Mt. Lebanon Fire Department

Standards of Response Coverage – 2019 Update

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INTRODUCTION

The following report serves as the Mt. Lebanon Fire Department's "Integrated Risk Management Plan: Standards of Cover" document. The Commission on Fire Accreditation International (CFAI) defines the process, known as "deployment analysis," as written procedure which determines the distribution and concentration of fixed and mobile resources of an organization. The purpose for completing such a document is to assist the agency in ensuring a safe and effective response force for fire suppression, emergency medical services, and specialty response situations in addition to homeland security issues.

Creating an Integrated Response Management Plan: Standards of Cover, requires that a number of areas be researched, studied, and evaluated. The following report will begin with an overview of both the community and the agency. Following this overview, the agency will discuss areas such as risk assessment, critical task analysis, agency service level objectives, and distribution and concentration measures. The agency will provide documentation of reliability studies and historical performance through charts and graphs. The report will conclude with policy recommendations.

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EXECUTIVE SUMMARY

The Mt. Lebanon Fire Department's *Standards of Response Cover*age document was originally published in May of 2009 as part of the Commission on Fire Accreditation International's Accreditation Process. In updating the document annually since, the Department has verified information gathered as part of the original community-wide risk assessment that included an analysis of the physical, economic, sociologic, and demographic aspects of the community to assess the hazards and risks present. The analysis required the use of large amounts of data in order to validate the amount and type of assets needed within the Municipality. The risk assessment includes a description of exposure to disasters and the ability of the Department to perform within the environment.

Contained within this document is a community risk assessment. It is a listing of unique and common hazards within the community. Non-fire related events have been classified on the frequency and probability of an event happening and the consequences that it would have. Fire-related risks, based on occupancy vulnerability scores, including frequency, probability and consequence, have been classified as special, high, moderate, and low risk.

Based on identified risks, the Department will continue to take an "All Hazards" approach to service delivery by providing a wide-range of proactive and reactive fire and emergency services. These services include fire suppression, first responder emergency medical services, routine hazards response, technician level vehicle & machinery and hazardous materials response, fire prevention inspections, fire investigations, and fire prevention & life safety education programs.

The balance of this document describes unique facts about the community, the resources and staffing used to deliver services, and details of what our members do when they arrive at emergencies. The document culminates with statistically-based performance measures that demonstrate that we are performing at a high level.

The Department will continue to provide for analysis and evaluation of the *Standards of Response Coverage* to allow for adjustments in response performance and staffing requirements. Annual evaluations of all programs and services are conducted to ensure that performance goals are evaluated and an effort is made to reach and/or maintain service levels. In addition, the Department submits to the Municipality, on an annual basis, departmental goals and objectives and a performance report. The *Standards of Response Coverage* shall continue to be the basis for the prioritization and allocation of resources.

The Department believes that its adopted performance goals are realistic benchmarks based on the community, fire department, and municipal expectations and resources. In 2018, the department celebrated 100 years of service to the community. Four members retired creating opportunities for the promotion of two lieutenants to deputy chief and the hiring of four new lieutenants. A new engine was placed into service, the strategic planning committee worked to develop an updated plan for the years 2019-2025, and a full-scale emergency management exercise was conducted with the assistance of several community stakeholders.

Section 1: Description of Community Served

Legal Basis for Agency

The Department has been legally established per the Mt. Lebanon Municipal Code and Home Rule Charter. The maintenance of a volunteer department to supplement the efforts of the Mt. Lebanon Fire Department is authorized under the Mt. Lebanon Municipal Code, Chapter IV, Part 2, Section 201. The volunteer department was officially chartered by the Court of Common Pleas of Allegheny County on May 20, 1939. The supervision and control of the fire department is granted to the Fire Chief, who is responsible to the Mt. Lebanon Commission, under Chapter IV, Part 2, Section 205.

Agency History

Mt. Lebanon Volunteer Fire Department was established in 1918 when a special committee reported to the Mt. Lebanon Commission, verbally advising the Commission of proposed plans for the organization of a volunteer fire department. The Department was reorganized into the Mt. Lebanon Fire Department on February 9, 1920 at the request of the Commission. The volunteer department was officially chartered by the Court of Common Pleas of Allegheny County on May 20, 1939.

In April of 1929, the Township Manager submitted a request to employ two paid fire fighters. At the May, 1929, Commission Meeting, J.E. Woods was transferred from the Police Department and appointed as Chief of the Fire Department. Chief Woods and Assistant Chief David Hasley were paid a salary of $150.00 a month. In 1931, a third full-time fire fighter was added, 2nd Assistant Chief John Richey.

In 1956, full-time staffing was increased from 8 to 9 personnel, allowing for at least two fire fighters on each shift and two additional fire fighters on day shift and to cover time off. Between 1956 and 1999, as the number of calls and the demands for services increased, full-time staffing also increased to its current level of 17 full-time fire fighters.

Full-time staff members, excluding the Chief and Assistant Chief, are assigned to one of five platoons, each of which is responsible for a specific staff function. These staff functions include: Fire Prevention & Life Safety Education, Operations & Emergency Management, Training, Resource Management, and Community Outreach & Marketing. Each platoon is assigned three staff members who work a schedule consisting of two 10-hour days, two 14-hour nights, followed by four days off, with the exception of the Fire Prevention and Life Safety Education Platoon, which works four 10-hour days. Typical staffing ranges from two to three personnel on nights and weekends to four to eight personnel on day shift during the week, when volunteer turnout is expected to be low.

Profile of Governing Authority

Originally part of St. Clair, then Upper St. Clair and later Scott Townships, Mt. Lebanon was created as a separate township on February 6, 1912, after the third referendum on the issue had gone to the voters. Organized as a “township of the first class,” in 1928, Mount Lebanon became the first 1st Class Township in Pennsylvania to adopt the council-manager form of government and has had an appointed manager serving as the chief administrative officer since that time.

In 1975, Mount Lebanon ceased to be a township and became one of the first municipalities in Pennsylvania to adopt a home rule charter. A home rule municipality in Pennsylvania is one incorporated under its own unique charter, created pursuant to the state's Home Rule and Optional Plans Law and approved by referendum. "Local governments without home rule can only act where specifically authorized by state law; home rule municipalities can act anywhere except where they are specifically limited by state law".

In 2016, the principal officers of the Municipality will be:

Municipal Manager, Keith McGill

Commissioner, Mindy Ranney – 1st Ward

Commissioner, Steve Silverman– 2nd Ward

Commissioner, Leeann Foster – 3rd Ward

Commissioner, Craig Grella - 4th Ward

Commissioner, Andrew Flynn - 5th Ward

The Municipality employs approximately 150 full-time, 163 part-time, and 120 seasonal employees and provides a full range of local government services. These services include police and fire protection; construction and maintenance of streets and municipal infrastructure; planning and zoning; park and recreational activities; library; public information services; and community events.

The municipal (Figure 1) and department-level (Figure 2) administrative structures that carry out the agency's mission and reflects the agency's mission, goals, objectives, size, and complexity, are defined in Chapter I of the Mt. Lebanon Code, and approved by the governing body.

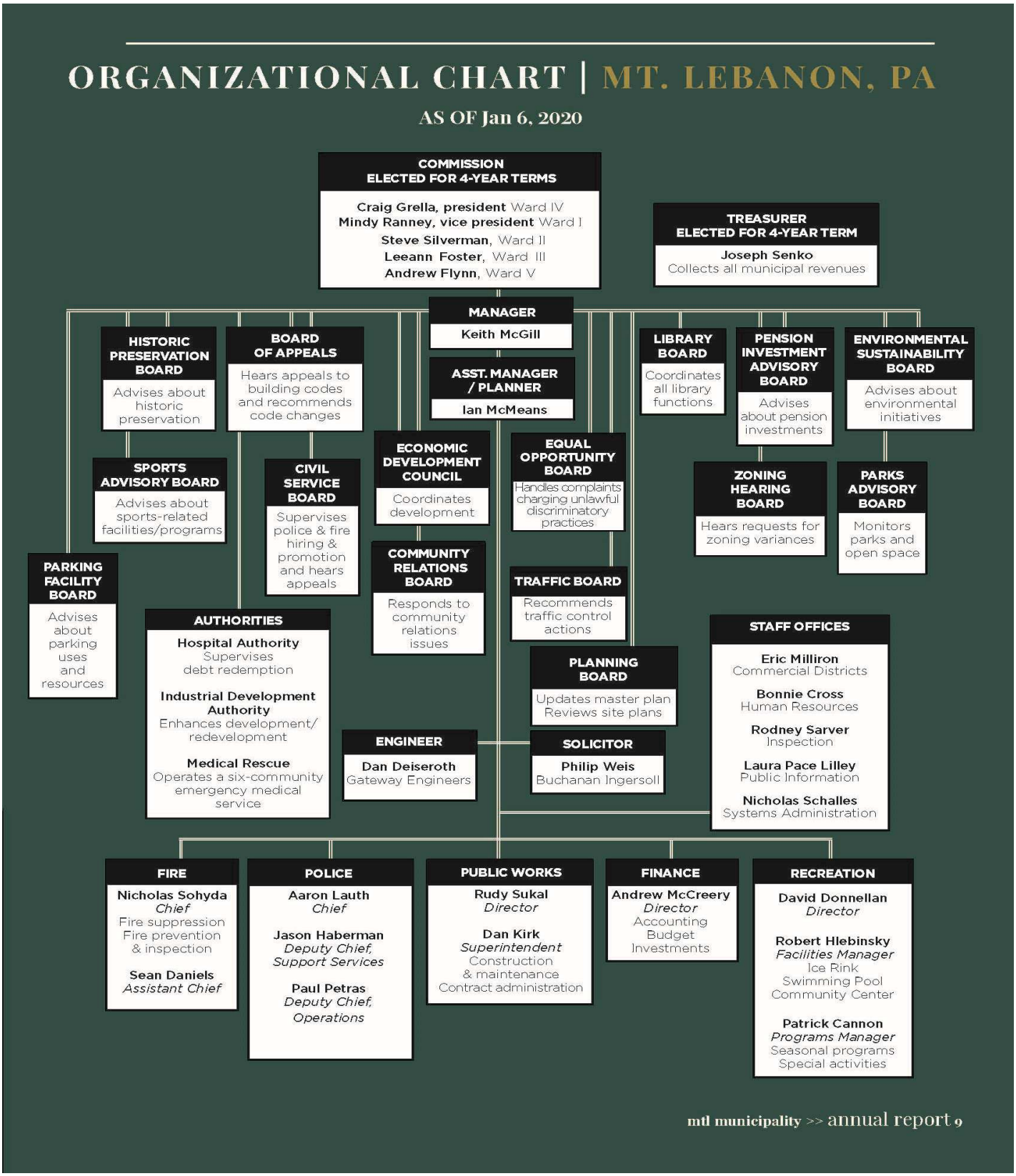


Figure 1: Organizational Chart – Mt. Lebanon, PA

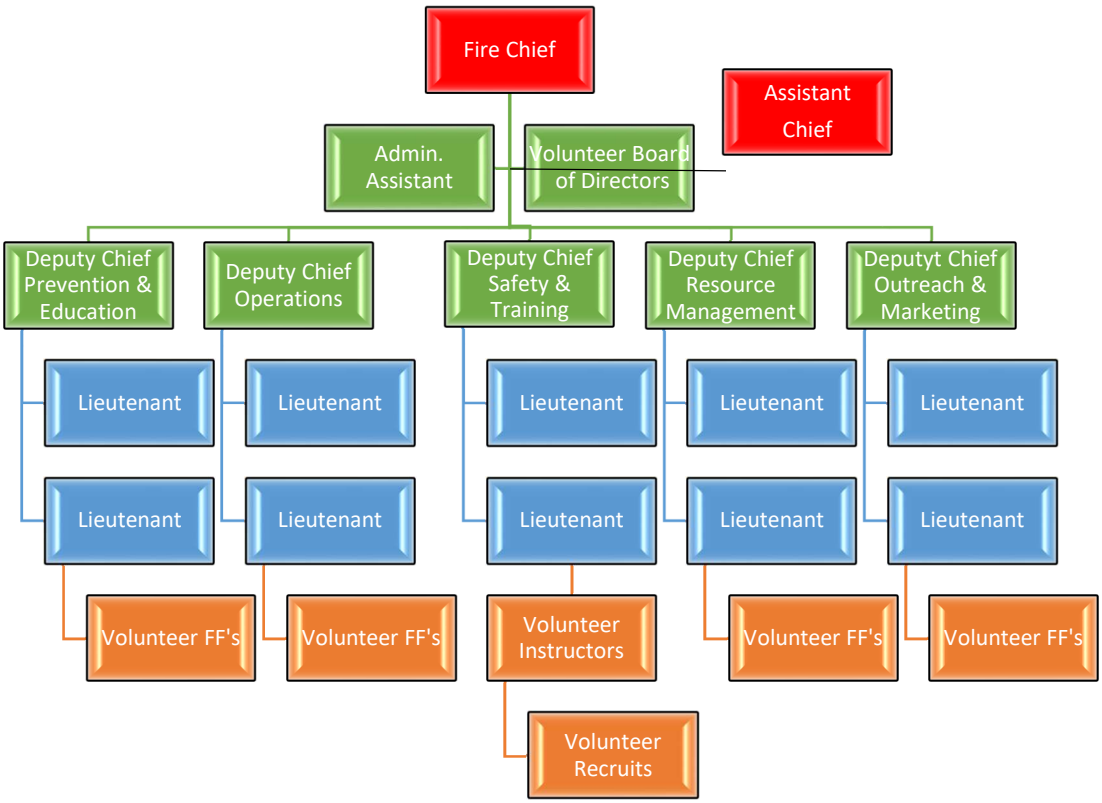


Figure 2: Mt. Lebanon Fire Department Organizational Chart

The Municipality reviews and approves programs and ensures compliance with basic governmental policies. Municipal reviews and approvals are accomplished via a combination of (1 a review and approval of the department's strategic plan and annual goals and objectives, (2 review and appr~~oval of the depart~~ment's standards of cover, (3 review and approval of monthly and annual reports, (4 passing of ordinances to meet changing needs and legal requirements, (5 and review of policies and contractual requirements by the human resources department and the municipal solicitor.

