CHAPTER FOUR
FIRE AND RESCUE STATIONS

This Chapter provides a review of the general concepts for fire and rescue station location planning. This review includes an overview of the Study Team’s approach to developing fire station location recommendations for the Township of Lower Merion, conditions of current facilities, and options and recommendations for current and future fire and rescue stations in Lower Merion.

OVERVIEW

The location of the fire and rescue stations from which fire and rescue service is provided is a key element in the level of fire protection and rescue service provided by local governments. The decision to locate a new fire or rescue station or relocate an existing station has many components other than its siting. These include:

A. Cost of the facility and equipment;
B. Apparatus;
C. Staffing;
D. Annual operating costs; and,
E. Public reaction and support.

There is no magic formula for determining the location of fire and rescue stations in a community. While computerized programs can assist officials in these important decisions, the final determinations require human-based consideration of many factors.

MAXIMUM TOTAL RESPONSE TIME

A key consideration in determining a fire and rescue station location for fire-related services is the maximum acceptable total response time. This section discusses fire response time concepts and components.
FIRE AND RESCUE STATIONS

MAXIMUM TOTAL RESPONSE TIME (continued)

Fire-Related Response Time

One of the primary criteria used in determining adequate response time (and thus the location of a fire station) is the time from ignition to flashover (simultaneous ignition of all combustibles), at which time the spread of the fire will increase dramatically. The Study Team’s experience, supported by various studies and research, has shown that the time from ignition to flashover in a structural fire will vary from six to nine minutes. To arrive on the scene within this time frame, the following time factors need to be taken into consideration:

1. Ignition to detection to communication notification;
2. Communications notification to fire company dispatch;
3. Fire department dispatch until apparatus is en route;
4. Travel time to the scene; and,
5. Initiation of service, e.g., placing hose lines in service.

A description of these five factors may be useful for the reader.

1. Ignition to Detection to Communication Notification

Great strides have been made in reducing the time from ignition to detection of fires. For example, inexpensive smoke detectors, heat detectors, monitored alarm systems and sprinkler systems have become standard in most residential, commercial and industrial buildings.

This time factor can be reduced if the automatic suppression and detection system simultaneously notify the occupants and the communications center. This time factor can be significantly controlled by changing the local codes to require detection devices in all residential, commercial and industrial buildings, with automatic notifications in those facilities with large life or property loss potential.
FIRE AND RESCUE STATIONS

MAXIMUM TOTAL RESPONSE TIME (continued)

2. Communications Notification to Fire Department Dispatch

The internal dispatch center processing time of a call for assistance is dependent upon the call load, the level of expertise of the communications operators and the type of communications equipment. Processing time of less than 60 seconds is the ideal and should be the goal of fire department communication and dispatch centers.

3. Fire Company Dispatch Until Apparatus is En Route (Turnout Time)

Once a notification is received in a fire and rescue station, personnel must stop their activity, note the location and nature of the call, in some cases involving volunteers who respond to the station, don any protective clothing, open the doors, board the apparatus, start the apparatus, and exit the station. These factors are fairly stable and only small amounts of time can be saved by automating the door opening process with the station alert, and placing information about the nature and location of the call on computer terminals in the vehicle.

4. Travel Time to the Scene

Travel to the scene generally requires the most time. It is dependent upon:

A. Fire and rescue station location;
B. Weather factors;
C. Road conditions;
D. Traffic conditions;
E. Street layout and special access impediments;
F. Size of service area;
G. Training of personnel; and,
H. Apparatus staffing approach.
FIRE AND RESCUE STATIONS

MAXIMUM TOTAL RESPONSE TIME (continued)

Response time may be lessened as a result of installation of traffic control preemption devices.

5. Initiation of Service, e.g., Placing Hose Lines in Service (Set-up Time)

Upon arrival on the scene, water supply must be established, self-contained breathing apparatus donned, and attack hose lines stretched to the location of the fire. The effectiveness of the company’s operation on the fire ground is dependent upon, among other things, the level of training and the physical condition of the personnel and the number of personnel arriving at the scene. Firefighting personnel then enter the structure, approach the fire, and initiate fire suppression activities while, at the same time, performing search and rescue activities, as necessary. The amount of time required for setup can vary significantly from one incident to another. For purposes of this analysis, a two-minute set-up time after arrival on the scene was the goal.

Data from Other Communities

The establishment of response times for a specific community depends upon the geography, demographics, and distribution of commercial, industrial and residential properties.

The National Fire Protection Association (NFPA) has established criteria which state that in urban/suburban developed areas a pumper should be located within:

1. 2 miles of residential property;
2. 1-1/2 miles of commercial areas; and,
3. 1 mile of major industrial development which would require a flow of water of 5,000 gallons per minute or more.
FIRE AND RESCUE STATIONS

MAXIMUM TOTAL RESPONSE TIME (continued)

While these are very conservative estimates, the problem with using mileage alone is that weather and road conditions are not taken into account.

