



Figure 3 - Existing Fire & Rescue Department

Department Description

The Fire and Rescue Department provides Fire and Rescue services to two towns [Peterborough and Sharon] and Emergency Medical Services (ambulance services) to Peterborough, Sharon, Dublin, Frankestown, Greenfield, and Hancock. The Department responds to over 1100 calls each year, and provides fire protection to over 6,000 people living in the 52 square mile area of the two towns. The department also helps cover neighboring towns in emergency situations.

The Department is an on call organization consisting of approximately 50 Firefighters and Emergency Medical Service (EMS) members. The only full time employee is the Chief, who is assisted by ten officers.

Between 10 and 15 outside public visitors may come to the Department each day. The Department conducts meetings involving both inside staff and public, and sometimes runs all-day training or educational programs.

Existing Site Uses and Zoning Considerations

The Fire Station property is located at 16 Summer Street, which is in the General Residence District. The minimum lot size requirement for that District is 20,000 square feet for a one- or two-family residence. This parcel exceeds 10 acres, although much of it is steep slope that to date has been considered inaccessible (Refer to Figure 4 on the next page)

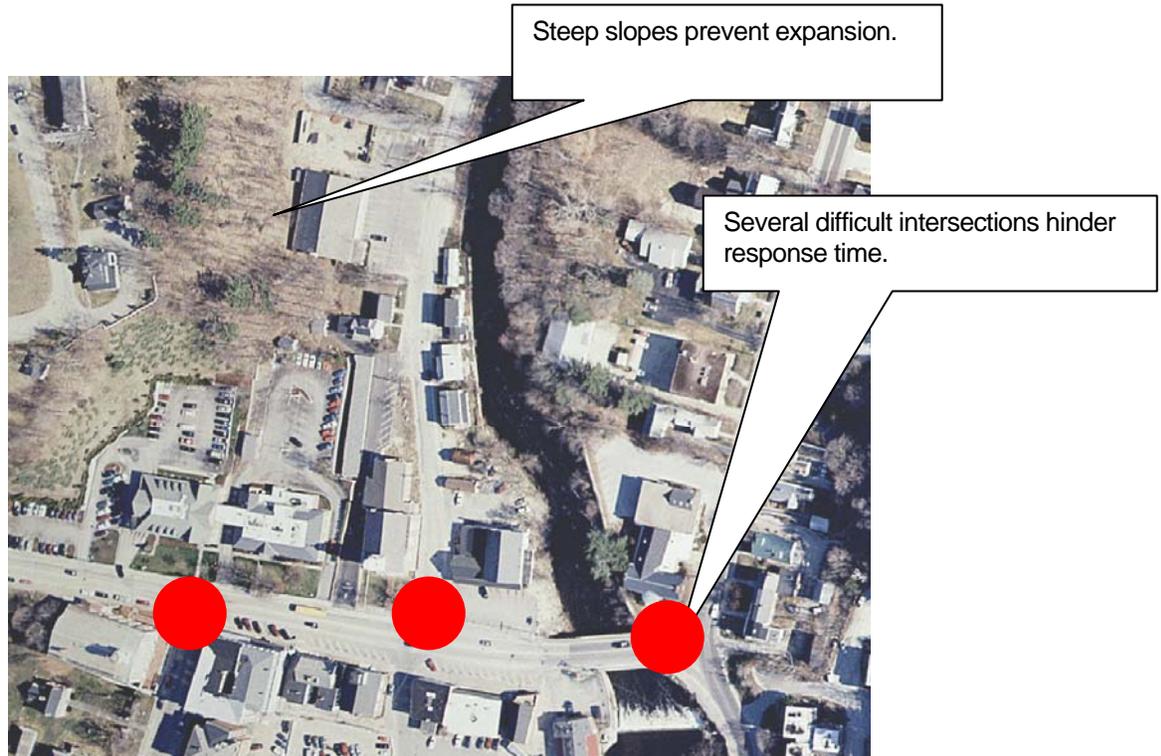


Figure 4 - Summer Street Fire Department Site

Approximately 2% of the lot is occupied by the structure, and 3% covered by paved parking lot.

Potential for future development: Even though the site abuts the downtown, the residential zoning does not allow full-fledged retail/commercial use. There are some uses permitted by special exception in the General Residence District. Currently there is not any discussion with the Planning Board about changing the zoning designation for this parcel.

Characteristics of Existing Facilities

The current facility occupied by the Peterborough Fire and Rescue Department was built in 1945 for the Department of Public Works. The building was converted to the fire department in 1972 to provide needed space for apparatus, equipment and administrative functions. The building has been added onto twice to provide additional space for equipment and training room.