Profile of Jurisdiction Served

The Municipality of Mt. Lebanon covers approximately 6.05 square miles and is located in the County of Allegheny, in the Commonwealth of Pennsylvania, approximately 7 miles from Downtown Pittsburgh. There are two small borders with Pittsburgh neighborhoods to the northeast (Banksville and Brookline), but most of the northeast border is with the Borough of Dormont. Immediately north, the Borough of Green Tree has an intersection bordering Mt. Lebanon. The entire western border is with Scott Township. To the south are two towns which, due to their comparable size and affluence, are most often compared to Mt. Lebanon: Upper St. Clair Township to the southwest and the Borough of Bethel Park to the southeast. To the east is Castle Shannon Borough. To the northeast is Baldwin Township.

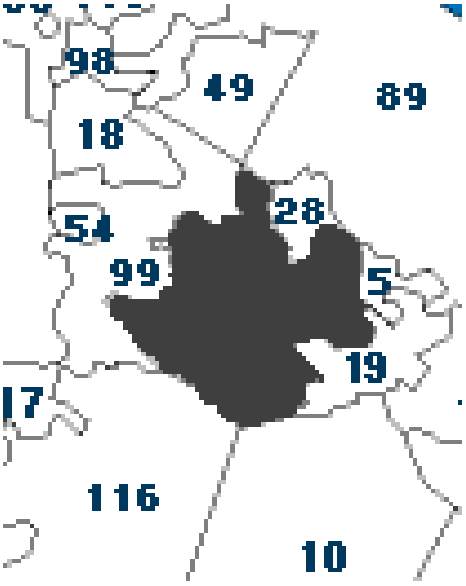


Figure 3: Mt. Lebanon Political Boundaries

City of Pittsburgh (89), Dormont Borough (28), Baldwin Township (5), Bethel Park (10), Upper St. Clair Township (116), Scott Township (99), and Green Tree Borough (49).

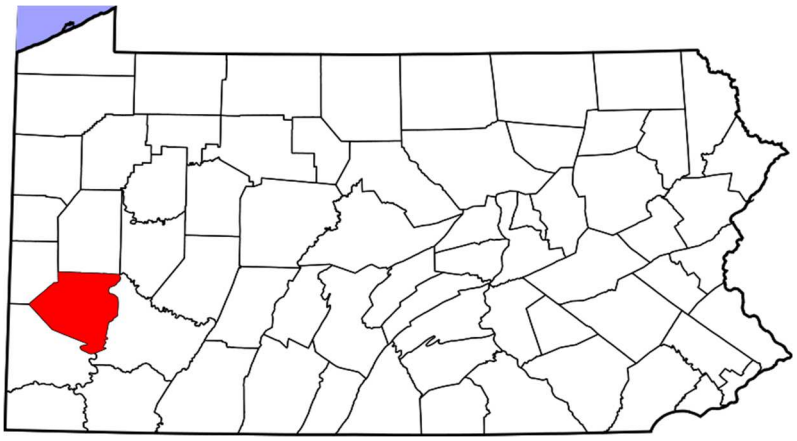


Figure 4: Map of Location of Allegheny County in Pennsylvania

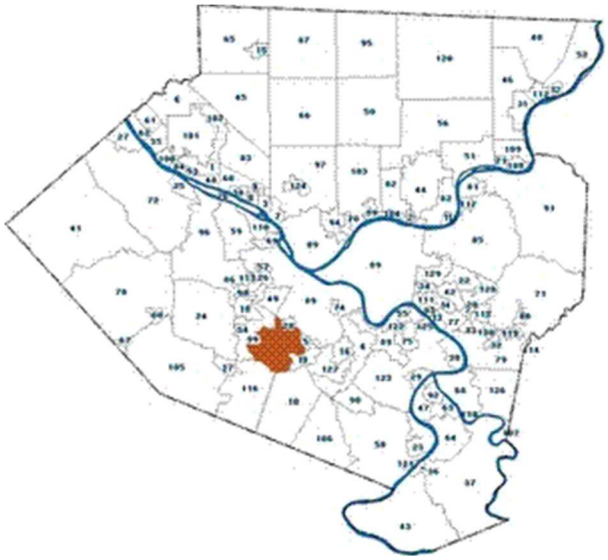


Figure 5: Map of Location of Mt. Lebanon in Allegheny County

Mt. Lebanon is an affluent community comprised primarily of commercial and residential districts. Uptown Mt. Lebanon is one of the more built up central business districts outside of Pittsburgh, featuring numerous coffee shops, small galleries, pizzerias, and clothing boutiques. There are sizable business districts along Mt. Lebanon's borders with Upper St. Clair and Castle Shannon, as well. Neighborhoods within Mt Lebanon include: Cedarhurst Manor, Hoodridge Highlands, Mission Hills, Sunset Hills, Virginia Manor, Twin Hills, and Woodridge.

Mt. Lebanon is well known in the region for its public-school system. Mt. Lebanon High School has been named a National Blue Ribbon School by the U.S. Department of Education each of the three times it requested certification, a Newsweek Magazine Top U.S. High School, and a U.S. News and World Report as one of America's Best High Schools. The seven elementary and two middle schools have been awarded with similar frequency. The High School is also widely recognized for having one of the best fine arts departments in the nation. The Keystone Oaks Middle / High School, serving the youth of the adjacent communities of Green Tree, Dormont and Castle Shannon and the Seton-La Salle Catholic High School, a Diocese of Pittsburgh school, are physically located within Mt. Lebanon's boundaries. St. Bernard's Catholic School (preschool through eighth grade) is also located in Mt. Lebanon.

Mt. Lebanon provides many recreational opportunities for its residents. Twelve parks are scattered throughout the community. In addition to the parks, there is an Olympic size outdoor swimming pool, open in summer, and a regulation size ice rink and recreation building located adjacent to Mt. Lebanon Park on Cedar Boulevard. Mt. Lebanon also boasts one of the oldest public golf courses in Western Pennsylvania and has several tennis and basketball courts which are open year-round.

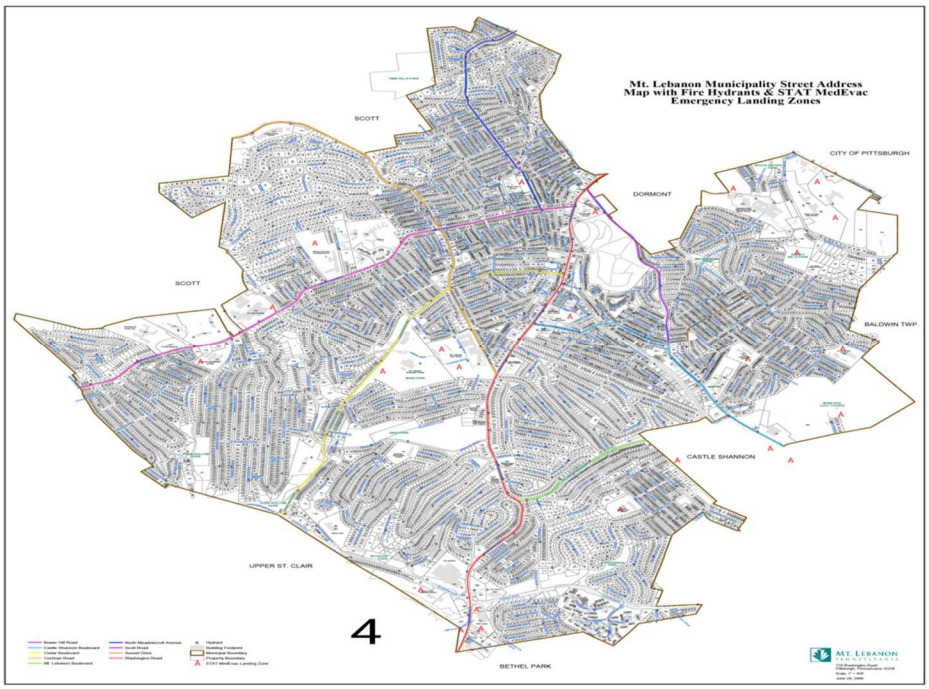


Figure 6: Street Map of Mt. Lebanon

The Mt. Lebanon Public Library, founded in 1932, is funded almost entirely by the Municipality and County. Its home is a $4.2 million building, with a collection of 174,105 documents, seats for 165 persons, and more than 50 public computers. When the building opened in 1997, it won an architectural design award and was featured in the architectural issue of Library Journal. Circulation is 563,000 items/year, and attendance averages 111 per hour.

A large portion of Mt. Lebanon (Figure 7) was listed as the Mt. Lebanon Historic District on the National Register of Historic Places in 2014. The district contains 3,341 contributing buildings and 21 contributing sites. Most of the buildings (89%) are residential, though two commercial areas are included.

The district is a significant example of the transition from a rural agricultural area to a suburb made possible first by the trolley/streetcar, c. 1901, and later by the automobile in the 1920s and 1930s with the opening of the Liberty Tunnels in 1924. The boundaries of the district include those areas that were developed between 1874 and c. 1945.

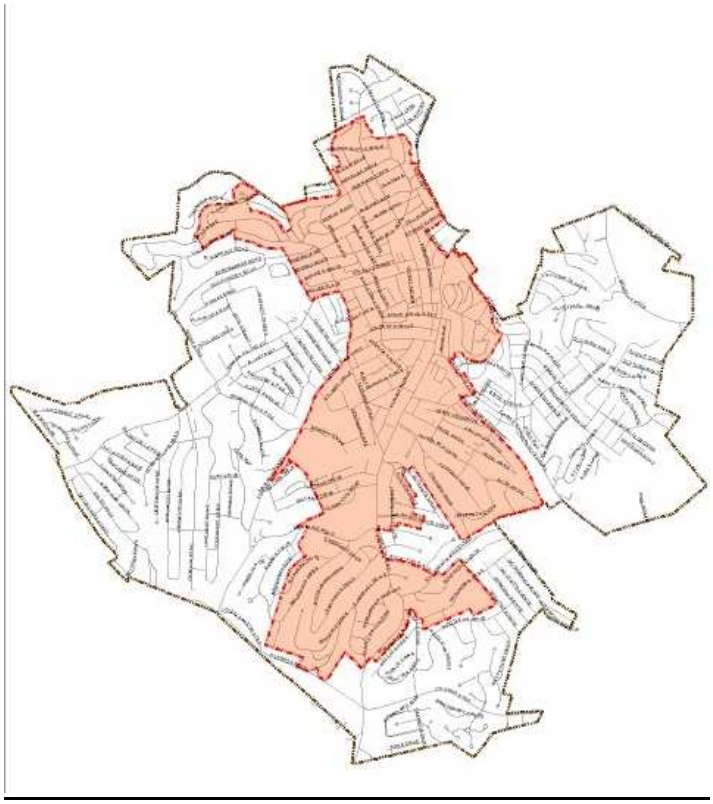


Figure 7: Mt. Lebanon Historic District

Buildings of Historical Value / Significance

Commercial and residential buildings of historical value / significance include:

Mt. Lebanon Municipal Building	710 Washington Road	1930
Washington Elementary School	735 Washington Road	1923
Mt. Lebanon High School "B" Building	155 Cochran Road	1930
St. Bernard's Church	311 Washington Road	1919
Mt. Lebanon United Presbyterian Church	255 Washington Road	1929
Southminster Presbyterian Church	799 Washington Road	1925
Cemetery Gatehouse	509 Washington Road	1890
Hugh Jackson House	1 Orchid Lane	1808
McCormick House	424 Kenmont Avenue	1857
Peter Mink House	811 Rockwood Avenue	1860
Samuel Carlisle House	1409 Bower Hill Road	1868
George Kennedy House	101 Dan Drive	1876

Demographics

Table 1: Census 2010 Demographic Profile

GENERAL CHARACTERISTICS			
Category	Number	Percent	U.S.
Total Population	33,137	-	-
Male	15,479	46.7%	49.1%
Female	17,658	53.3%	50.9%
Median Age	43.8	-	35.3
Under 5 Years	1,887	5.7%	6.8%
18 Years and Over	25,338	76.5%	74.3%
65 Years and Over	6,255	18.9%	12.4%
One Race	32,704	98.7%	97.%
White	31,014	93.6%	75.1%
African American	352	1.1%	12.3%
Asian	1,221	3.7%	3.6%
Hispanic	580	1.8%	12.5%
Total Housing Units	15,040	-	-
Occupied Housing Units	14,196	94.4%	91.0%
Owner-Occupied	10,129	71.4%	66.2%
Renter-Occupied	4,067	28.6%	33.8%
Vacant	844	5.6%	9.0%
Average Household Size	2.33	-	2.59
Average Family Size	3.06	-	3.14
SOCIAL CHARACTERISTICS			
Population 25 Years and Over	23,335	-	-
High School or Higher	22,821	97.8%	80.4%
Bachelor's or Higher	15,194	65.1%	24.4%
Disability Status	2,694	8.2%	19.3%
ECONOMIC CHARACTERISTICS			
Median Household Income	$71,013	-	$41,994
Median Family Income	$111,298	-	$50,046
Per Capita Income	$42,711	-	$21,587
Individuals Below Poverty Level	1,425	4.3%	12.4%

Although Mt. Lebanon is most definitely a suburb of Pittsburgh, the community's demographics actually portray an urban environment. The population density of over 5,300 people per square mile is clearly representative of that found in large cities. In fact, Mt. Lebanon's population density exceeds that of Oakland and San Jose, CA, Phoenix, AZ, Austin, TX and Portland, OR just to name a few. The community is heavily developed with very little room for growth.

Physical Assets

Residential Real Estate - Mt. Lebanon offers **a** diverse residential real estate market that includes rental units, condominiums, and single-family homes. The average residential property value was $196,100 in 2010. Outstanding municipal services, National Blue Ribbon Schools, distinctive neighborhoods, vibrant business districts, a complete recreational complex, an outstanding public library, and a variety of cultural opportunities make Mt. Lebanon a desirable place to live.

Mt. Lebanon's two periods of greatest growth were between the 1920s and '30s and in the 1950s and '60s. Most of the homes are in the styles that dominated those two eras, including elegant Tudors and Colonials of the '20s and '30s and the efficient Ranch Houses, Split-Levels and Post-War Traditionals of the '50s and '60s.

There are 177 multi-family dwellings in the Municipality, ranging in size from 3 units to over 100 units for a total of approximately 3,400 units. There are 10,668 single-family dwellings and 537 duplexes. According to the 2010 U.S. Census, there are 14,546 total housing units of which 13,993 are occupied. Of these units, 10,386 are owner-occupied and 3,607 are renter-occupied.