Another way of approaching this issue is to define five levels of risk and then assign a response time requirement to each risk, rather than use just straight mileage response. These risks can be defined as follows:

1. **Highest** - Refineries, large industry, hospitals, school dormitories, lumber yards, and propane storage facilities without built-in suppression or detection systems.

2. **High** - High-rise hotels and residential, large shopping centers, and industrial facilities.

3. **Medium** - Commercial and industrial facilities with sprinkler systems, small shopping centers, and high density low-rise residential buildings.

4. **Low** - Single family dwellings with a separation of at least 100 feet between buildings.

5. **Minimum** - Wide separation of single family dwellings and farm land.

In the International City Management Association’s (ICMA) study on Fire Station Location Analysis: A Comprehensive Approach, the following data on the response time requirements of some municipalities were provided in an article by Susan B. Benton and Neal B. Carpenter entitled, “A Computerized Approach to Fire Station Location.” While these are large municipalities, the data can be useful indicators.
FIRE AND RESCUE STATIONS

MAXIMUM TOTAL RESPONSE TIME (continued)

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AVAILABLE OF RESPONSE TIME DATA

The availability of detailed response time data is an essential part of the process of analyzing the adequacy of fire protection service. A reduction in actual response times to emergency incidents is a measurable improvement in the service being delivered. For that reason, assessment of response time is not only an essential component of fire and rescue station location determination, it is an important ongoing function of fire and rescue department management and operations.

Response Time Components

Complete verified comparative response time data are not available at the national level. In addition, terms used to define the various time segments of response time vary among fire departments. One of the key elements of the International Association of Fire Chiefs (IAFC) National Fire Service Accreditation Project is response time analysis. In fact, one of the
FIRE AND RESCUE STATIONS

AVAILABILITY OF RESPONSE TIME DATA (continued)

anticipated goals of this IAFC project is to establish valid national response time data for use by all fire departments.

For response time data to be available for comparison and service level evaluation purposes, consistent terminology must be used and detailed accurate response time data must be maintained and summarized.

This section provides definitions for the various components of response time. These definitions are those used by the IAFC Accreditation Project. For ease and accuracy of comparison of data from other fire and rescue departments, the Study Team considered it beneficial to outline nationally-accepted definitions in this Study.

**Notification of Event** - Notification of event is the point in time when the first electrical impulse or indicator that can be identified and recorded by the public safety agency occurs.

**Alarm Processing and Dispatch** - The period of time required for the communications center to identify that an emergency is in progress, collect pertinent information to dispatch and to assess the methodology used by the agency to deploy resources.

**Turnout Time** - The period of time for on-duty emergency system personnel to discontinue their present activity, properly attire themselves and board the vehicle. This includes the elapsed time between being notified that an emergency is in progress and the vehicle beginning to respond to the identified location.

**Travel Time** - The period of time between the apparatus wheels beginning their uninterrupted response to the incident and the actual time that the emergency vehicle arrives at the address or location to which it was dispatched. Travel time includes driving distance, delays caused by misinformation in the dispatch, traffic obstruction,
FIRE AND RESCUE STATIONS

AVAILABILITY OF RESPONSE TIME DATA (continued)

and geographic obstacles. Travel time ends when the vehicle is declared on-scene by
the first arriving unit.

On-Scene Time - The point in time that the first arriving responding emergency
vehicle or responsible command officer arrives at the scene of an emergency and who
can begin to take immediate action or take command of the rest of the response.

Initiation of Action - The period of time of actual involvement by the individual crew
members or companies in the reduction of the state of emergency at the scene. This
period of time does not end until such time as the fire officer or other individual with
jurisdiction, determines that the organized fire unit can be placed back in service
and/or respond to an additional emergency.

Termination of Incident - The point in time when an emergency incident is declared
terminated, and all deployed agency resources are available for another assignment.

Time Segment Responsibility

The responsibility for the various components of response time in the Township of Lower
Merion and other communities is shared between the dispatch function and the fire and
rescue service providers—the County dispatch center and the fire and rescue companies. The
components shared by each of these agencies are as follows:

Communications Center Responsibility

1. Event occurs and continues until detected by human, electronic or mechanical
means.
2. Emergency communications center receives notification of event.
FIRE AND RESCUE STATIONS

AVAILABILITY OF RESPONSE TIME DATA (continued)

3. Call taker qualifies the call; must determine type of incident, extent of event, location of event, and other pertinent information.
4. Call taker enters data and reviews, and transfers incident to dispatcher.*
5. Information reviewed, response sequence reviewed and dispatch made.
6. Dispatch information received in fire and rescue station or on the fire apparatus.

* Note: This segment of the communications center processing time may vary in smaller, less complex centers. In those centers, the call is not transferred to the dispatcher. The call taker serves in a dual role also as a dispatcher, and therefore, just dispatches the call.