The current brick masonry building has several deficiencies which impact the efficient operation of the department. Primary complaints include the lack of office space, inadequate sized apparatus bays to accommodate larger vehicles, equipment storage areas without proper ventilation, lack of secured storage rooms and inadequate areas for maintenance, and the need for modern restrooms and shower facilities. There is also no space for a dedicated Emergency Operations Center (EOC). Currently, the Fire Chief serves as the Emergency Management Director for the Town of Peterborough.

Building and Fire Codes

Weller & Michal Architects reviewed key elements (primarily fire and life-safety related) of the ICC 2000 International Building Code² (IBC2000) and the 2003 Life Safety Code (NFPA 101) as they affect the current facility used by the Peterborough Fire & Rescue.

Size Limits Established by Fire and Building Codes

Under codes, the maximum legal size of a building is dependent on how a building is constructed and what it is used for.

The current building is classified as Construction Type III-B (non combustible exterior walls-unprotected) and a Business Occupancy. The current building size is under the total maximum allowable building area per floor (14,000 square feet plus an additional 14,000 square feet for a fully sprinkled building) for a total maximum allowable area of 28,000 square feet. The construction type allow for an expansion of the existing building, however a projected facility program and site limitations preclude a realistic expansion of the facility.

Codes Issues

Current building does not present any major code violations or areas of concern which impact life safety and/or egress code requirements.

ADA Accessibility

Current building does not fully comply with ADA accessibility requirements for publicly owned facilities (Title II).

- ADA, require accessible entrances and parking
- ADA, accessible toilet rooms

Existing Space Uses

The current facility (Refer to Figure 6 on the next page) occupied by the Peterborough Fire & Rescue Department contains approximately 7,900 net square feet. About 76% of the net floor space, or 6,025 square feet, is directly used for specific functions for housing fire apparatus and equipment storage. The balance of the area is consumed in administrative functions, day room, toilet rooms and circulation space. Refer to Facility Needs Assessment by Department for a complete breakdown of space by specific function

The current facility lacks key design requirements and amenities necessary for a modern fire and rescue department (Refer to photos shown in Figure 5 and Figure 7). These Include:

- Apparatus Bays to accommodate larger fire fighting equipment, vehicle access from two directions, and 12 foot high doors
- Adequate office space for the fire chief, administrative assistant, deputy chiefs, captains, etc

² IBC2000, with amendments, is the current Building Code applicable throughout the state of New Hampshire.

- Bunkrooms for storm coverage
- Adequate equipment storage
- Modern fire fighter toilet/shower rooms for male and female
- Ventilated and well heated apparatus bays