Table 2: Physical Housing Characteristics

UNITS IN STRUCTURE	OCCUPIED UNITS
1, detached	9,770
1, attached	898
2 units	537
3 or 4 units	87
5 to 9 units	622
10 to 19 units	479
20 or more units	2,135
YEAR STRUCTURE BUILT	
2005 or earlier	33
2000 or 2004	372
1990 to 1999	302
1980 to 1989	835
1970 to 1979	611
1960 to 1969	2,102
1950 to 1959	3,187
1940 to 1949	2,233
1939 or earlier	4,961

Virginia Manor is an affluent subdivision with some of the Municipality's largest and most expensive residential properties located in Geographic Planning Zone 1B. Some of the least expensive and oldest, closely-built residential dwellings are located in Geographic Planning Zone 5B, also the most densely populated area in the Municipality.

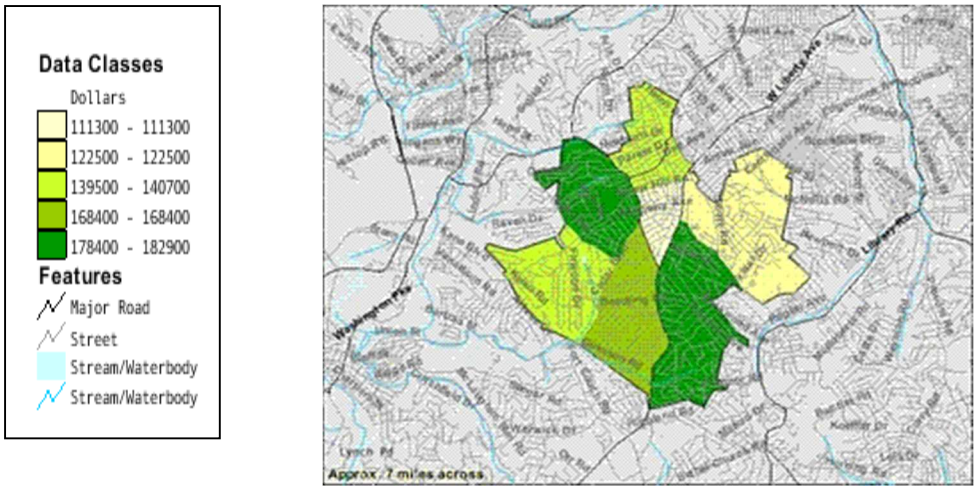


Figure 8: Median Home Value (2000 Dollars) of Single-Family Dwellings

Commercial Real Estate- Uptown Mt. Lebanon is the central business district and has Washington Rd. (U.S. Rt. 19 Truck) as its main thoroughfare. (U.S. Rt. 19 Truck continues into Pittsburgh and back out into the city's northern suburbs and beyond). Uptown Mt. Lebanon is one of the more built up central business districts outside of Pittsburgh, featuring fifty (50) commercial and retail buildings containing numerous coffee shops, small galleries, pizzerias, clothing boutiques, and a 108-room hotel.

There is a sizable business district on Washington Road on the Municipality's border with Upper St. Clair. The area contains twenty-six commercial buildings including the Galleria, an upscale mall with unique, stylish, elegant, and one of a kind merchandise and accessories. The Galleria has twenty-nine stores, eight restaurants, and a six-screen movie theatre within the 613,000 square feet mall.

The Beverly Road Business District is a small commercial district running along Beverly Road from Overlook Drive to approximately Ralston Place. Beverly Road offers shoppers a great mix of thirteen businesses, five retail, and five restaurants occupying fourteen commercial buildings.

The Virginia Manor Shops is a 62,000 square foot strip mall located on Cochran Road at the Municipality's border with Scott Township. The strip mall includes eight businesses, three retail stores, and three restaurants. A smaller business district is located at the intersection of Castle Shannon Boulevard and Scott Roads. This area includes sixteen businesses, two retail stores, and one restaurant. The business district on Cochran Road, between Bower Hill Road and Cedar Boulevard, includes nineteen businesses and seven retail stores occupying twenty commercial buildings.

Figure 9: Mt. Lebanon Commercial Districts Map

Through stringent adherence to building and fire codes, numerous commercial occupancies have built-in fire protection systems, reducing the community's overall fire flow needs. Based on the Insurance Services Office (ISO), the community's needed fire flow is 3,000 GPM. Un-sprinklered occupancies with fire flows equal to or in excess of the community's needed fire flow include:

- St. Bernard's 311 Washington Road 3,000 GPM
- Seton LaSalle High School 1,000 McNeilly Road 3,000 GPM
- Bower Hill Community Church 70 Moffet Street 3,000 GPM
- Academy Mansion Apartments 50 Academy Avenue 3,500 GPM
- Abbey Woods Apartments 200 Piper Drive 3,500 GPM
- CrossFit Mt. Lebanon/Mecka 427 Washington Road 3,000 GPM
- Mt. Lebanon Recreation Center 900 Cedar Boulevard 3,000 GPM

Hospitals - St. Clair Hospital is an independent community hospital providing comprehensive, high quality care to the residents of Southwestern Pennsylvania. With over 15,000 admissions and 50,000 emergency room visits annually, hospital services are divided into seven distinctive Centers of Excellence encompassing a broad range of in- and outpatient care options.

Health Services - The municipality contains a variety of heath care facilities ranging from a major hospital to those supervised living environments. Below is a list of the facilities and the approximate number of units:

- **Independent Living**
  - Asbury Heights – 113 units
  - Asbury Townhouses – 21 units
  - Baptist Manor – 100 units
  - Covenant of South Hills – 126 units
  - Devonshire of Mt. Lebanon – 218 units
  - Embassy of Asbury Heights – 35 units

- **Personal Care**
  - Asbury Heights – 51 units
  - Asbury Villas – 76 units
  - Baptist Home – 60 units
  - Covenant of South Hills – 60 units
  - Pines of Mt. Lebanon – 81 units

- **Skilled Nursing**
  - Asbury Heights – 139 units
  - Asbury Place – 42 units
  - Baptist Home – 126 units
  - Covenant of South Hills – 40 units
  - Golden Living – 121 units

- **Group Homes**
  - Thirteen (13) Group Homes with an average of 3 to 4 residents per Group Home.

Utilities

- Electricity: Duquesne Light
- Cable Television: Comcast & Verizon
- Natural Gas: Dominion Peoples, Equitable & Columbia
- Telephone: Verizon
- Water: Pennsylvania American Water Company

Water Supply System - The community is 100% covered by hydrants and needed fire flows are available at all locations. The distribution system, owned and operated by Pennsylvania American Water, consists of 6-inch to 36-inch mains supplying 434 public and 44 private hydrants. During a 2013 ISO evaluation, the department received 39.66 out of a possible 40.00 points for water supply. The fire department documents flows, pressures, water main size, and hydrant locations in its pre-planning software. The fire department conducts flow tests on select hydrants throughout the distribution system annually.

Roads - U.S. Route 19 Truck is an auxiliary route of U.S. Route 19 located in Western Pennsylvania in the Pittsburgh Metro Area that has a length of 19 miles. The southern terminus is at U.S. Route 19 near Mt. Lebanon and the northern terminus is U.S. Route 19 in McCandless Township. Trucks are not allowed on U.S. Route 19 and this is the route for trucks, especially those carrying hazardous cargos that cannot pass through the many tunnels leading into the City of Pittsburgh.

US 19 Truck begins as U.S. Route 19 enters Mount Lebanon as Washington Road. US 19 branches northwest to skirt Mt Lebanon and Dormont, while US 19 Truck continues through the center of these towns. Vehicle accidents have been classified as high probability, low consequence events.

Light Rail Transit - Opened in 1984, the Port Authority of Allegheny County's 25-mile Light Rail Transit (LRT) System, provides service to Downtown Pittsburgh and several communities south of the city. Entering Mt. Lebanon from Castle Shannon Borough at Mt. Lebanon Boulevard, the LRT provides approximately 22,000 passengers per day with convenient and efficient transit service to Downtown Pittsburgh and other destinations in southern Allegheny County.

Directly behind the Mt. Lebanon Public Safety Building on Shady Drive East at the Mt. Lebanon LRT Station, the LRT travels under Mt. Lebanon via a 0.6-mile underground tunnel, exiting in Dormont at the Dormont Junction near McFarland Road. The total length of aboveground track in Mt. Lebanon is .9 miles, for a total stretch of 1.5 miles. Incidents involving the LRT have been classified as low probability, moderate consequence events.

Figure 10: Port Authority Light Rail Service Map

Also winding through Downtown Pittsburgh via a subway with three underground stations (Steel Plaza, Wood Street and Gateway stations) and three above-ground stations (Station Square, First Avenue and Penn Park stations), the LRT provides rail service to major destination points and business centers within Downtown Pittsburgh.

Railroad- Running approximately ¼ mile to the east of Mt. Lebanon in Castle Shannon Borough, railroad traffic on the Wheeling & Lake Erie Rail Line includes approximately four to six trains per day carrying freight and other materials to the City Of Pittsburgh. While the exact types and quantities of materials carried are primarily natural gas liquids, fracking sand, and fracking brines. The release of any materials giving off vapors has the potential to threaten eastern portions of the Municipality. Railroad incidents affecting the Municipality have been classified as low probability, moderate consequence events.

Air Transportation - Located 18 miles northwest of Mt. Lebanon, the Pittsburgh International Airport (PIT) accommodates more than 10 million travelers in nearly 210,000 aircraft operations per year. With about 191 non-stop flights per day to 49 destinations, Pittsburgh International Airport is served by 13 air carriers.

Aircraft incidents have been classified as low probability, high consequence hazards. On May 17, 2000, a single-engine Piper Cub airplane made an emergency landing in a field off of McNeilly Road in Mt. Lebanon Response Zone 4B. The airplane received minor damage and the pilot was not injured.

Mt. Lebanon is located 18 miles southeast of Pittsburgh International Airport (PIT). Aircraft approaching and departing PIT frequently fly over Mt. Lebanon. While there has been no history of any accidents involving commercial aircraft in Mt. Lebanon, U.S. Airways Flight 427 from Chicago's O'Hare International Airport to Pittsburgh, Pennsylvania, with a final destination of West Palm Beach, Florida, crashed in Hopewell Township on approach on 8 September 1994, killing everyone on board.

The community receives a considerable amount of medical helicopter air traffic with medical helicopters flying over daily from the City of Pittsburgh to outlying areas and medical facilities. A helicopter landing pad is located at St. Clair Hospital, in Response Zone 1B. The frequency of helicopter landings at the Hospital is low due to its proximity to the many trauma centers located approximately 5 miles away in Downtown Pittsburgh.

Should a large aircraft crash, the Mt. Lebanon Fire Department would activate its mutual aid system, as well as the Allegheny County Airport Authority and the Region 13 Strike Team for resources.

Development & Population Growth

The Municipality of Mt. Lebanon is essentially “built out” with very little potential for growth. Population increased slightly from 33,017 in 2000 to 33,137 in 2010. There are no transient populations that impact service delivery.

The greatest concentration of persons per square mile in Mt. Lebanon reside in the West District, the portion of the Municipality on the west side of Washington Road, particularly in the area between Cochran and Bower Hill Roads (U. S. Census Bureau, 2010), in Geographic Planning Zone 5B. The second highest concentration of persons per square mile reside in the Twin Hills neighborhood, just north of Bower Hill Road, between Cochran Road and the Dormont and Green Tree Borough lines, in Geographic Planning Zone 1A (Figure 11).

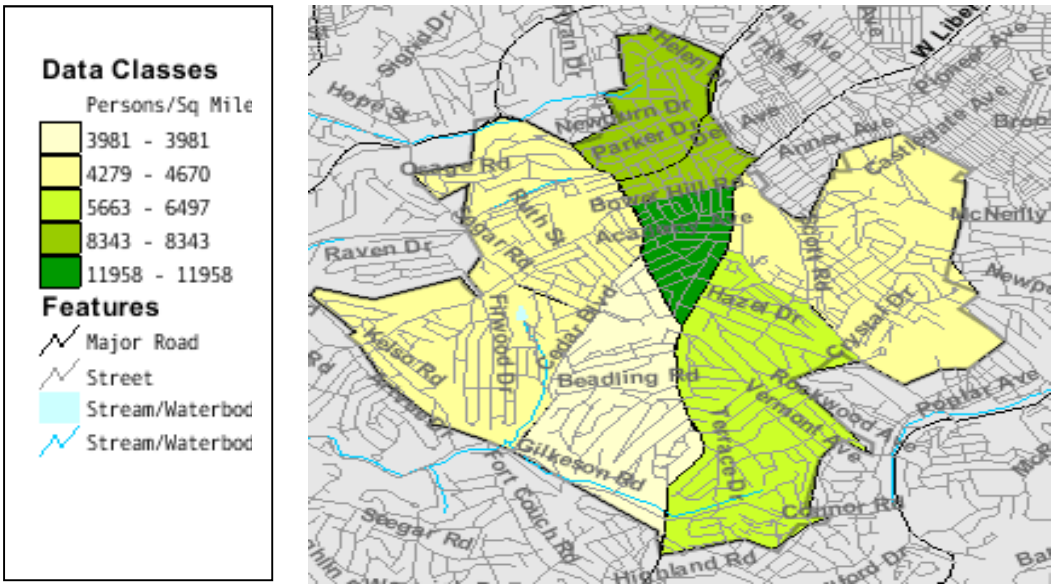


Figure 11: Mt. Lebanon Population Density Map

Coupled with the population density (Figure 11) is an extremely large senior population. Allegheny County, PA is second only to Miami-Dade County, Florida, for percentage of senior citizens. Within Allegheny County, Mt. Lebanon is among the top few communities for seniors, making up 18.9% of the total population. Of the slightly more than 6,200 seniors, approximately 1,200 reside in senior care facilities, but a third (2,311) live independently in single-family homes and multi-story, multi-family apartment buildings (U.S. Census Bureau, 2010).