Fire/Rescue Company Responsibility

1. Turnout time: Personnel move to apparatus, don protective clothing, get on apparatus and advise the communications center that the unit is responding;
2. Travel time;
3. On scene time; and,
4. Setup time.

This listing of responsibilities is outlined to emphasize that the County and the fire and rescue service providers should participate in the review and analysis of their response time responsibilities so as to reduce processing time and errors.

Township of Lower Merion Response Times

The Lower Merion Fire Department fire companies are dispatched by the Montgomery County, PA, Emergency Dispatch Service. As part of this Study, the Study Team observed this emergency dispatch center and interviewed a number of County dispatch officials. This was the third time a member of the Study Team had the opportunity to visit and become familiar with this state-of-the-art public safety dispatch center.
FIRE AND RESCUE STATIONS

AVAILABILITY OF RESPONSE TIME DATA (continued)

The County Emergency Dispatch Service seems to be very progressive, with up-to-date automated technology, including a computer-aided dispatch system. Computer-aided dispatch systems typically maintain extensive time-related information, including comprehensive response time data. Although the County’s computer-aided dispatch system must track valuable response time data, that data apparently is not directly provided to municipalities’ fire companies that are dispatched by the system.

Significant benefits may be obtained when the dispatch center and fire and rescue service providers review and assess comprehensive response time data to determine opportunities for reducing response times.

RISK ASSESSMENT

This section outlines the fire and rescue risks associated with the provision of fire and rescue services by the LMFD.

Risk Categories

The fire and rescue risks within the Township of Lower Merion are similar to those found in many communities of similar size and nature, with the exception of the fact that there are two high traffic interstate limited access highways traversing the Township, and that the Township includes significant commercial and shopping type development. Moreover, the Schuylkill River extends the full length of the border of the Township, and Amtrak, Septa and Norfolk Southern railroad tracks traverse the Township.

The Township of Lower Merion is considered a bedroom community, comprised largely of single and multi-family residential properties. Many Township of Lower Merion residents commute to work in the Philadelphia area. The Township of Lower Merion Fire Department and its member volunteer fire companies protect a full range of risks, including:
FIRE AND RESCUE STATIONS

RISK ASSESSMENT (continued)

A. Places of assembly;
B. Educational institutions;
C. Hotels/motels to accommodate local tourist and business travelers;
D. Housing for senior citizens;
E. Light industrial processing facilities;
F. Major commercial shopping areas;
G. Multi-family residential areas;
H. Single family residential areas;
I. Small areas of brush and grass;
J. Major commuter and freight railroad tracks;
K. Large river and other smaller waterways and ponds; and,
L. Medical hospital and treatment facilities.

Specific Risks and Hazards

The following are examples of the types of fire and rescue risks in the Township of Lower Merion, by category:

Public Elementary Schools

- Belmont Hills
- Cynwyd
- Gladwyne
- Merion
- Penn Valley
- Penn Wynne
FIRE AND RESCUE STATIONS

RISK ASSESSMENT (continued)

Public Middle Schools

• Bala Cynwyd
• Welsh Valley

Public High Schools

• Harriton
• Lower Merion

Nursery Schools

• A Child's Day in Lower Merion
• Ardmore Methodist Pre-School
• Ardmore Presbyterian Church Pre-School
• Bala House Montessori
• The Bala-Cynwyd School for Young Children
• Day Care Association of Montgomery County, Inc.
• Gateway School for Little Children
• Lane Montessori School, Inc.
• Main Line Montessori School
• Open Connections School and Family Center
• Phebe Anna Thorne School of Bryn Mawr College
• St. Christopher's Church
• St. George's Nursery School
• St. John's Episcopal Church
• St. Thomas Nursery School (Mary's House)
• The Seedlings
• The West Hill School
FIRE AND RESCUE STATIONS

RISK ASSESSMENT (continued)

- The Wetherill School
- Young School for Wee People

Special Schools

- The Barnes Foundation
- Bryn Mawr Conservatory of Music
- Lower Merion Vocational Training
- Main Line Conservatory of Music

Private and Parochial Elementary and Secondary Schools

- Akiba Hebrew Academy
- Baldwin
- Children's House School
- Childwork's Elementary School
- Episcopal Academy
- French International School of Philadelphia
- Friends Central School
- Gladwyne Montessori
- The Haverford School
- Lutheran Church of St. Paul's
- Merion Mercy Academy
- Montgomery Country Day
- Rosemont School of the Holy Child
- St. Aloysius Academy
- Raymond and Ruth Perelman Jewish Day School
- Temple Adath Israel
- Timothy
FIRE AND RESCUE STATIONS

RISK ASSESSMENT (continued)

- Torah Academy
- Waldron Mercy Academy
- Wetherhil.

