, syringes, and medications that must be maintained in a locked area.

Living Areas

- A **Kitchen** of commercial quality is required for any station where meals will be prepared. As many surfaces as possible including the counter tops should be stainless steel. Stainless steel is durable and will never wear out. The appliances should also be of commercial quality so that they may also last a much greater time than those of residential quality.
- A **Dining Room** area is needed so that meals can be consumed in a comfortable environment.
- A **Day Room** is an area where firefighters can spend time in the evening after all their work and training is completed. This area usually is furnished with chairs and a television.
- **Dorm Rooms** are needed so that firefighters can have a place to sleep during the time when they are not responding to incidents when working at night. Each firefighter should have a separate room. Separate rooms promote better health and sleep. There should be enough dorm rooms so that each firefighter on duty and any live in students should have their own room. Each room should contain a twin bed, night stand, desk, and chair. Rooms that will accommodate students should also have a dresser. Additionally, there should be space where call company members can rest when they are covering the station at night while the full time members are at an incident.
- A **Locker Room** should be provided where each member of the fire department has their own private lockable locker. An option to having a locker room is to provide lockers in the Dorm rooms or have the lockers located in the dorm room hallway.
- **Bath and Shower** facilities are needed just as in anywhere people reside. There should be enough sinks, water closets, and showers to accommodate the number of firefighters working in the station.
- A **Laundry Room** that includes a washer and dryer with a folding table for firefighter's uniforms. This facility is not to be used to wash turnout gear. Turnout gear should not be brought into the living quarters of the fire station.
- A **Fitness Area** should be provided so that firefighters can exercise to help maintain their fitness and strength levels. Firefighting is a very strenuous and physically demanding job. It is very important that our firefighter maintain their strength and fitness for the performance of their job. This area must be durably constructed so that it can withstand the machines and heavy use of a fitness area. Typically these rooms contain a treadmill, stair machine, elliptical machine, free weights, dumb bells, exercise matts as well as other fitness equipment.

- An **Outdoor Patio/BBQ Area** should be provided for cooking and eating outdoors when the weather permits. This area should ideally be located next to the kitchen and be a private space from the public's general view.

Public Space

- It is a requirement (American Disabilities Act 28CFR Part 36) that any new public building be equipped with **ADA Bathroom(s)**. These bathrooms should be located in the lobby area or near the Community/Training room area.
- A **Lobby** area serves as the entrance to the building for the general public. It is a waiting and gathering place that should be adjacent to the administrative area of the building.
- The **Training/Community Room/EOC** room serves a class room setting for departmental staff and can also be used by the public for meetings as well. The room should be sized to accommodate the entire department staff. During times of a declared emergency, the room can also serve as an Emergency Operating Center (EOC) , Alternate EOC, or community warming or cooling station.

Administration Area

- The **Chief's Office** is where the Chief performs his administrative functions. This office should be adjacent to the Deputy Chief's office, the Administrative Assistant's office and the conference room.
- The **Administrative Assistance's Office** must be located next to the Chief's office and must also be the gateway into the Administrative area from the lobby.
- The **Deputy Chief's Office** is where the Deputy Chief performs his administrative functions.
- The **Fire Prevention Office** is where the Fire Prevention Officer performs his administrative tasks. This officer also meets with individuals from the public often so this office should be located in an area convenient to the public. This office should be large enough to accommodate storage files and building plans.
- The **EMS Office** is where the EMS Officer performs his administrative functions. This office can also be used by EMTs and Paramedics to fill out their EMS run reports. Much of the information on an EMS run report is confidential in nature. The office should be set up so that only the person entering data into the computer can see the computer screen.
- A **Station or Duty Officer Office** is required so that the station officer or duty officer can perform their administrative functions.
- A **Conference Room** sized to accommodate 10 to 12 people seated at a table is needed for smaller staff meetings as well as meetings with small groups who have business with the department.
- The **IT/Communications Room** houses all the termination points for all data and communication utilities in the facility. It is mainly occupied with racks for the installation of the facilities computer networks, telephone, and communication feeds.
- There must be an adequate **File Storage Area**. State and Federal Laws require that certain documents be kept for varying periods of time. Some documents can never be disposed of.
- An **Office Machine Area** should be located within the administrative area so that the copier, printer, scanner, and fax machine(s) can be shared by all the administrative staff.