The largest percentage of older residents in Mt. Lebanon reside in the West District, particularly the area between Bower Hill and Segar Roads (U. S. Census Bureau, 2010), in Geographic Planning Zone 2A (Figure 12)

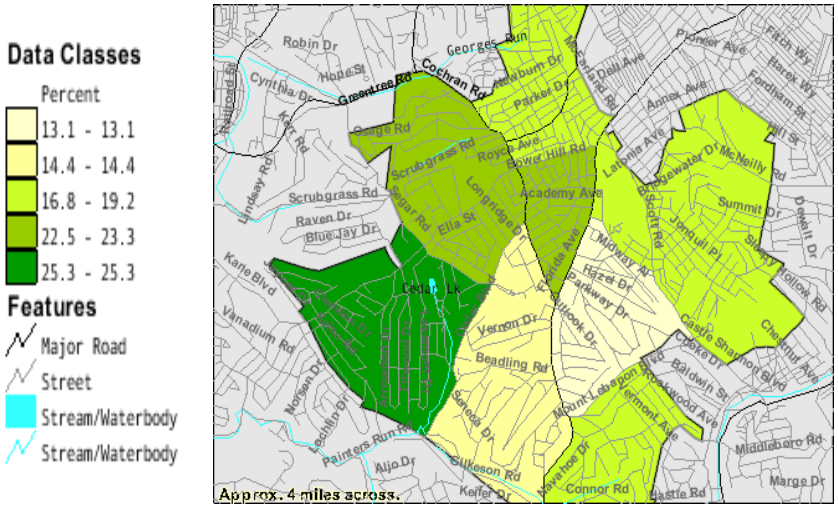


Figure 12: Percentage of Population 65 Years of Age and Over

The largest percentage of another at risk population, children under the age of five years old, reside in the East District, the portion of the Municipality on the east side of Washington Road (U. S. Census Bureau, 2000), in Geographic Planning Zones 4A & 4B, which makes up the Sunset Hills neighborhood (Figure 13).

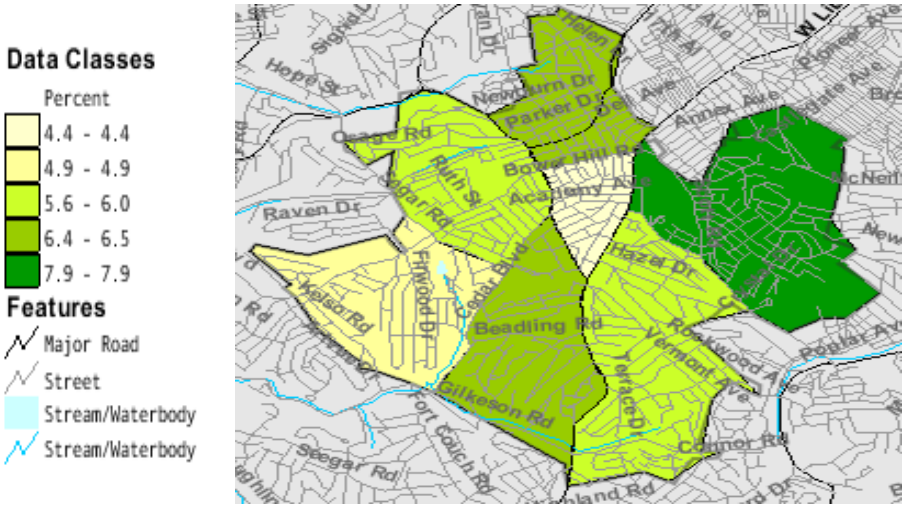


Figure 13: Percentage of Persons Under 5 Years of Age

Institutions that have a large number of “at risk” populations include the seven elementary, three middle, and three high schools; seven assisted living facilities; seven high-rise, multi-family residential buildings with large senior populations; and the St. Clair Hospital.

Topography

Mt. Lebanon is located at 40º22'30"N 80º3'0"W, approximately 1,054 feet above sea level. The topography of Mt. Lebanon and Allegheny County has been described as "rolling," "hilly," "varied," and "radical." The Municipality contains some wooded areas with a flood plain along the Painters Run corridor. Half of the land area in Allegheny County is either moderately sloped or steeply sloped, which must be taken into consideration, along with the weather, when responding to emergencies in poor weather conditions such as icy or snow-covered streets. Topography must also be considered during periods of excessive or prolonged rain due to the potential for flooding in low-lying areas and for the potential for runoff during hazardous materials events.

Figure 14: Mt. Lebanon Topographical Map

Climate

Mt. Lebanon's climate features abundant precipitation throughout the year and four defined seasons. While there are wide variations in seasonal temperature common to temperate climates, winters are somewhat moderated by both proximity to the Atlantic Ocean and mountains that block the advance of cold air from the north. Overall, the climate features cold winters with snow, and warm, humid summers with frequent clouds and precipitation.

The warmest month of the year is July. The average high temperature is 83 °F, with overnight low temperatures averaging 62 °F. July is often humid, resulting in a considerable heat index. The coldest month of the year is January, when the average high temperature is 37 °F. Overnight low temperatures average 20 °F.

Mt. Lebanon receives heavy precipitation and many days are subject to overcast skies. Precipitation is greatest in May, due to frequent thunderstorms and more organized low pressure systems which track up the eastern coast of the United States. On average, 4.04 inches of precipitation falls during this month. The driest month of the year is February, when most precipitation falls in the form of low moisture content snow. Mt. Lebanon averages 146 days of precipitation annually with 36 inches of rain and 29 inches of snow.

Table 3: Weather Averages for Mt. Lebanon

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Record high °F (°C)	74 (23)	76 (24)	84 (29)	90 (32)	92 (33)	96 (36)	101 (38)	97 (36)	92 (33)	85 (29)	79 (26)	74 (23)
Average high °F (°C)	37 (3)	39 (4)	50 (10)	62 (17)	71 (22)	80 (27)	85 (29)	83 (28)	76 (24)	64 (18)	53 (12)	42 (6)
Average low °F (°C)	20 (-7)	21 (-6)	29 (-2)	38 (3)	48 (9)	56 (13)	62 (17)	60 (16)	53 (12)	41 (5)	33 (1)	25 (-4)
Record low °F (°C)	-19 (-28)	-2 (-19)	2 (-17)	21 (-6)	29 (-2)	38 (3)	37 (3)	47 (8)	35 (2)	22 (-6)	13 (-11)	2 (-17)
Precipitation inches (mm)	2.59 (65.8)	2.47 (62.7)	3.24 (82.3)	3.07 (78)	4.04 (102.6)	3.93 (99.8)	3.90 (99.1)	3.15 (80)	3.13 (79.5)	2.35 (59.7)	3.05 (77.5)	2.86 (72.6)

In September 2004, the remnants of Hurricane Ivan caused massive flooding throughout Mt. Lebanon, Allegheny County, and Western Pennsylvania. Flooding and mudslides damaged and destroyed bridges, closed roadways, and damaged homes and businesses. In January 2005, the remnants of Hurricane Katrina once again produced flooding that caused severe damage.

In March of 1993, and again in February of 2010, snow fell at rates of 2 - 3 inches per hour, officially dumping over 24 inches of snow. Prolonged operations during winter months require assistance from both the Port Authority of Allegheny County for buses for warming and the Salvation Army.

Mt. Lebanon is one of close to 100 Pennsylvania communities and thousands nationwide designated as a Tree City USA, an honor bestowed by the National Arbor Day Foundation in conjunction with the U.S. Forest Service and the National Association of State Foresters. During high winds events, tree limbs bring down a significant number of above-ground power, CATV, and telephone lines.

Heavier vegetation is limited to portions of the Municipality's fifteen parks which encompass 200 acres and include many other amenities such as ball fields, basketball courts, playgrounds, picnic areas, and tennis courts. Due to climate, acreage and vegetation types, the threat of brush fires is minimal.

Funding

Total revenues for governmental activities, including the fire department, are largely derived from charges for services, real estate taxes, and earned income taxes (86.5%). Real estate taxes and earned income taxes make up 89.1% of all taxes collected by the Municipality.

All sources of taxes provide 59.1% of the Municipality's revenue. Charges for services includes recreation programs, joint programs (animal control, tax collection, and crossing guards), cable franchise fees, fines and penalties, licenses and permits, as well as magazine advertising and other revenues generated by user fees.

Annually, the Department submits a budget to the municipal manager. The budget is developed with appropriate direction from the municipality based on anticipated revenues utilizing a Zero-Based Budgeting process. Zero Based Budgeting requires that the budget process begin at zero and each area of activity be justified as if it were new. This is the reverse of the normal budgeting process which focuses on merely increasing the previous expenditure levels.

The method used to develop a zero-based budget begins with the identification of decision packages – those programs for which separate cost figures can be maintained. After the decision packages are identified, service levels are developed for each package. Service levels begin with the minimum operating level, and each successive level provides increased service at its incremental cost.

After the incremental costs are determined for the various service levels, the levels are ranked in order of overall priority of importance to municipal operations. This ranking process also starts anew each year.

Fire department service level options range from an all-volunteer department (Level 1) to a full career department (Level 9). The department is currently funded at Level 6, which includes a stipend for volunteers to provide additional staffing on night shifts in an effort to maintain a minimum staffing of four (4) personnel.

Table 4: 2019 Budget Service Level Options

Level	Description	2019 Cumulative Cost
1	Full Volunteer Company	$574,990
2	Weekday Career Staffing	$1,288,100
3	24-Hour Career Staffing	$2,361,650
4	Proactive Services	$3,155,580
5	Fire & Life Safety Education Program	$3,288,200
6	Supplemental Staffing	$3,301,160
7	Full Fire Prevention & Inspection Services	$3,398,970
8	ISO / NFPA Engine Co. Distribution	$3,738,050
9	NFPA Minimum Staffing	$4,077

Budgetary control is maintained at the fund level, with operating departments charged with the maintenance of budgeted expenditures as a whole. Annual budgets are adopted on a basis consistent with accounting principles generally accepted in the United States for the governmental funds including the General Fund, Special Revenue Funds, and Capital Project Funds.

Table 5: 2019 Fire Protection Line-Item Budget

Item	Budget
Personnel	$2,615,000
Special Appropriations	$383,200
Professional Services	$12,040
Training & Conferences	$19,270
Memberships	$1,430
Utilities	$110,820
Repairs & Maintenance	$36,500
Rental	$16,360
Contractual Services	$20,770
Office Supplies	$3,650
Books & Periodicals	$5,300
Equipment & Furniture	$62,320
Maintenance Supplies	$14,500
Total	$3,301,160

Section 2: Services Provided

The services provided by the Mt. Lebanon Fire Department include:

- Fire Suppression
- Emergency Medical Services, Basic Life Support First Responder
- Hazardous Materials "Technician Level" Response
- Technical Rescue (Trench, Confined Space, Rope, Surface Water, Ice, Vehicle & Machinery) "Technician and Operations Level" Response
- Fire Prevention
  - Plans Review
  - Routine Inspections
  - Permits
  - Acceptance testing
- Public Education
- Fire Investigations
- Emergency Management
- Community Outreach
- Training

General

The Mt. Lebanon Fire Department is a combination fire department that provides round the clock service to the community. The agency considers itself an "All Hazards, All Risks" organization. In addition to the traditional service of fire suppression, the agency also provides first responder, technical rescue, Hazardous Materials (HAZMAT) response, fire prevention, and public education and information programs.

The organization is comprised of a career fire chief and assistant chief, 15 career fire officers, 47 volunteer personnel, a secretary, and a data entry clerk. One hundred percent (100%) of the department's officers are trained to a minimum of the Fire Officer I Level. All suppression-level personnel are trained to a minimum of Fire Fighter II. Twenty-three (23) members are trained to the Vehicle Rescue and Machinery Technician Level. Twenty-six (26) members are certified Emergency Medical Technicians (EMTs). Eighteen (18) members are trained to the Hazardous Materials Technician Level. A breakdown of the staff is as follows:

Chief Officers	2
Deputy Chiefs	5
Lieutenants	10
Suppression Fire Fighters	32
Non-Suppression Fire Fighters	5
Recruit Fire Fighters	3
Support Services Fire Fighters	5
Civilian Administrative Staff	2

The mission of the Mt. Lebanon Fire Department is to serve and safeguard our diverse community through the delivery of professional, efficient, and effective services protecting life, property, and the environment.

Our vision is to be leaders in delivering the highest quality and cost-effective prevention, education, and emergency response services.

- We will continuously improve as an organization, proactively identify and address community risks, and consistently meet or exceed community expectations.
- Our personnel will be well trained, community oriented and customer focused.
- We will work together as a team, and be respectful of each other.
- Our organizational culture will maintain the highest level of ethical standards.
- We will have open internal communication processes, providing greater information sharing and involvement in decisions to accomplish our mission.
- Our leadership and personnel will hold one another accountable to the organization's values.
- We will continue to be recognized as a regional fire service leader.
- We will be prepared for a greater role in future emergency medical service delivery.
- We will be an innovative learning organization.
- We will preserve institutional knowledge, and have a succession plan for officer positions and specialty roles.
- We will explore opportunities to implement new technology and ideas to improve our quality of service.

We value Commitment, Integrity, Respect, Teamwork, Stewardship, and Accountability.

The Mt. Lebanon Fire Department maintains an established strategic plan to guide the department in fulfilling its mission. Strategic Plans are designed to improve the quality and quantity of services the agency provides.

Goals and objectives are developed on a quarterly and annual basis with input from each division. In July, goals and objectives for the following year are reviewed for feasibility and to ensure budget appropriations are made if necessary. On a quarterly basis, operational goals are posted for the operational period.

Annual department goals are developed by the fire chief with input from each organizational and operational program. Annual goals are then reviewed with the Municipal Manager. These goals and objectives are then adopted into the strategic plan for implementation.

Goals and objectives identified as part of the department's strategic plan are reviewed by senior staff, the volunteer board, and the strategic plan implementation committee on a monthly basis, at a minimum, and to guide departmental decision-making. For specific plan details, refer to the Mt. Lebanon Fire Department Strategic Plan document.

Location & Resources

The fire department operates out of a single station located at 555 Washington Road. The station, opened in 2002, complies with all required codes and has adequate space for Department functions, including: operations, administration, fire prevention, training, community outreach, emergency management, and resource management. The station also houses the municipal Emergency Operations Center (EOC).

The fleet consists of three pumpers, an aerial ladder, an advanced rescue truck, a mobile command post, and several utility vehicles:

- Engine 1 – 2012 Spartan / Precision Pumper with 1,500 gpm pump
- Engine 2 – 2002 Spartan / Precision Pumper with 1,500 gpm pump
- Engine 3 – 2018 Rosenbauer Pumper 1,500 gpm pump
- Truck – 2011 Smeal 105' HD Rear-Mount Aerial with 1,500 gpm pump
- Rescue – 2008 Spartan / Precision Heavy Rescue
- Mobile Command Post – 2006 Chevy / Dodgen Mobile Command Post
- Car 1 – 2013 Chevy Tahoe Asst. Fire Chief's Vehicle
- Car 3 – 2020 Ford Interceptor Fire Chief's Vehicle
- Squad 1 – 2007 Ford Explorer Fire Prevention Staff Vehicle
- Squad 2 – 2015 Ford F-250 Crew Cab Pickup
- Squad 3 – 2015 Chevy Tahoe Shift Commander Vehicle / QRS
- Squad 4 – 2008 Ford Expedition Squad
- Squad 5 – 2014 Ford Explorer Fire Prevention Staff Vehicle

The Resource Management Division in responsible for the inspection, repair, and maintenance of all physical resources. General guidelines, in accordance with manufacturer specifications, are in place to guide the apparatus maintenance program. Apparatus replacement is scheduled according to the municipal fleet replacement program. The Resource Management Division is also responsible for identification, distribution, care, maintenance and repair of personal protective and other safety equipment that is distributed to members.