Colleges and Seminaries

- Bryn Mawr College
- Eastern Baptist Theological Seminary
- Harcum
- Haverford
- Foundation for Islamic Education
- Rosemont
- St. Charles Borromeo Seminary
- St. Joseph’s University

Medical Care

- Lankenau Hospital
- Bryn Mawr Hospital

Long-Term Convalescent Care

- Beaumont Retirement Community
- Knox Home
- Mary Drexel Home
- Waverly Heights
- Rosemont Manor Nursing Home
- New Sharon Convent
FIRE AND RESCUE STATIONS

RISK ASSESSMENT (continued)

Rail Lines

- Septa passenger lines
- Amtrak: Ardmore Station
- Norfolk Southern: freight line

Major Highways

- City Avenue (U.S. Route 1)
- Lancaster Avenue (U.S. Route 30)
- State Route 320
- Conshohocken State Road (State Route 23)
- Blue Route Expressway (I-476 (Blue Route))
- Schuylkill Expressway (I-76 (Expressway))

Hazardous Materials Risks

Reportedly, although Lower Merion only has twelve hazmat sites, there is a fairly substantial rail network that runs through the Township with an estimated (2005) 370,000 to 940,000 rail tons of hazardous materials. The Township also covers I-76 and portions of I-476, considered major carriers (1,500,000 to 4,300,000 truck tons) of wheeled hazardous materials, as estimated in a recent commodity flow study received by the County.

It is estimated that hazardous material risks are a moderate threat to the Township. Reportedly, there have been two rail incident and several truck incidents over the last several years.
FIRE AND RESCUE STATIONS

RISK ASSESSMENT (continued)

Summary of Risk Assessment

This list of educational and medical facility type fire and rescue risks is intended to provide an example of the extent and types of properties reportedly located in the Township of Lower Merion. The Township of Lower Merion clearly includes a broad range of moderate to significant fire and rescue risks that must be protected and served when necessary.

DETERMINING FIRE STATION LOCATIONS

There are a number of criteria utilized in considering the location of fire and rescue stations.

ISO Criteria

The fire suppression rating schedule utilized by the Insurance Services Office (ISO) in its evaluation of the performance of municipal fire suppression capabilities includes fire station location analysis with objective mileage-based criteria. Item 560 in the Fire Suppression Grading Schedule, Edition 6-80, reads as follows:

"The built-upon area of the city should have a first-due engine company within 1.5 miles and a ladder-service company within 2.5 miles."

The ISO considers the optimum physical location of engine companies and ladder companies essential to earning the maximum number of credits under the fire department item in the rating schedule. Obviously, engine companies and ladder companies are placed in fire stations. Therefore, it is the location of the fire station that becomes important to the evaluation process used by the ISO.
FIRE AND RESCUE STATIONS

DETERMINING FIRE STATION LOCATIONS (continued)

Fire Risks

The time from ignition until water is applied to a fire should be no longer than the six to nine minutes it takes for flashover to occur with a free-burning fire. Again, flashover is defined as essentially the instant burning of an explosive mixture of heated air, smoke and gases which flashes back through openings around the fire area, such as doors and windows. This does not consider a smoldering fire, which can burn for hours before breaking out into the free-burning stage.

Flashover is a critical stage of fire growth for two reasons. First, no living thing in the room of origin will survive, so the chances of saving lives drops dramatically. Second, flashover creates a quantum jump in the rate of combustion, and a significantly greater amount of water is needed to reduce the burning material below its ignition temperature.

A fire that has reached flashover means it is generally too late to save anyone in the room of origin, and substantially more staffing is required to handle the larger hose streams needed to extinguish the fire. A post-flashover fire burns hotter and moves faster, compounding the search and rescue problems in the remainder of the structure at the same time that more firefighters are needed for fire attack.

For these reasons, it is critical that fire suppression forces reach a fire structure and initiate effective suppression efforts prior to flashover.

Computerized Station Location Analysis

The Study Team utilized a computerized modeling program to assess fire station locations. A travel time analysis that involved every street in the Township, the response area for the fire companies, was conducted. The response time that was projected included the time from which the units began to respond to when the first unit arrived on the scene, but did not
FIRE AND RESCUE STATIONS

DETERMINING FIRE STATION LOCATIONS (continued)

include any pre-determined time period for the unit to prepare and leave the fire station. This period of time was not included due to an inability to calculate the time it would take for volunteers to respond to the fire station. Using this analysis, the average travel time, total miles of roadway, average travel speed and using projected “first in” response areas for each current fire station were obtained.

Response paths from each fire station site to every street location were calculated. Finally, each fire station response area was projected and average apparatus turnout time, travel time, average travel speed, and total miles of streets in each fire station area were calculated. The Study Team modeled the current fire station locations in the Township. The projections on fire station locations are discussed in the following sections.

NFPA 1720 Standard

There are a number of applicable NFPA standards and practices that include response time considerations important to fire officials nationwide.

NFPA 1720 is an industry standard that serves as a benchmark for the fire department organization and deployment of services offered by firefighters. It is the standard for combination volunteer/paid and volunteer fire departments that describes the requirements for delivery of services, response capabilities, incident management, and strategy.