Outside

- **Employee parking** should be adequate in size so that both the on duty crew and oncoming duty crew as well as all the administrative staff have parking spaces available to them. This area should be separate from visitor parking.
- **Visitor parking** should have enough spaces so that if the training/community room where to be used by the public, there will be enough spaces available.
- **HP Parking** must be provided per the American Disabilities Act.
- **Exterior Lighting** should be adequate enough to provide safe lighting during the nighttime hours as well as during inclement weather.

- **Landscape** around the exterior of the building should be attractive and not require a lot of maintenance.
- **Exterior Drainage** should be designed to ensure that there will be adequate runoff from the site and that there will not be any standing water on site. The design must take into account for any environmental conditions that must be protected.
- **Vehicle Access** must be designed so that there is adequate room for large fire apparatus to maneuver safely. Additionally the public vehicle access and the department's vehicle access should be separate from each other.

Additional Systems

- An **Automatic Fire Protection Sprinkler System** will protect the entire station per NFPA
- A **Fire Alarm System** will monitor the building and some of its systems such as the automatic sprinkler system and the kitchen hood and duct system.
- The **Heating Ventilation and Air Conditioning** must be designed so that air flow within the building does not allow air from the apparatus room and adjacent areas to flow into the living quarters. This will prevent any possible hazardous substance in dust or aerosol form from contaminating the living quarters.
- A **Kitchen Hood and Duct System** will be installed in the kitchen to remove the vapors and steam from cooking. This system will be monitored by the fire alarm system for fire within the duct work.
- A **Diesel Exhaust Removal System** will be installed to remove any diesel particulates from vehicles. These systems are directly connected to the exhaust pipes of the vehicles and disconnect automatically when the vehicle leaves the station.
- An **IT Network** will be installed within the building that will be for computer usage and building system monitoring and control.
- A **Phone Intercom System** will be installed within the building for both internal and external voice communications.
- A **Emergency Generator** to be used for when there is a commercial power failure and sized to run the entire building and all of its systems will be required. This is an emergency facility and may also be used for the public in a limited fashion during weather emergencies.
- An **Uninterruptable Power Supply System (UPS)** will be installed to maintain vital facility systems such as communication and computer during the time in between when commercial power fails and the emergency generator comes on line.
- An **Air Compressor** will be required for vehicle maintenance and should be located in the maintenance area of the station.
- A **Breathing Air Compressor** will be required to fill the department's self-contained breathing apparatus (SCBAs).
- A **Communications Tower** will be erected outside the building. The department's communication antennas will be installed on this tower. The tower may also accommodate commercial cellular carriers for a fee.
- A **Fire Station Alert/lighting/PA system** will be required to alert personnel and turn on lights when an emergency incident is dispatched.
- An **Access Control System** will be installed to help secure portions of the building from unauthorized visitors or personnel.
- A **Closed Circuit TV System (CCTV)** will be installed so that certain interior and exterior spaces can be monitored.

Possible Options: The committee discussed several possible options for the construction of a new station or the addition and renovation of the Park Street Station or a combination of the two. Any option that relied on a single facility would require that the new facility be large enough to accommodate the

department's entire fleet. Additionally, any option where collaboration with another entity is considered, must meet the needs of both entities or departments. Some of the options were:

- Building an entirely new facility at a location still to be determined and sell the properties at Center Street and Park Street.
- Construct an addition to and renovate the Park Street Station and sell the Center Street Station.
- Construct an addition to and renovate the Park Street Station and close/sell the Center Street Station after a new station was erected in East Tilton.
- Partner with the Town of Tilton to construct a new public safety complex in the eastern area of Tilton.
- Partner with the Town of Northfield to construct a public safety complex at the Park Street location that would consist of an addition and renovation of the facility to meet the needs of both departments.
- A combination of the previous two options. This would maximize efficiencies realized as a result of the sharing of commonly needed spaces within a public safety building. Some of these areas are: the lobby, meeting room, public bathrooms, training room, and fitness room. Other areas may be communication spaces, utility spaces, and IT spaces.

Recommendation: After careful consideration, it is recommended that the Commissioners support the formation of a committee of stakeholders from both communities to review the facts and options contained within this report. This committee may also consider additional information presented. This committee would then make a recommendation to the District that would resolve the Districts facility needs and shortfalls going forward up to fifty years into the future. It is further recommended that the Fire Chief serve on this committee as an advisor to the committee. It is further recommended that committee consist of a member of the Tilton-Northfield Fire Commission, a member of the Tilton Board of Selectmen, a member of the Northfield Board of Selectmen and up to four additional members. It is also recommended that the Commissioners submit a warrant article at the 2015 District Meeting requesting an amount to be determined from the Building Fund be appropriated towards the expenses of design and engineering for facilities.