Figure 15: Mt. Lebanon Fire Station Location

External Relationships

External system relationships are defined as with agencies that act together as an integrated system. The Department has external system relationships with numerous organizations including the SHACOG Technical Rescue Team, Mt. Lebanon Police, Medical Rescue Team South Authority, the Mt. Lebanon School District, Allegheny County Hazardous Materials Team, Allegheny County Emergency Management Agency, Allegheny County Fire Marshall's Office, St. Clair Hospital, Outreach Teen & Family Services, the Red Cross, Salvation Army, and other fire departments.

The Department has written automatic and mutual aid agreements via the South Hills Area Council of Governments which includes 40 fire departments serving 29 communities and the PA Region 13 Task Force which includes intergovernmental agreements between the 13 counties and the City of Pittsburgh in Southwestern Pennsylvania.

Agreements with these external agencies are current, support operational needs, and reviewed on a periodic basis. The Department is considerate of any type of functional agreement that may aid in the Department meeting its goals and objectives.

Staffing Levels & Patterns

Twelve career personnel work a schedule consisting of two ten-hour days, followed by two fourteen-hour nights, followed by four days off. Two of the Fire Prevention & Life Safety Education personnel work four ten-hour days, Tuesday through Friday, while the Fire Prevention & Life Safety Education Deputy Chief, works four ten-hour days, Monday through Thursday. The fire chief and assistant fire chief work a Monday through Friday schedule. The following Table (Table 6) depicts the average daily career staffing when at full strength.

Table 6: Career Staffing by Day of Week

Day	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8 am – 6 pm	3	6	8	8	8	6	3
6 pm – 8 am	3	3	3	3	3	3	3

Minimum staffing is three personnel Monday through Friday day shift, not including the fire chief and assistant chief, and two personnel on nights and weekends. In 2019, the average on-duty staffing was 4.87 fire fighters. The department averaged five personnel per response. The average response for structure fires, not including automatic and mutual aid, was 22 personnel. The average response for structure fires, including automatic and mutual aid was 45 personnel.

In December of 2014, in an effort to increase staffing at night and decrease the number of callbacks of off-duty personnel, the Department implemented a volunteer standby program requiring all volunteers to work six (6) night shifts annually. In addition, voluntary 5-hour standby shifts were implemented daily from 6pm to 11pm and on weekends. In 2019, volunteers worked 506-night shifts (10pm – 7am) and 195 duty shifts (6pm – 11pm), equaling an additional person on-duty with the career staff 75% of the time.

In addition, for calls of a more serious nature, all personnel, career and volunteer, are recalled via two-tone voice pagers and a cell phone paging application. These recalls are either generated automatically via run cards on the initial dispatch or at the request of the officer-in-charge.

Response Methods

An emergency response is composed of three steps that when combined make up the Department's total response time:

- **Alarm Handling:** begins with phone pickup in the dispatch center and ends when the call information has been provided to the fire department.

  - Calls are processed and dispatched by the Allegheny County 9-1-1 Center. The Center dispatches the 91 police, 167 Fire and 46 EMS agencies that serve and protect 130 municipalities in a 731-square mile area, the largest being the City of Pittsburgh. The center processes 1.3 million calls per year, approximately 40% of which are generated from the City. The center employs 214 supervisors, call takers, and dispatchers. Each shift is staffed with 20 call takers, 39 dispatchers and four supervisory posts.
  - Calls are first received by a call-taker, who is given a set of questions to ask and then answer through typing into a CAD computer program. The call location is verified, along with other key bits of information needed before discussing the emergency itself. The call is automatically tracked and mapped by the phone used, whether it's a land line or a cell phone, and immediately sent to the computer screen of the dispatcher for the area.
  - Areas include North, South, East and the City of Pittsburgh. Each area of the Pittsburgh region has its own designated spot for dispatchers. The dispatchers then connect with the correct emergency responders for the situation almost simultaneously as the call-takers continue to gather information to share.
  - Pre-designated, jurisdiction-specific run cards assign the needed response apparatus based on incident type and standard operating guidelines. All units are notified instantaneously through an alert and voice message in the station, a FAST Alert System with LCD monitors and scrolling message boards, and via two-tone voice pagers and a cell phone application.
  - 911 operators in Pennsylvania are required to maintain certification as an emergency medical dispatcher (EMD) and in CPR (Class C). In addition, Pennsylvania requires at least 104 hours of classroom and hands-on training, which includes the mandated EMD and CPR certifications. Training topics include: policy and procedure, department standards, call taking skills, computer-aided dispatch, geography, and radio operations.

- **Turnout Time:** begins when the fire department is notified of an emergency and ends at the beginning point of travel time. Upon notification, on-duty personnel proceed to apparatus and, if needed, don protective clothing necessary for the response. Once personnel are seated in the vehicle and ready to respond, the officer calls the unit in-service via UHF radio and/or a touch screen entry on a mobile data terminal that the unit is responding.

- **Travel Time:** begins when a unit notified the dispatch center that it is en route to the emergency and ends when a unit arrives at the scene. While driving to a call, crews may read updated information over the mobile data terminal or may receive voice messages from a dispatcher. The first-arriving unit will provide the dispatch center with a voice report to indicate arrival at scene.

Deployment

Because the number of personnel varies greatly, from a maximum of eight career fire fighters on duty to a minimum of two career fire fighters on duty, and any combination of volunteers in station, the Department utilizes "adaptive" response protocols to deploy resources. These protocols take into consideration the time of day, the number of personnel on duty (career and volunteer), dispatch information, life hazard, etc. For example, the department may respond to a residential fire alarm during the day on a still alarm with a minimum of three fire fighters; however, would respond on an all call between the hours of 11:00 pm and 8:00 am based on the fact that the residents are more likely to be asleep or delayed in recognizing and responding to the alarm.

Still alarms are calls that are minor in nature and/or calls where adequate staffing (career and volunteer) is on-duty. Examples of still alarms include accidents with unknown injuries, carbon monoxide alarm activations, downed wires, odors of gas outside structures, fire alarms between the hours of 8:00 AM and 11:00 PM and fire alarms in unoccupied commercial structures at night. Off-duty career personnel are not permitted to respond to still alarms. Volunteer personnel are encouraged to respond.

Each of the volunteer staff is divided up into 3 recall groups, Groups 1, 2 & 3, with each group consisting of approximately 14 volunteer members. The recall groups rotate on a week-by-week basis. For incidents in which the on-duty staff needs a few extra people, but not the entire department, a "Group Recall" may be utilized. A "Group Recall" recalls 1/3 of the volunteer staff and all off-duty career. Examples include multiple calls of a minor nature, staffing needed to fill the station for another call, and fire alarms in unoccupied commercial structures.

"All calls" are calls that are beyond or potentially beyond the capabilities of the on-duty staff. Examples of "all calls" include accidents with entrapment, physical rescues, structure fires, multiple still alarms, etc. "All calls" are also used for fire alarms in occupied residential and commercial buildings when a minimum of four fire fighters are not on-duty. "All calls" can be used at the discretion of the officer in charge based on number of personnel on duty, time of day, weather conditions, occupancy, information received from dispatch, risk, etc.

Of the annual emergency responses, nearly 85% are managed by the on-duty career firefighters with limited volunteer participation (still alarms). The remaining 15% require alerting the volunteer firefighters as well as recalling the off-duty career staff (all calls). A breakdown of Mt. Lebanon Fire Department's Emergency Staffing Protocols, by incident type and staffing and alarm type, including apparatus assignments, are as follows (Tables 7 & 8):

Table 7: Mt. Lebanon Fire Department Staffing Protocols

INCIDENT TYPE	STAFFING / ALARM TYPE
Automatic / Mutual Aid	Per pre-Plan
Rapid Intervention Team	All Call
Brush Fire	Still with minimum 2 personnel or Group Recall
EMS, Medical Assist	Still with minimum 2 personnel or Group Recall
Fire Alarm – Occupied Commercial 0800-2300	Still with minimum 3 personnel of Group Recall
Fire Alarm – Occupied Commercial 2300 – 0800	All Call
Fire Alarm – Unoccupied Commercial	Still with minimum 3 personnel or Group Recall
Fire Alarm – Residential 0800 – 2300	Still with minimum 3 personnel or Group Recall
Fire Alarm – Residential 2300 – 0800	All Call
Good Intent Call	Still Alarm
Hazardous Condition	Still Alarm
Hazardous Materials	All Call or Officer Discretion
Rescue – Elevator	All Call, Still Alarm with 3 personnel if no confirmation of victims
Rescue – Other	Officer Discretion
Search (Lost Person)	All Call
Structure Fire	All Call
Vehicle Accident – Entrapment	Still with minimum 6 personnel or All Call
Vehicle Accident – Fluid Cleanup	Still Alarm
Vehicle Accident – Injuries Reported	Still with minimum 2 personnel or Group Recall
Vehicle Accident – Unknown Injuries	Still Alarm
Vehicle Fire – In Occupied Building	All Call
Vehicle Fire – In Open Parking Garage	All Call
Vehicle Fire – In Street	Still with minimum 3 personnel or All Call

Table 8: Mt. Lebanon Fire Department Apparatus Response by Incident Type

TYPE OF EMERGENCY APPARATUS (Automatic)	PRIMARY RESPONSE APPARATUS	SECONDARY RESPONSE (Per protocol or by request of IC)
ACCIDENTS		
Fluids on street	Engine	Rescue, Squad
With Injuries	Rescue	Engine
Unstable Vehicle	Rescue	Engine
Bicycle, Motorcycle, Pedestrian	Rescue	Engine
Extrication	Rescue	Engine, Squad
AUTOMATIC / MUTUAL AID		
Automatic / Mutual Aid	Per Pre-Plan	Per Pre-Plan
BRUSH, TRASH, OUTSIDE FIRE		
Brush, Trash, Outside Fire	Engine	Engine
HAZARDOUS MATERIALS		
Large Spills, High/Mod Hazard	Rescue, Engine	Command, Squad
Small Spills/Leaks, Low Hazard	Engine	As requested
PHYSICAL RESCUES		
Elevator	Rescue	Engine
Confined Space	Rescue	Engine
High Angle	Rescue, Truck	Engine
Trench	Rescue, Squad, Collapse Trailer	Command
Extrication	Rescue, Engine	Squad
Water / Ice	Rescue, Engine	As requested
SEARCH		
Search	Engine, Command	Rescue, Squad(s)
STRUCTURE FIRE		
Residential	Truck, Engine, Rescue	Command, Squad(s)
Commercial	3 Engines, Truck, Rescue	Command, Squad(s)
VEHICLE FIRE		
In Structure	Per Structure Protocol	Per Structure Protocol
In Open Air Parking Garage	2 Engines	Rescue, Truck
In Street	Engine	Engine
RAPID INTERVENTION TEAM		
Go-Team	Rescue	Squad
FIRE ALARMS		
Residential (0800 – 2300)	Engine or Truck	Engine, Rescue, Squad
Residential (2300 – 0800)	Engine or Truck	Rescue, Squad
Occupied Comm. (0800-2300)	Engine	Truck, Engine, Rescue, Squad
Occupied Comm. (2300-0800)	Engine	Rescue, Engine, Squad
Unoccupied Comm. (2300-0800)	Engine	Truck, Engine, Rescue, Squad
EMS - QRS		
QRS	1 Engine	Rescue

While the Department does not always have a minimum of four on-duty personnel, the department's adaptive response protocols allow for the assembly of a minimum of four firefighters on the incident scene, generally upon the arrival of the first-due engine, through a combination of on-duty and off-duty staffing (career and volunteer) responding directly to the scene.

Bethel Park Fire Department covers 9.67 road miles within 1.5 miles of their Milford Station, Castle Shannon Fire Department covers 1.90 miles, Dormont Fire Department covers 1.59 miles, Bower Hill Fire Department covers 3.57 miles, and Upper St. Clair Fire Department covers 1.27 miles of Mt. Lebanon's first alarm engine company response area not covered by Mt. Lebanon from its 555 Washington Road Location. Twenty-two percent of the Municipality (23.61 road miles) is not within 1.5 miles of a first alarm engine company.

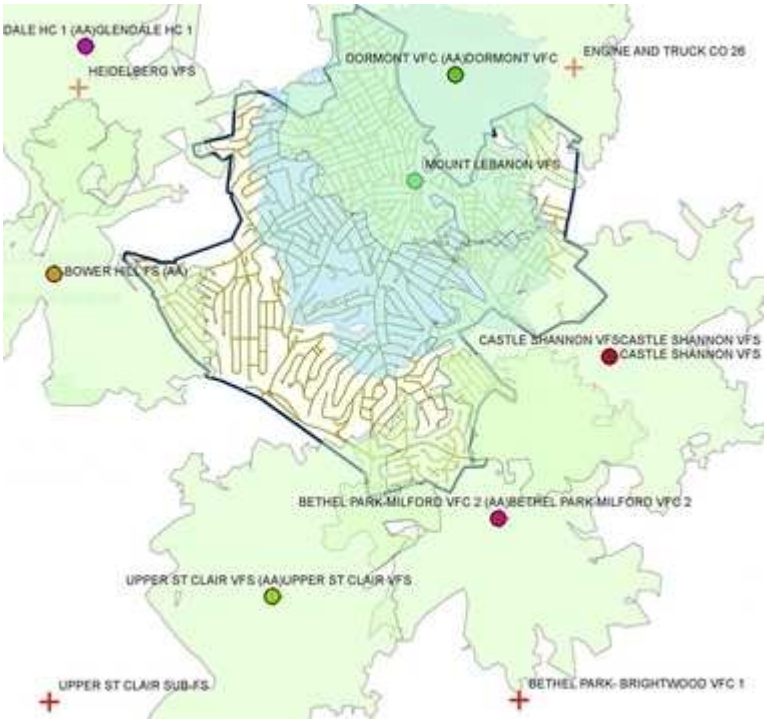


Figure 16: Automatic / Mutual Aid Engine Company Concentration

The fact remains; however, that all of the automatic and mutual aid companies, with the exception of Dormont, are all-volunteer departments that will have a slower response time than a first-due engine company responding from the Mt. Lebanon Public Safety Building. For 100% of Mt. Lebanon's 2019 call volume, the first-due engine company is responding from the Mt. Lebanon Public Safety Building, located at 555 Washington Road.