This standard includes the following benchmarks related to call receipt and processing time, turnout time, and response (travel) time:

1. Turnout time of one minute on fire suppression and EMS calls; and,

2. The fire department’s fire suppression resources deployed to provide for the arrival of an engine company within a four-minute response time and/or the
FIRE AND RESCUE STATIONS

DETERMINING FIRE STATION LOCATIONS (continued)

initial full alarm assignment within an eight-minute response time to 90 percent of the incidents.

It should be noted that the various standards and criteria discussed in previous sections placed a high priority on both the effective delivery of fire and EMS service and the protection of life and property. Moreover, the safety of the firefighters and officers delivering the services and the safety of the customer and stakeholder were important considerations to the development of these standards and criteria and to their application by the Study Team for Lower Merion.

Lower Merion Response Time Goal

Based on the response time-related criteria and standards outlined above, the Study Team utilized the response time goal of four minutes for the first arriving unit—engine, truck, or rescue. It should be noted that for purposes of this evaluation “response time” is considered to be the projected time for apparatus to travel to the scene.

FUTURE STATION LOCATION NEEDS

Current Station Locations

Current fire and rescue services in the Township of Lower Merion have been provided from seven fire stations:

Fire Stations

1. Fire Station 22 - Belmont Hills Fire Company
   4 S. Washington Avenue, Belmont Hills
FIRE AND RESCUE STATIONS

FUTURE STATION LOCATION NEEDS (continued)

2. Fire Station 23 - Bryn Mawr Fire Company
   901 Lancaster Avenue, Bryn Mawr

3. Fire Station 24 - Gladwyne Fire Company
   1044 Black Rock Road, Gladwyne

4. Fire Station 25 - Merion Fire Company of Ardmore
   35 Greenfield Avenue, Ardmore

5. Fire Station 26 - Narberth Fire Company
   100 Conway Avenue, Narberth

6. Fire Station 21 - Penn Wynne/Overbrook Hills Fire Company
   Manoa and Rock Roads, Wynnewood

7. Fire Station 28 - Union Fire Association of Lower Merion
   149 Montgomery Avenue, Bala Cynwyd

Figure 4.1 illustrates the fire stations located in Lower Merion.

Fire Station Location Factors

To determine future fire and rescue station needs in the Township where consideration may need to be given to adding, relocating or eliminating a fire or rescue station, the Study Team considered a number of factors, including:

A. Available response time data—data from Firehouse Software;

B. Current and projected Township development;
Figure 4.1

LOWER MERION FIRE STATIONS

Belmont Hills

Bryn Mawr

Gladwyne

Ardmore

Carroll Buracker & Associates, Inc.
LOWER MERION FIRE STATIONS
(Continued)

Narberth

Penn Wynne

Union Fire Association
FIRE AND RESCUE STATIONS

FUTURE STATION LOCATION NEEDS (continued)

C. Largely volunteer nature of the staffing of apparatus;

D. Location of the homes of responding volunteer staffing;

E. Estimated typical turn-out time: time from dispatch to first unit responding;

F. Reported limited number of volunteer drivers during certain hours;

G. Historical nature of involvement of fire stations in communities;

H. Limited on-duty paid staffing of apparatus;

I. Deployment of paid firefighters on apparatus responding to incidents;

J. Current and projected service provider workload data;

K. Response time projections using geographic information system (GIS) tools;

L. Limited service provision by mutual aid companies; and,

M. Input from service providers.

Changing Current Fire Station Locations

Based on all the factors considered, as outlined in the previous section, the Study Team is of the opinion that, given the largely volunteer nature of fire and rescue service delivery staffing, any change in the location/configuration of the fire stations appears to not be justified, at this time.
FIRE AND RESCUE STATIONS

FUTURE STATION LOCATION NEEDS (continued)

The Township seems well-covered with excellent travel times from each of the fire stations. The majority of the Township is covered within a two to three minute response area from each of the fire stations. Further, a small area of the western end of the Township in the vicinity of Mt. Pleasant Road west of Spring Mill Road is projected to be within a 3-4-minute response time of the Bryn Mawr and Gladwyne fire stations. Considering the fact that national standards and accepted practices within the fire protection industry call for a maximum response time goal of four minutes, the projected response time minutes within the Township is appropriate.

When considering the ISO standard of a 1.5 mile response area for one engine company responding from a fire station, the distance between the fire stations could be up to three road miles while still meeting the ISO standard.

Potential Future Reduction/Relocation of Fire Stations

In the event that the future staffing approach were to change significantly with a reduction in volunteer participation, requiring staffing of primarily paid employees supplemented by volunteers, a reconfiguration (closure or combination) of the fire stations in Lower Merion could be justified. This potential reconfiguration could be justified at that time based on a reduction in turn-out time (time from dispatch to apparatus response) since personnel would be primarily in the fire stations without reliance on volunteers responding from home or work, etc. In that event, the Township could be well-served with fire and rescue apparatus responding from fewer fire stations within the Township.