Figure 5 - View of Existing Apparatus Garage & Hose Drying Racks

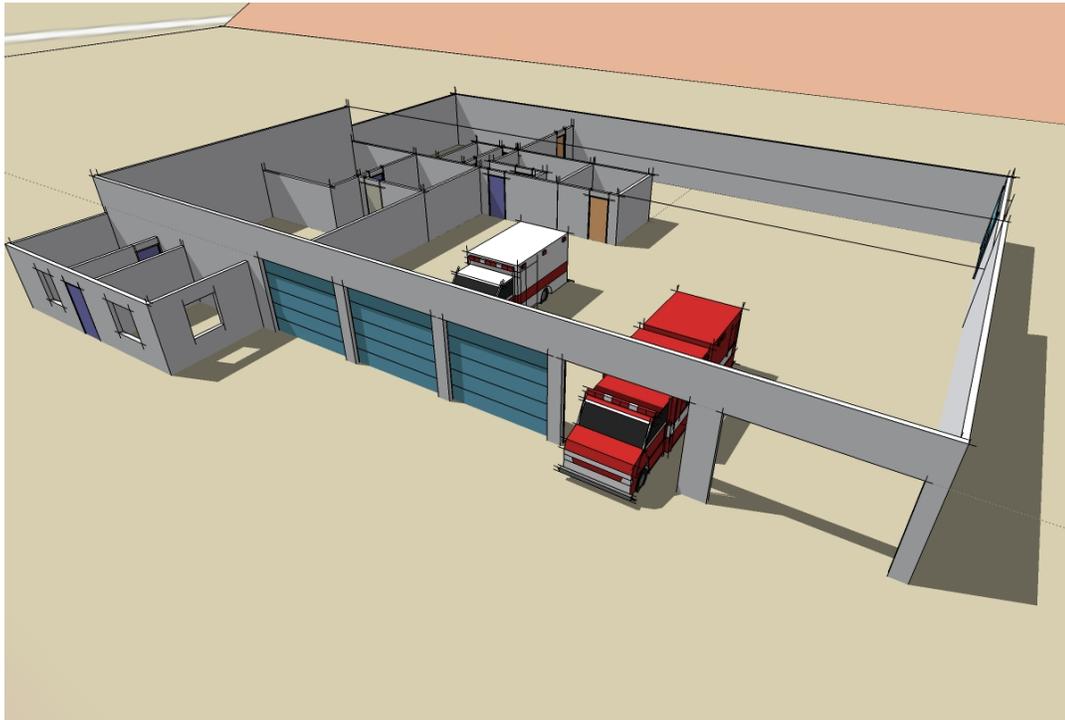


Figure 6 - Existing Fire Station Layout



Figure 7 - Interior Views of Existing Fire Station

Primary Building Systems

The following analysis, conducted by our mechanical/electrical engineers, summarizes all the major systems and life-safety code items that will need to be addressed in order to continue safe and prudent operation of the current fire station.

Electrical Systems

Power Distribution

Electrical service enters the rear of the building to a 200 amp, 3 phase main panel. The meter, panel, standby generator and other equipment are all located in an undersized electrical room. Main service is an older load center style with limited room for expansion.

Branch Circuitry

Electrical distribution is primarily original with some additions and modifications over time as needed. Electrical wiring within the apparatus bay/garage is not compliant with current NEC regulations.

Receptacles in the apparatus bay/garage should be ground fault circuit interrupted protected to comply with code.

Standby generator (120/208 v, 3 phase) is new within the past 10 years and appears to be in good condition. Breaker rating is 25 KVA with a 90 amp, 3-pole breaker. Currently the generator capacity is adequate to serve the fire station's current needs under present loading. However, the generator would unlikely support additional equipment or air conditioning if the facility was expanded (Refer to Figure 8).



Figure 8 - Existing Stand-By Generator & Distribution System

Lighting

Interior lighting throughout the facility was replaced in 2003 through a PSNH program.

Communication System

Communication wiring and phone system is 33 years old and is essentially original when the building converted to the fire station. Additional wiring and computer wiring has been added.

Fire Alarm and Sprinkler System

Current fire alarm system is limited and not in compliance with ADA horns and strobes requirements. System should be replaced to permit safe continued use of the facility by outside groups.

Mechanical Systems

Heating System

The primary heating plant is an oil fired American Standard cast iron boiler, 786 MBH, which appear to be in fair condition (Refer to Figure 9).

Heating distribution system is via two zone circulating pumps positioned on the zone return mains.

The apparatus bay/garage is heated with hot water unit heaters with NO central or tail pipe exhaust system.

Office and Training Room are heated with baseboard radiation with NO central outside air ventilation.

Kitchenette area is provided with a residential style appliances and residential type hood which is not NFPA compliant.



Figure 9 - Existing Heating/Cooling Systems

Plumbing

Water service to the existing fire station is a 3/4 inch service, which is minimal for a building of this type. Hot water is heated via an indirect heat exchanger integral to the boiler room.

Fixtures in fire fighter's locker rooms are in poor condition and non compliance with ADA regulations (Refer to Figure 10).



Figure 10 - Existing Plumbing Fixtures

Fire Protection

Building is fully sprinklered and served by a 6 inch water main and wet type alarm valve.

Building Air Compressor System

Existing air compressor, which supplies air for fire trucks air breaks, is an antiquated unit and should be considered for replacement.



Figure 11 - Existing Air Compressors

A new and separate air compressor is located in the Apparatus bay/garage for providing fresh air to firemen air backpacks. The compressor is new and in good condition. However, its location may allow for diesel fumes to be introduced into the compressed air (Refer to Figure 11).

Recommendations

Needs and Wants

For the purposes of this study, **Wants** are defined as improvements and changes that would enhance the operation and function of the current fire station and make it a more desirable asset for the Peterborough Fire and Rescue. These suggestions and recommendations would receive lower priority when allocating scarce resources.

Needs are defined not solely as requirements for change mandated by law (or building codes), but also as improvements and changes that are compelling in their logic and would be a positive response to a clearly and strongly held complaints with the existing facility. Without addressing these **Needs**, the building will continue to deteriorate, frustrate many and fall short of its full potential to serve the fire and rescue department for the Town of Peterborough.

If the option to build new on a new site is NOT pursued the list of Needs and Wants are as follows:

Potentially, the list of **Needs** includes:

- ADA – Install new toilet and shower rooms to comply with ADA standards
- Energy Efficiency/Human Comfort – new HVAC distribution and control system
- Life-Safety Code – new fire alarm system
- Life Safety Code – replace existing wiring within the apparatus garage to comply with current codes

- Update communication system

Potentially, the list of **Wants** includes:

- Exterior – window replacement
- Safety - space for new SCBA and related equipment
- Equipment Replacement - replace existing 25 year old Stand-by-Generator to handle additional capacity
- Apparatus Garage – expand and modernize facility