In order to meet The Occupational Safety and Health Administration's (OSHA) Two-in/Two-out regulations, which establishes the minimum on-scene staffing as four personnel prior to conducting interior fire attack in and Immediately Dangerous to Life and Health (IDLH) atmosphere, the Department utilizes a combination of on-duty, off-duty, and volunteer personnel.

Initial engine staffing varies from a minimum of two (2) to a maximum of six (6) personnel. Whether or not the initial engine arrives with a minimum of four personnel is dependent upon the number of personnel (both career and volunteer) on-duty and in the station at any given time. Monday through Friday, from 8:00 AM till 6:00 PM, the initial attack force is likely to arrive on the initial engine. At other times, the number of responders arriving on the initial engine may be as few as two responders.

In the event that four personnel are not on-duty or do not arrive on the initial engine, and in order to assemble an adequate initial attack force consisting of a minimum of four personnel and an effective response force based on incident and risk type as quickly as possible, the Department's response protocols allow for a number of off-duty career and volunteer personnel to respond directly to the scene. In order to minimize the amount of time necessary to have the capability to initiate attack, the Municipality is divided into two districts, the East District and the West District. For any incident in the West District, off-duty career and volunteer personnel who live in the West District respond directly to the incident scene while off-duty career and volunteer personnel that live in the East District respond to the station to respond additional apparatus, and vice-versa.

The response of approximately half of the Department's off-duty career and volunteer personnel directly to an incident scene allows for the prompt assembly of an initial attack force of a minimum of four personnel when less than four personnel arrive on the initial engine. Twenty-seven members (11 career and 16 volunteer) reside in the East District, twenty-nine members (6 career and 24 volunteers) reside in the West District, and two members are out-of-district (Figure 17).

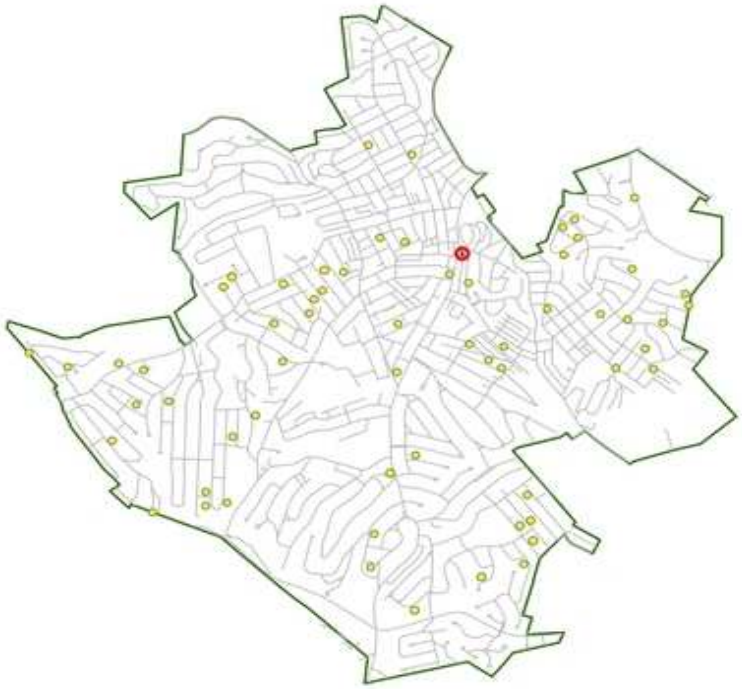


Figure 17: Distribution of Firefighter's Homes in Mt. Lebanon

Over the previous five-year period, the initial engine had the capability to initiate attack (minimum of four personnel) immediately upon arrival on 82 of 101 incidents (81%). The initial engine met its 1:00 assembly benchmark 92% of the time with a baseline assembly of a minimum of four (4) firefighters in 0:49.

Table 9: 1st Due Staffing to Structure Fires, 2015-2019

Staffing	Structure Fire Incidents	Percentage
2-person	7	7%
3-Person	27	26%
4-person	39	37%
5-person	23	22%
6-person	9	8%

While this OSHA standard *does not* set a minimum crew size for apparatus — or station-manning, it *does* dictate that at least four firefighters must be assembled on the fire-ground before attacking an interior fire in an IDLH atmosphere. The Two-In, Two-Out Rule is waived in rescue situations when immediate action is necessary to save lives. The Mt. Lebanon Fire Department adheres to the Two-In/Two-Out Rule, with the exception of immediate rescue situations. A minimum of four members are required prior to entering an IDLH atmosphere. This minimum staffing may be accomplished through a combination of on-duty, off-duty, and/or volunteer personnel when a minimum of four members are not on the first-due engine.

The agency's assembly of an "effective response force" is accomplished through a combination of on-duty personnel, off-duty personnel, volunteers, and automatic and/or mutual aid agreements with surrounding communities.

Fire Suppression

Suppression calls are dispatched according to 18 pre-determined suppression response categories. Commonly:

- 1st Alarm Residential Structure Fire: 3 engines, 1 quint, 1 deputy or chief officer, 1 medic unit, recall of off-duty personnel
- 2nd Alarm Residential Structure Fire: 2 engine, 1 rapid intervention team, station Fill
- 3rd Alarm Residential Structure Fire: 3 engines, Station Fill
- 1st Alarm Commercial Structure Fire: 3 engines, 1 quint, 1 deputy or chief officer, 1 medic unit, recall of off-duty personnel
- 2nd Alarm Commercial Structure Fire: 3 engine, 1 truck, rapid intervention team, station fill
- 3rd Alarm Commercial Structure Fire: 3 engine, 1 truck. rapid intervention team, 1 rehab unit
- Residential Fire Alarm: 1 engine, may or may not include recall of off-duty personnel depending on staffing levels, time of day, and occupancy type
- Commercial Fire Alarms: 1 engine, 1 truck, may or may not include recall off off-duty personnel depending on staffing levels, time of day, and occupancy type

The Department provides appraisal of the fire suppression program through monthly reporting, annual reporting, officers meetings, post-incident analysis, and Standards of Cover updates. Fire suppression and loss data is generated by the administrative platoon chief and provided to the fire chief and elected officials on a monthly basis. The effectiveness of the fire suppression program is evaluated on an ongoing basis at monthly officer's meetings and during an annual review with the Operations and Emergency Management Platoon.

Emergency Medical

Emergency medical services are provided to Mt. Lebanon residents by the Medical Rescue Team South Authority (MRTSA). Organized in 1977, MRTSA is a multi-community emergency medical service serving the communities of Mt. Lebanon, Castle Shannon, Whitehall, Dormont, Green Tree, and Baldwin Township. MRTSA is governed by a Board with each community appointing a representative.

With its base of operations located at 315 Cypress Avenue (Zone 4A) in Mt. Lebanon, the MRTSA facility can house twelve (12) emergency vehicles and includes a mechanic's bay and a community education and training center.

The Department responds to E0 and E1 Priority medical calls as first responders when MRTSA units are not available to respond or at the request of MRTSA for assistance. The department is certified by the Pennsylvania Department of Health as a Quick Response Service. Quick response identifies the essential equipment and supplies for a QRS, capabilities to be dispatched and communicate with a responding ambulance service, and provide emergency medical services in compliance with regional and statewide basic life support protocols.

- E0 and E1 Priority Medical Calls: 1 engine or squad with a minimum of two (2) emergency medical technicians

Being a non-billing agency the Department does not fall under any HIPPA regulation; however, through EMS continuing education training, does teach patient confidentiality and reviews the HIPPA standards as a "good practice". Annually, the fire chief meets with members of the Special Operations staff and the leadership of Medical Rescue Team South Authority to review activities, including training, incidents, ability to meet deployment objectives, and equipment needs. The effectiveness of the EMS program is measured by incident response data, training, compliance with deployment objectives, and the Department's ability to meet stated levels of service.

Rescue

The Department is certified by the Pennsylvania Department of Health to the Advanced Level in the Voluntary Rescue Recognition Program. The Advanced Level identifies basic tools, equipment (hand and basic power tools), manpower and training requirements that personnel trained to advanced levels can use to undertake basic through complex rescue operations.

Table 10: Mt. Lebanon Fire Department Technical Rescue Capabilities

RESCUE DISCIPLINE	CAPABILITY	PERSONNEL			
		Awareness	Operations	Technician	NFPA 1006
Vehicle & Machinery	Technician			44	23
Trench	Technician	32		11	6
Confined Space	Technician	32		17	6
Rope - High Angle	Operations		29	8	0/23/1
Structural Collapse	Operations	28	4	3	2
Surface Water	Operations	45		3	
Swift Water	Operations	45		3	
Ice Rescue	Operations	32			

The SHACOG Technical Rescue Team is called for incidents that exceed the department's training and / or resources. The SHACOG Tactical Rescue Team is a branch of the SHACOG Fire Chief's Advisory Committee. The Team, consisting of approximately 62 members, is a cooperative effort of thirty-three (33) fire departments and nine (9) EMS agencies serving twenty-one municipalities. Team members are currently Pro-Board / IFSAC Certified in Vehicle & Machinery Rescue, Trench Rescue, Confined Space Rescue, Rope Rescue, and Surface Water Rescue.

For larger incidents, the Department can request assistance from the Region 13, Pennsylvania Strike Team 1. Strike Team 1 is comprised of sixty volunteers filling twenty positions with two alternates for each position that can be called for duty. Members who make up the state's "Region 13" are from 11 Southwestern PA Counties and will respond solely within the state to complement the existing Pennsylvania Task Force 1. The team's sixty members fill the roles of management, rescue, medical, search and rescue, technical search, and haz-mat team members. Members are prequalified in confined-space, trench, rope high angle rescue, structural collapse, hazardous materials operations, incident command, WMD awareness, and water rescue. Members also must have medical training at the Emergency Medical Technician level. Team members all have the required training with enhanced WMD; field operations, structural collapse and engineering practices comprising of 170+ hours of classroom and practical field training.

Common rescue incidents include:

- Vehicle Accident with Entrapment: 1 engine, 1 rescue, 1 medic unit, recall of off-duty personnel
- Stalled Elevator: 1 rescue, 1 medic unit
- Low-angle rescue: 1 rescue, 1 medic unit, recall of off-duty personnel

Annually, the fire chief meets with Special Operations staff and members of the SHACOG Technical Rescue Team to review activities, including training, incidents, ability to meet deployment objective, and equipment needs. The effectiveness of the technical rescue program is measured by incident response data, civilian technical rescue injuries, technical rescue training, mutual aid resource availability, and compliance with deployment objectives and the Department's ability to meet stated levels of service.

Specialized Services

The Department does not provide wildland, aircraft, or marine firefighting. The Department's water rescue capabilities are limited primarily to the Operations Level. The heavy rescue truck is equipped with personal floatation devices, ice rescue suits, throw ropes, and an inflatable raft. Engines and squads are also equipped with personal floatation devices and throw ropes. The City of Pittsburgh Emergency Medical Services and the Peters Twp. Fire Department both operate water rescue and dive teams that can be called for situations beyond the department's capabilities. Responses from these agencies would take approximately twenty (20) minutes.

Fire Prevention

Code enforcement and plans review are performed and managed through the Fire Prevention and Life Safety Education Division, consisting of a deputy chief, two lieutenants and several volunteer fire inspectors. The code enforcement program is designed to ensure compliance with applicable fire prevention law and Department objectives. All fire inspection details and activities are documented in Firehouse Reporting Software. The Department's fire inspectors are trained to Fire Inspector I, II or III Professional Board Certification.

The Fire Prevention and Life Safety Education Division has had documented success over the years achieving voluntary code compliance within the community through the efforts of required annual facility inspections, annual operational permits, scheduled multi-family, commercial and business inspections as well as complaints of code violations from citizens and fire department personnel. In addition, an established plans review process is in place to ensure compliance with applicable codes.

The municipality has adopted the 2015 International Building and Fire Codes, including local amendments. Annually, the fire chief meets with the Fire Prevention and Life Safety Education staff to evaluate the effectiveness of the fire prevention program. This evaluation includes a review of activities, including the number of fire inspections and plan reviews completed, violations noted and corrected, fire experience, and fire pre-planning information.

Fire & Life Safety Education

The Department's public education program addresses several at risk groups including school aged children, preschool children and the elderly. In addition, programs targeting the staff of eldercare facilities are also conducted. The fire and life safety programs developed include individual, business, and community involvement. Fire and life safety education programs are delivered by the Fire Prevention and Life Safety Education Division, and augmented by volunteers and additional career personnel.

Department policies and standard operating guidelines for fire and life safety activities have been established. The Department is adequately equipped to perform fire and life safety programs as currently conducted. Documentation of all fire and life safety activities can be found in the Department's Firehouse Reporting Software. Annually, the fire chief meets with the Fire Prevention and Life Safety Education Division to evaluate the effectiveness of the public education program. This evaluation includes a review of activities, including the number of programs delivered, public reached, school test scores, and fire experience.

Fire Investigations

The origin and cause of all fires in Mt. Lebanon are investigated by the Mt. Lebanon Fire Department. The Department is staffed with two certified fire investigators supported by the Allegheny County Fire Marshal's Office, law enforcement, and other outside agencies. Section 104.10 of the fire code grants authority to the fire department to investigate the cause, origin, and circumstances of any fire, explosion, or other hazardous condition.

Investigators follow a standard operating guideline for fire cause investigations that is based on the scientific method and nationally recognized fire investigation methodology. Department fire investigators have access to the equipment necessary to conduct fire investigations, and document investigation activities using Firehouse Reporting Software. Annually, the fire chief meets with the Department's certified fire investigators to evaluate the effectiveness of the fire investigation program. This evaluation includes a review of activities, including the number of fire investigations, outcomes, status of pending investigations, and fire cause trends.

Emergency Management

The Department maintains an emergency operations plan that defines roles and responsibilities of all participating departments and external agencies and includes processes for interoperability with other public safety agencies. The Operations & Emergency Management Platoon conducts NIMS training for all municipal personnel that are related to emergency management functions. The Department also falls under the Allegheny County operations plan.