The Study Team is not suggesting that this option of combining fire stations should be implemented at this time. Currently, the fire stations are supported by volunteer firefighters and officers who may respond from their homes, some of which are located in the vicinity of each respective fire station. Further, the fire stations serve as the headquarters for each of
FIRE AND RESCUE STATIONS

FUTURE STATION LOCATION NEEDS (continued)

the fire companies, and have rich and colorful histories of providing cost-effective fire protection to the Township.

The option of combining fire stations to more centrally located facility/s is suggested for possible consideration in the future in the event that volunteer activity declines and increased paid staffing is required to maintain service levels.

CONDITION OF CURRENT LOWER MERION FIRE STATIONS

This section outlines the Study Team’s assessment of the condition of the current Lower Merion fire stations. The fire stations were visited a number of times by the Study Team as part of the on-site assessment process of this Study. The following summarizes the resulting analysis of the condition of each fire station and the need for appropriate action by the Township for the continued serviceability of each fire station for the future.

1. Fire Station 22, the Belmont Hills Fire Company station located at 4 S. Washington Avenue in Belmont Hills, was reportedly originally built in 1925.

   The building underwent major addition work in 1936, and in 1957 the fire station was altered to move the apparatus room to a new location within the structure. Finally, more recently, in 1999, this fire station was renovated to include major engine room and front ramp work. On the second floor, work involving the bunkroom, offices, kitchen, lounge, board room and hall entrance was accomplished. The bunkroom includes two bunks, essentially provided for the paid staff.

   Currently, this fire station is considered to be in good condition, but needing some further facility upgrade work.
FIRE AND RESCUE STATIONS

CONDITION OF CURRENT LOWER MERION FIRE STATIONS (continued)

The dimensions of the property on which this fire station is built is 110' by 141' a total of 15,100 square feet of property. The fire station includes three engine bays, none of which are “double length.” Fire company officials advised the Study Team that a number of changes/improvements are planned for the next five years that include:

- Replacing windows
- Installing new driveway wall
- Upgrading the front apron and engine room floor
- Repairing the roof
- Adding new parking surface
- Installing a permanent ladder for roof access

2. Fire Station 23, the Bryn Mawr Fire Company facility, was originally built in 1906 and is located at 901 Lancaster Avenue in Bryn Mawr. Through the years the following renovation work was done involving the station:

- 1963 - Apparatus engine room wood floor replaced with concrete
- 1984 - Basement finished by volunteers
- 1994 - Ladder bay floor reinforced, added exercise room, TV room on second floor and chief’s office on first floor

This fire station includes four apparatus bays, none of which are “double length,” and includes a bunkroom with three bunks. It is built on a small piece of property that is 59' by 127' and includes a total square footage of 8,930. It is currently considered to be in good condition. The capital budget program includes a number of facility upgrades, as follows:

- 2007 - $120,000 for second floor construction
FIRE AND RESCUE STATIONS

CONDITION OF CURRENT LOWER MERION FIRE STATIONS (continued)

- 2008 - $130,000 for roof replacement
- 2009 - $105,000 for concrete front apron replacement for 4 bays

3. Fire Station 24 is the Gladwyne Fire Company fire station located at 1044 Black Rock Road in Gladwyne. This facility was built in 1952. In 1973, a three-bay engine room addition was completed. As the Study Team was conducting this Study in June 2007, the following renovation and addition work was being performed as part of a Township-funded capital project:

- Fourth engine room bay
- Second story addition
- One story crew room

When this current construction work is completed, the fire station should be in excellent condition with a total of 10,210 square feet of space. The renovated facility will include bunkroom space for eight men's and four women's bunks.

4. Fire Station 25 is the Merion Fire Company of Ardmore fire station built in 1997 at 35 Greenfield Avenue in Ardmore, with a total of 11,728 square feet built on property that is 160' by 45'. Subsequent to being built, a number of upgrades have been done, including:

- 2006/2007 - More efficient heat and air zoning system
- 2007 - Chair rail and ceiling tiles in the back room
- 2005 - Closed area for SCBA air bottle storage
- 1999 - Built bar back room
FIRE AND RESCUE STATIONS

CONDITION OF CURRENT LOWER MERION FIRE STATIONS (continued)

The current facility is considered to be in good condition. It includes four offices and bunkroom space for four men and four women. For the future, fire company officials indicated their intention to add new side back doors and new storage cabinets in the work area.

5. Fire Station 26, located at 100 Conway Avenue in Narberth, is the fire station utilized by the Narberth Fire Company. This facility was built in 1960 and is co-located with the Borough of Narberth municipal center. It includes four apparatus bays, two of which are double length.

The Narberth fire station is built on 12,000 square feet of property, has a bunkroom with one bunk and is considered to be in good condition. The Borough provides the primary financial support for the Narberth Fire Company and its fire station.

6. Fire Station 21 is utilized by the Penn Wynne/Overbrook Hills Fire Company, which is located at Manoa and Rock Roads in Wynnewood. The Penn Wynne fire station was built in 1931. Since that time a number of facility modifications have been made including the following:

- 1952 - Addition of the apparatus bay for the ladder
- 1997 - Kitchen, ADA restroom and boiler room were modernized
- 2001 - Old chimney removed from the engine bay
- 2006 - Slate roof replaced

The station is built on property that is 99' by 110.5'. The building currently includes three apparatus bays, a bunkroom that sleeps two, no office space and has a total square footage of 4,200. It is considered to be in fair condition.
FIRE AND RESCUE STATIONS

CONDITION OF CURRENT LOWER MERION FIRE STATIONS (continued)

According to fire company officials, the facility functions well, but more space for bunkroom, exercise area, some private office and storage area would improve functionality. Consideration is being given to increasing the size of the second floor of the fire station to provide for this additional needed space.

7. **Fire Station 28**, built in 1903, supports the Union Fire Association and is located at 149 Montgomery Avenue in Bala Cynwyd. This fire station was built on property with dimensions of 137' by 67'. Since 1903, an addition to the rear of the fire station was added and in 2004 a major, Township-funded, interior renovation project was initiated that reportedly remains to be completed.

Apparently, a contractor was hired by the Township for the 2007 budgeted second floor work with mixed to poor results, since reportedly, as of July 2007, much work remains to be completed or was not completed appropriately, including:

1. Basement carpet damaged by flooding;
2. New elevator electrical surge issues;
3. HVAC issues over bathrooms and kitchen upstairs;
4. Air infusion problem into the basement mechanical room causing freezing;
5. Canopy on Tregaron Road needing completion;
6. Handrails on hall stairs needing completion;
7. Facade on front of building needing completion; and,
8. Vinyl molding in basement never finished.

Apparently, there was a need for an aggressive effort on the part of the Township and fire company staff to deal with these issues for appropriate
FIRE AND RESCUE STATIONS

CONDITION OF CURRENT LOWER MERION FIRE STATIONS (continued)

completion. Reportedly, work is underway to obtain bids and a successful vendor to do the 2008 roof replacement work.

According to fire company officials, additional work that needs to be accomplished in the future includes repointing the stone work, replacement of aluminum siding with vinyl siding to match on barn, repainting the exterior of the facility and a roof, barn, front and rear flat roofs.

FIRE FACILITIES CAPITAL PROJECT

This section reviews past fire station-related capital assessment and planning efforts and the Fire Companies Facility Project, and suggests a few currently needed remaining facility projects for consideration by the Township’s Board of Commissioners.

Past Facility Assessments and Recommendations

The July 1990 Fire Study Survey of the Township of Lower Merion prepared by Burkell & Associates, included a broad-based assessment of the condition of the six (not including Narberth) fire stations serving the Township and provided a significant list of facility needs on a station-by-station basis. The identified facility needs of the six fire stations were as follows:

1. Merion Fire Company: “needs to be replaced as soon as possible;”
2. Belmont Hills Fire Company: “needs to be replaced or sustain major renovation;”
3. Union Fire Association: “needs to be replaced or sustain major renovation;”
4. Bryn Mawr Fire Company: “needs to be replaced or sustain major renovation;”
5. Penn Wynne - Overbrook Hills Fire Company: “needs to be replaced or sustain major renovation;” and,
FIRE AND RESCUE STATIONS

FIRE FACILITIES CAPITAL PROJECT (continued)


In short, the Burkell study identified major facility needs involving the Lower Merion fire stations, with one recommended for replacement and four recommended for either replacement or major renovation.

Subsequently, in recognition of the need for substantial replacement or upgrades to five fire stations, they engaged an architectural/engineering firm to provide comprehensive facility assessments and recommendations. In 1994, the Vitetta Group produced the 1994 Condition Assessment Study of Six Fire Houses (not including Narberth Fire Station 26) report for the Township that has served as the basis for a significant amount of needed facility renovation and upgrade work involving the Lower Merion fire stations.

It appears that, to a large extent, most of the previously identified priority fire station facility improvement projects have either been completed or are in the process of being completed.

The Township should be commended for taking the initiative and committing the funding for this major Study and subsequent fire station improvement work. During the course of this project, the Study Team heard a significant amount of positive comments from fire company officials and members recognizing the positive nature of this substantial commitment of time, effort and funding to improving the Lower Merion fire stations.

Fire Companies Facility Project

The Study Team was provided with copies of the Township’s annual Fire Companies Facility Project for the fiscal years 1996 through 2007; this fiscal plan is intended to provide funding for major repairs and renovations to fire stations. The stated justification for the project is that it “...provides a funding source for the implementation of the Fire Station Building Conditions Assessment Study to keep the Township’s six fire stations in good condition.”
FIRE AND RESCUE STATIONS

FIRE FACILITIES CAPITAL PROJECT (continued)

In reviewing past and current year funding of fire station capital projects, it is clear that the Township has placed a high priority on upgrading and maintaining the fire station facilities.