Additional resources are identified in the Department emergency operations plan and the county plan. The operations of the emergency management platoon is carried out through a series of standard operating guidelines. Periodic exercises and drills are conducted to test operational readiness in various forms and this information is tracked through Firehouse Reporting Software.

Community Outreach

The Department offers numerous community outreach programs and services in addition to its public education programs. These services include:

- Smoke Detector Installation Program
- Senior Fire Life Safety Program
- Block Parties
- Home Safety Inspection Program
- Fire Station Tours
- Special Needs Resident Program
- Boy Scouts / Venture Crew
- Hazardous Household Waste Program
- Citizen's Fire Academy
- Safety Fairs
- Safety Camp
- Prom promise / Every 15 Minutes programs
- After the Fire Program
- Fireplace Inspections

Annually, the fire chief meets with the Community Services & Outreach staff to evaluate the effectiveness of the community outreach programs. This evaluation includes a review of activities, including the number of programs delivered, public reached, fire experience, and needs.

Training

The Department has a training program that is structured to meets its operational needs. The program has components that allow the training staff to identify training and educational needs that are consistent with the mission and applicable legal requirements and standards of practice. These include local, state, and federal requirements and standards; a training needs assessment; and an on-going evaluation of necessary knowledge, skills, and abilities.

New recruits are required to complete a 200-hour Pennsylvania State Fire Academy Essentials of Firefighting Class, obtain Pro-Board Firefighter I & II Certifications, and attend a safety orientation that includes operations and hazards specific to the Department.

On-going training is held on Monday evenings for all staff members and career / officer-specific training is held for career members on a monthly basis. All members are encouraged to attend outside training and seminars. Incumbent volunteer firefighters averaged 149 hours of training and career staff members averaged 214 hours of training in 2018.

The Department utilizes competency-based training methods to evaluate individual and crew performance. Training materials are evaluated on an on-going basis to reflect current practices, trends, and research. Training facilities are available throughout the region.

Annually, the fire chief meets with the Training Division staff to evaluate the effectiveness of the training program and to develop an annual training plan.

Section 3: Community Expectations & Agency Goals

Community Expectations

Community expectations and performance goals were developed as part of the strategic planning process. The process utilized to develop the department's strategic plan and gauge community expectations and performance goals included:

The following procedures were utilized in the development of the strategic plan:

1. Review of documents including the 2018 Mt. Lebanon Fire Department Strategic Plan, 2017 Mt. Lebanon Fire Department Annual Report, 2017 Mt. Lebanon Fire Department Training Needs Assessment, 2017 accreditation report, 2018 Mt. Lebanon Comprehensive Plan, and 2018 Mt. Lebanon Strategic Financial Plan
2. Review of fire incident and non-emergency activity data
3. Department mission, vision, and values
4. Survey of volunteer staff
5. Survey of career staff
6. Volunteer staff focus group
7. Career staff focus group
8. Presentation to Mt. Lebanon Commission
9. Resident focus group
10. Business and facility focus group
11. External stakeholder focus group
12. Chief officer discussion session
13. Department review and comment on draft plan

The career and volunteer staff surveys were based on a modified Campbell Orgnizational Survey instrument. The external stakeholder focus group was comprised of other municipal departments (police, planning), automatic and mutual aid fire departments, and outside agencies (Medical Rescue Team South Authority and Mt. Lebanon Community Relations board).

Members were asked to rank fire department services in order of importance, 1-15 with 1 being high and 15 being low, while residents were asked to rank services in order of their awareness of the program as "High", "Medium", and "Low" (Table 11). Resident feedback indicates that residents are not fully aware of the scope and number of non-emergency services offered.

Table 11: Priority Ranking of Fire Department Services

Service / Program	FD Rank	Public Awareness
Fire Inspections & Code Enforcement	3.11	Medium
Smoke Alarm Installations	3.50	Low
Facility Staff Training	4.17	Low
Fire & Life Safety Education Program	4.50	High
Fireplace & Home Safety Inspections	4.56	Low
Neighborhood Smoke Detector Blitzes	6.17	Low
Citizen's Fire Academy	8.50	Low
Safety Fairs	9.25	Low
Kids Public Safety Camp	10.17	Low
Station Tours	10.75	Low
First Fridays / Ultra Party	11.78	Medium
Block Parties	12.11	Medium
Public Notification via Local Cable	12.33	Low
Blood Drives	12.75	Low
Fourth of July Activities	12.78	Medium
Light Up Nights	12.89	Medium
Memorial Day Parade	13.44	High
Halloween Parade	14.44	High
Relay for Life	15.00	Low

While no specific performance goals are defined by the community, the department's ability to respond effectively and efficiently to emergencies continues to be the community's number one priority. The Department will continue to strive to meet national standards and "best practices" regarding resource deployment.

Some of the objectives defined in the Strategic Plan related to emergency response and performance goals include:

- Continue to achieve re-accreditation
- Update pre-incident plan for unique hazards
- Increase reliability of volunteer staffing for emergency response
- Expand training and meetings with mutual aid fore departments
- Conduct incident command training
- Construct a hands-on training facility
- Improve post-incident reviews as a training tool

Agency Goals

Annually, the Department publishes general organization goals directed toward achieving the community's and Department's long-range plans. These goals are reviewed and established with input from elected officials, the municipal manager, and members of the organization representing every operational program area. Corresponding specific objectives are published to implement these goals and incorporate the measurable elements of time, quantity, and quality. Quarterly operational goals are also developed by Department leadership and published to support annual and long-term goals.

The department's goals are reviewed annually by the department's strategic planning committee to track progress. These goals, including specific objectives, are explained in greater depth in the department's strategic plan. A summary of the goals are as follows:

Goal 1 – Continue to improve service delivery to the community

Objective 1-A	Achieve re-accreditation from the Commission on Fire Accreditation International
Objective 1-B	Update pre-incident plans for target hazards
Objective 1-C	Publish and review the updated municipal emergency operations plan
Objective 1-D	Increase the reliability of volunteer staffing for emergency responses
Objective 1-E	Augment customer service and post-emergency victim support
Objective 1-F	Expand training and meetings with mutual aid fire departments and outside agencies
Objective 1-G	Conduct NIMS refresher training
Objective 1-H	Conduct incident command training
Objective 1-I	Establish a juvenile fire setter intervention program
Objective 1-J	Improve the fire investigator program
Objective 1-K	Develop a personal development plan for each member
Objective 1-L	Evaluate continuity of operations plan readiness
Objective 1-M	Evaluate the accuracy and effectiveness of critical procedures

Goal 2 – Improve organizational effectiveness

Objective 2-A	Redundancy / succession planning
Objective 2-B	Evaluate the effectiveness of the recruitment and retention plan
Objective 2-C	Review the accident prevention and risk management plan
Objective 2-D	Research and update technology
Objective 2-E	Construct a hands-on training facility
Objective 2-J	Improve post incident reviews as a training tool
Objective 2-G	Refine records management

Goal 3 – Continue to support effective community outreach

Objective 3-A	Create a framework for program delivery of MLFD missions
Objective 3-B	Increase public awareness of department non-emergency services
Objective 3-C	Continue the door-to-door smoke alarm and CO installation and awareness campaign
Objective 3-D	Monitor the organizational feedback using a survey
Objective 3-E	Monitor external feedback using a survey

Goal 4 – Maintain quality facilities

Objective 4-A	Conduct a comprehensive station maintenance assessment

Goal 5 – Continue to pursue grant funding opportunities

Objective 5-A	Utilize grant funds to facilitate MLFD missions

Goal 6 – Improve Leadership Development and Consistency

Objective 6-A	Formalize job duties of volunteer classifications
Objective 6-B	Provide leadership training to staff

Goal 7 – Improve internal communications

Objective 7-A	Improve departmental communications via appropriate media
Objective 7-B	Develop volunteer organizational and benefit training

Section 4: Risk Assessment

A comprehensive risk assessment was conducted for both fire and non-fire emergencies. The factors used for risk assessment are both physical and theoretical. The two primary components of a risk assessment are an analysis of probability and consequences. Probability is the likelihood that a particular event will occur in a given time period. There are three areas of concern when evaluating consequences: 1) life safety (danger to occupants); 2) economic (loss of property, income, historic, or irreplaceable assets); and 3) environmental (irreparable or long term damage to the environment). Figure 18 below displays a matrix that is utilized to classify hazards based on the probability and consequences of risk

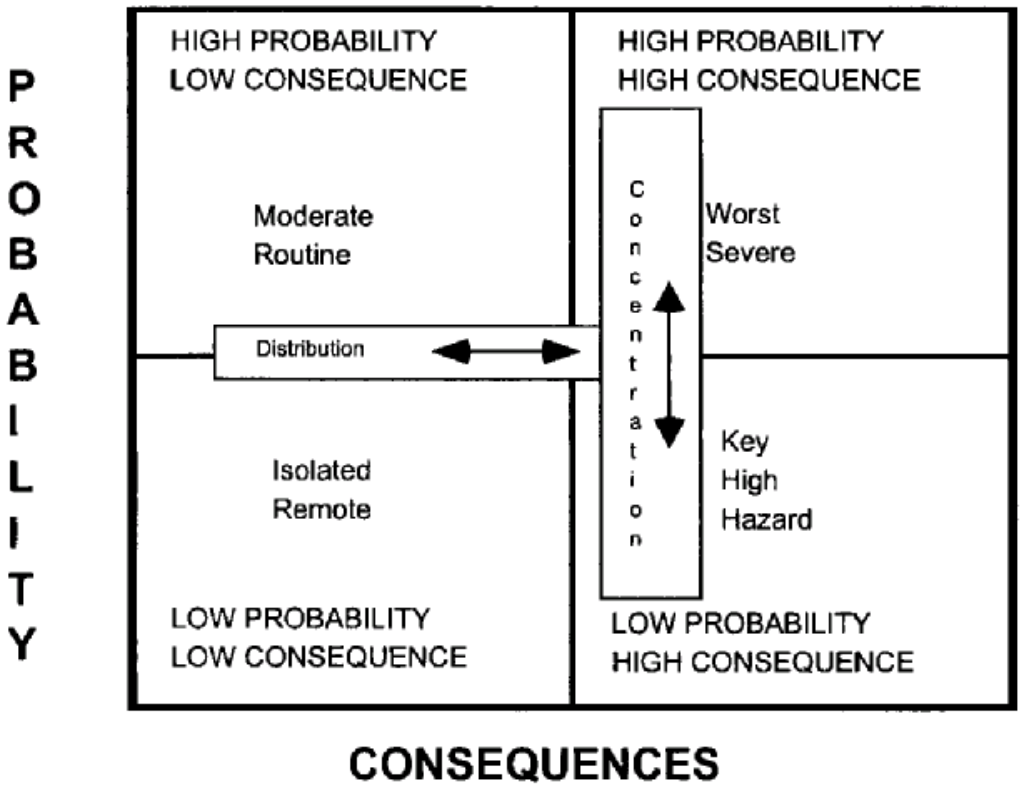


Figure 18: Probability / Consequence Matrix

Geographic Planning Zones

For the purposes of analysis and planning, Mt. Lebanon has been divided into ten (10) Geographic Planning Zones. Within each zone, consideration was given to zone size, land use types, structures, economic factors, relative population densities, land use elements, and areas/structures within each zone that present particular hazards or high fire risk due to their size, location or occupancies. The planning zones allow for the closest response of surrounding automatic/mutual aid companies.

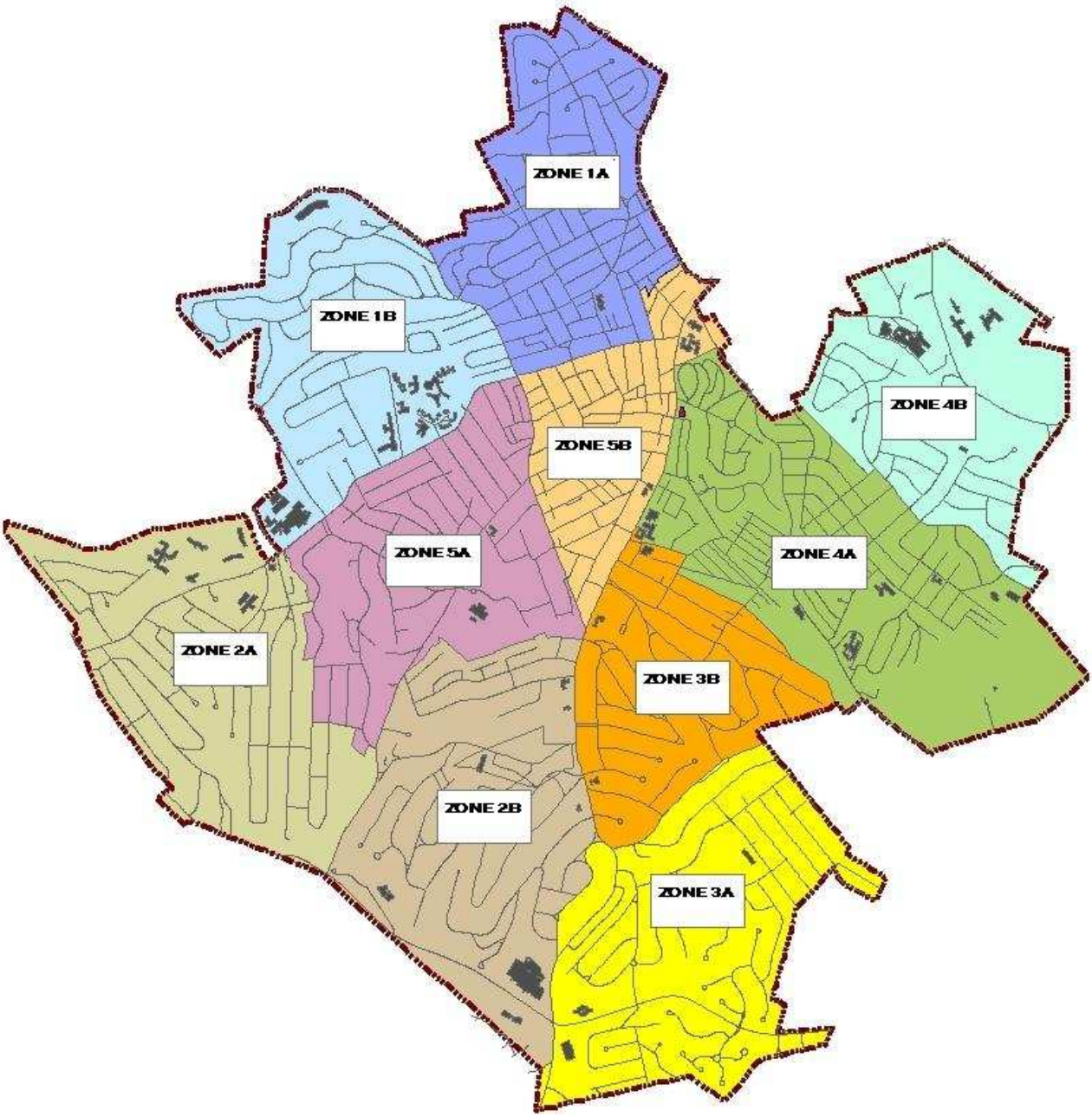


Figure 19: Mt. Lebanon Geographic Planning Zones

Community risk factors have an impact on both fire and non-fire related hazards. The evaluation of community risk includes the assessment of community demographics and development, natural hazards, technological hazards, transportation networks, security hazards, and fire planning zones.