The FY2007 Fire Companies Facility Project includes the following relating to the needs to be addressed in current and future years through the project. They include:

1. **Gladwyne**: completion of the major renovation of the fire station;
2. **Bryn Mawr**: installation of a fire alarm, addition of a chief's office and a crew/training/bunkroom;
3. **Ardmore**: engine room floor repair, rear entrance doors replaced and exterior painting;
4. **Penn Wynne**: air conditioning system replacement;
5. **Union**: completion of a number of major renovation-related upgrades, including provision of a front facade on the front of the building; and,
6. **Belmont Hills**: door replacement.

For the future, previously approved fire station facility projects not having been completed to date should be implemented. Any facility needs identified in the previous section of this Chapter and not included in the above list should be incorporated in the project for funding and implementation. Priority for implementation should be placed based on safety, comfort, functionality and appearance, in that order.

**Bunkroom Expansion Project**

A previous section of this Chapter discussed the need for upgrading the bunkroom facilities in Township fire stations as an important means of supporting and facilitating volunteer involvement in the provision of fire and rescue services in Lower Merion. To a large extent, it appears to the Study Team that the goal in the past has been to meet the overnight
FIRE AND RESCUE STATIONS

FIRE FACILITIES CAPITAL PROJECT (continued)

bunkroom needs of paid staff with little attention to the significant benefits of providing substantial overnight bunkroom facilities for volunteers.

Providing bunkroom space for volunteers may have a direct impact on the ability of each fire company to respond immediately with apparatus that is more adequately staffed. The availability of bunkroom space for “live-in” volunteers as well as volunteers on overnight standby status is an essential element to encouraging the volunteers to remain at the fire station and be available to respond on apparatus.

A priority should be placed on assessing the current bunkroom facilities at all Lower Merion fire stations and providing funding to expand those important areas. The provision of bunkroom facilities in all fire stations for volunteer utilization is, in the view of the Study Team, of critical importance to the future of the volunteer component of the Lower Merion fire protection services.

Agreement for Fire Station Repair/Renovation Policy

An agreement between the Township and six fire companies was established in March 1995 relating to various aspects and mutual roles and responsibilities of the parties in the implementation of Township-funded repairs and renovations of fire company facilities. That agreement, signed by officials of the Township and six fire companies (not including Narberth) seems appropriate and applicable in the Township of Lower Merion circumstance. In the event that the Township and Borough choose to develop a team approach involving the Narberth fire station, a similar agreement may be needed for that facility with the Narberth Fire Company.
FIRE AND RESCUE STATIONS

SUMMARY

The location of the fire station facilities is a key element in the level of fire protection and rescue service that is provided. The decision to build a new fire and rescue station or relocate an existing one has many components other than its location. While computerized programs can assist officials in making decisions relative to station location, there is no magic formula for determining the location of fire/rescue stations. The final determinations require human-based consideration of many factors.

One key consideration in determining a fire and rescue station location for fire-related services is the maximum total response time (travel and turnout time) which would be acceptable. In fires, response time should be kept short enough to ensure that the total average time does not exceed the six- to nine-minute flashover time.

The availability and assessment of detailed response time data is an essential part of the process of analyzing the adequacy of the service. A reduction in actual response times to emergency incidents is a measurable improvement in the service being delivered. For that reason, assessment of response time is not only an essential component of fire and rescue station location determination, it is an important ongoing function of fire department management and operations. For the future, the Township of Lower Merion fire and rescue service providers should participate in the review and analysis of their response times; the goal should be to reduce response times, to the extent possible.

Fire and rescue services in the Township of Lower Merion have been provided from seven fire stations. A review of the location of these facilities does not indicate the need for change at this time.

The condition of current fire station facilities was addressed and recommendations for future capital improvement program components was outlined. A priority should be placed on the development of bunkroom facilities in all Lower Merion fire stations to support and facilitate in-station volunteer staffing 24 hours per day.
FIRE AND RESCUE STATIONS

RECOMMENDATIONS

4.1 The Township, LMFD and fire company chiefs are encouraged to analyze response time data to determine opportunities for reducing response times.

4.2 In the future, the Township of Lower Merion and LMFD are encouraged to consider a reconfiguration of fire station facilities, if the active volunteer membership of one or more fire companies drops substantially.

4.3 The Township, LMFD and fire companies are encouraged to conduct a bunkroom facility assessment and place a priority on providing adequate bunkroom facilities in all fire stations to enhance nighttime staffing of fire apparatus.

4.4 The Township and LMFD should consider appropriately revising and funding fire station-related capital projects with priorities established based on relative need and available funding.

4.5 The Township should consider establishing a team approach with the Borough of Narberth in the funding of Narberth fire station facility needs.
CHAPTER FIVE:
FIRE APPARATUS FLEET