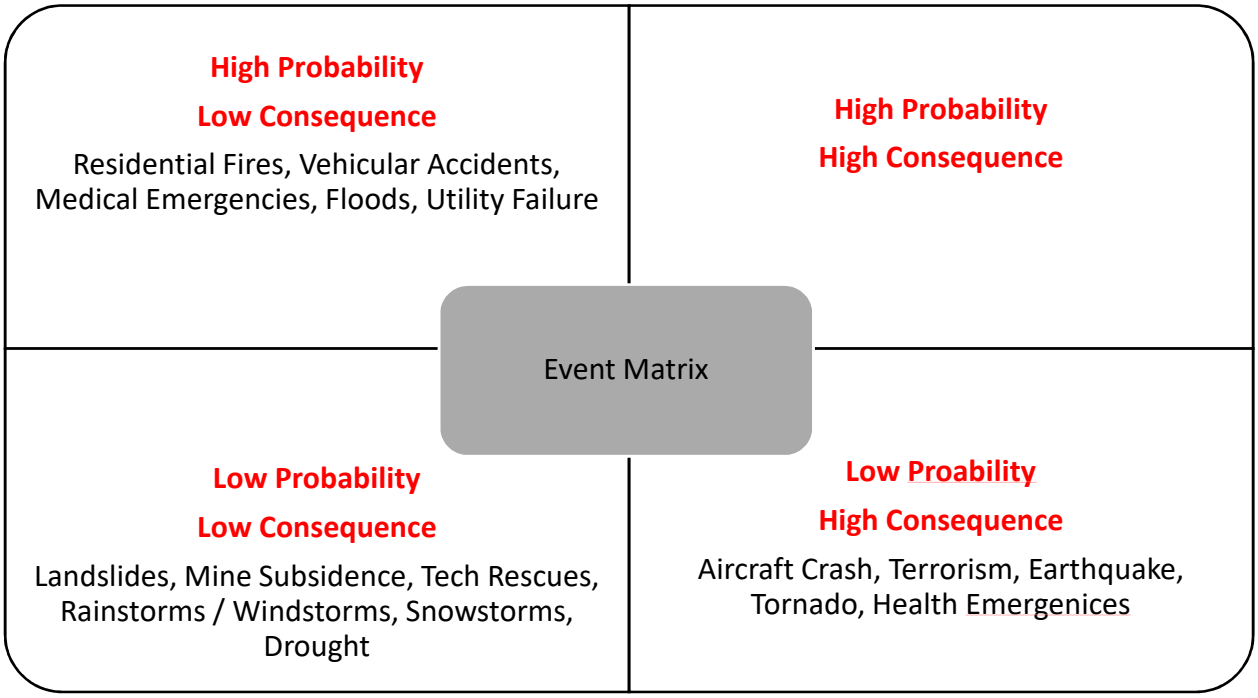


Figure 20: Event Ranking Matrix

Natural Hazards

Mt. Lebanon is in a low risk area for natural disasters such as earthquakes and tornadoes. Risks for these types of hazards are considered to be low probability with high consequence. Natural hazards with slightly higher probabilities, resulting in slightly lower risk, are rainstorms/ windstorms, severe snowstorms, drought, landslides, mine subsidence, and flooding.

Earthquakes - Southwestern Pennsylvania has a very low probability of an earthquake; therefore, these have been classified as a high risk, low probability, moderate consequence hazards. There has never been any property damage, injuries or deaths cause by this natural occurrence.

In August of 2011, a magnitude 5.8 earthquake, about 87 miles outside of Washington, D.C., was felt in Mt. Lebanon.

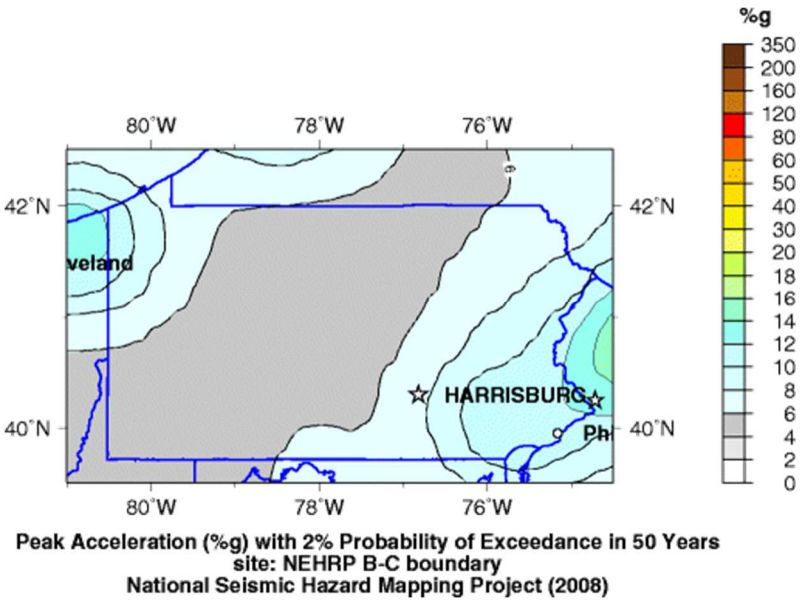


Figure 21: Earthquake Probability for Mt. Lebanon

Tornadoes - Tornadoes have been classified as a high risk, low probability, high consequence hazards. On average, Pennsylvania annually experiences twelve tornadoes. Since 1954, there have been fourteen tornadoes in Allegheny County. Two tornadoes have touched down in close proximity to Mt. Lebanon, in Carnegie in 1998 and 2003. While susceptible to tornados, there have been no documented tornadoes that have touched down in the Mt. Lebanon.

Rainstorms/Windstorms - Thunder and wind storms have been classified as low risk, high probability, low consequence hazards. Southwestern Pennsylvania is extremely susceptible to thunder storms that produce high winds and hail. Typically, these storms are seen during the spring and summer months. Effects of the storms are usually downed power lines and trees, which produce multiple fire alarms. Damage by these storms is usually localized.

Significant historical thunderstorm / rain weather events that have taxed the department's resources have included (Table 12):

Table 12: Mt. Lebanon Significant Rainstorm / Windstorm Events, 1993 - 2019

Date	Event	Wind Speed	Precipitation	Calls
7/10/93	Rain, Thunderstorms	27 mph	0.38 in.	52
7/18/97	Rain, Thunderstorms	42 mph	1.12 in.	38
6/30/98	Rain, Thunderstorms	62 mph	.53 in.	49
7/28-29/99	Rain, Thunderstorms	47 mph	3.45 in.	141
8/6-7/00	Rain, Thunderstorms	22 mph	1.57 in	103
12/12/00	Wind, Light Snow	42 mph	0.06 in.	42
7/18/02	Rain, Thunderstorms	30 mph	2.0 in.	21
6/8/03	Rain, Thunderstorms	56 mph	.91 in.	36
9/8-9/04	Rain, Thunderstorms	32 mph	3.83 in.	30
9/17-18/04	Hurricane Remnants	33 mph	5.95 in.	192
1/6-7/05	Hurricane Remnants	32 mph	0.73 in.	25
7/30-31/06	Rain, Thunderstorms	32 mph	0.34 in.	46
9/22/10	Microburst	50 mph	0.6 in.	184
6/20/18	Rain, Thunderstorms	16 mph	2.25 in.	55

Note: Significant events are defined as those that tax fire department resources in terms of call volume and/or cause moderate to heavy damage.

Snowstorms / Ice - Snowstorms have been classified as low risk, high probability, low consequence hazards. In addition to normal weather fronts, additional accumulation can be attributed to winds blowing across Lake Erie from north to south. The Mt. Lebanon Public Works Department and the Pennsylvania Department of Transportation maintain efficient fleets for snow removal. During times of increased snowfall, fire apparatus responds with increased caution. When response delays due to accumulated snow are expected, especially of off-duty career and volunteer personnel, additional staffing is brought in on overtime to ensure an adequate initial firefighting force.

Table 13: Mt. Lebanon Significant Winter Weather Events, 1993 – 2019

Date	Event	Snow	Ice	Sleet / Rain
3/93	Heavy Snow / Blizzard	24.6 in.	-	-
1/94	Heavy Snow	20.0 in.	-	-
1/94	Heavy Snow	9.0 in.	-	-
3/95	Heavy Snow	8.0 in.	-	-
1/96	Heavy Snow	9.2 in.	0.7 in.	-
2/03	Heavy Snow	15.0 in.	-	.2 in.
12/03	Heavy Snow	8.0 in.	-	.3 in.
2/05	Ice Storm	-	.25 in.	-
2/07	Winter Storm	8.0 in.	-	1.5 in.
2/05	Ice Storm	-	.25 in.	-
2/10	Heavy Snow	22.0 in.	-	-

Landslides - Due to the topography and heavy precipitation, the Municipality is vulnerable to landslides. Landslides have been classified as low risk, low probability, low consequence events. Landslide Vulnerability Maps are included in Appendix C.

Mine Subsidence - All structures in the Municipality are within mined areas (Appendix D); however, there has been no indication of mine subsidence in the Municipality and no damage has been attributed to mine subsidence. Mine subsidence has been classified as a low risk, low probability, low consequence event.

Drought - Droughts have been classified as low risk, low probability, low consequence hazards. During the last drought, dry conditions began in July 1998 and continued through August. The month of August started with eight Western Pennsylvania counties already under a state-declared Drought Emergency, four counties under a Drought Warning, and three counties under a Drought Watch. On August 2, the U.S. Department of Agriculture declared four counties (Beaver, Fayette, Greene and Washington Counties) agricultural disaster areas.

Average basin rainfall across Western Pennsylvania for the month of August averaged anywhere between 0.50 and 2.50 inches below normal. Most reservoirs were running between 5 and 10 feet below their normal summer pool, but a few were as much as 25 to 30 feet below normal. The Palmer Drought Index showed the area to be borderline between a moderate and severe drought. In general, the area experienced a 15% to 25% precipitation deficit throughout the year, with a 60-day deficit (from 1 June through 31 July) of around 50%.

Floods - Floods have been classified as low risk, high probability, low consequence events, especially on localized streets and in basements. There have been five (5) flooding events on Cedar Boulevard in the past fifteen years, two of which can be attributed to Hurricane's Ivan and Katrina. On July 18th, 2002, fire fighters rescued a trapped occupant from a vehicle stuck in flood waters at the intersection of Greenhurst Drive and Cedar Boulevard after thunderstorms dropped two inches of rain in less than an hour, producing flash flooding in the intersection. During Hurricane Ivan, fire department personnel assisted Upper St. Clair Police Officers with the swift water rescue of a juvenile from Painter's Run Creek along the Municipal border with Upper St. Clair Township.

Figure 22: Mt. Lebanon Flood Plains

Technological / Human Hazards

Equitrans High Pressure natural Gas Transmission Line - An Equitrans high pressure natural gas transmission line runs along the southern border of the Municipality (Figure 23). The transmission line presents a high risk but with a low probability based on the low frequency of events both locally and nationally. The Mt. Lebanon Fire Department maintains a *Pipeline Group Emergency Response Manual* with contact information and response plans for incidents involving the high pressure transmission line.

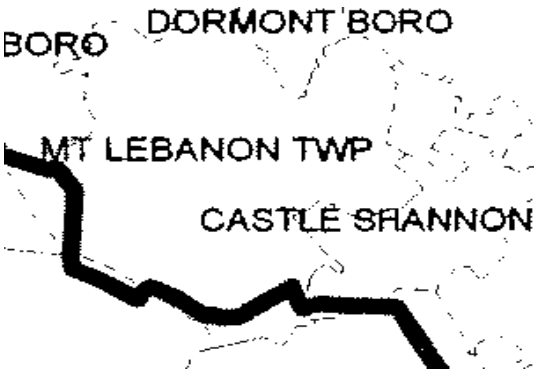


Figure 23: Location of Equitrans Pipeline

Hazardous Materials - Mt. Lebanon is vulnerable to hazardous material incidents, but has had a low frequency of occurrence. Hazardous materials incidents are classified as moderate risk, moderate probability, moderate consequence hazards. The agency's jurisdiction includes US Truck 19, which is designated as a hazardous material bypass to get to Route 51 and avoid the tunnels leading into the City of Pittsburgh.

There are very few facilities that use and store quantities of hazardous materials. The Department has prepared for these types of emergencies by training all career staff members to the Hazardous Materials Technician Level and through mutual aid agreements with the Allegheny County Hazardous Materials Team. The majority of hazardous materials incidents in Mt. Lebanon involve fluids from vehicle accidents and natural gas leaks.

Table 14: Hazardous Materials Incidents, 2015 – 2019

HAZ MAT INCNTS	TOTAL	YEARLY AVG.
Gasoline or other flammable liquid spill	52	10
Gas leak (natural gas or LPG)	260	52
Oil or other combustible liquid	17	3
Chemical / spill or leak	21	4
Carbon monoxide incident	61	12
Toxic / chemical hazard, refrigerant leak	3	<1
Biological hazard	3	<1

Utility Failure - Utility failure has been classified as a low risk, high probability, low consequence hazard. Mt. Lebanon is vulnerable to utility failure either from natural gas, phone, water or electrical failure. This risk has been prepared for. The department currently maintains emergency generators for both stations, a supply of potable water and a resource list for other possible logistical needs as part of the Mt. Lebanon Emergency Operations Plan.

Transportation Hazard – Air

Located 18 miles northwest of Mt. Lebanon, the Pittsburgh International Airport (PIT) accommodates more than 10 million travelers in nearly 210,000 aircraft operations per year. With about 191 non-stop flights per day to 49 destinations, Pittsburgh International Airport is served by 13 air carriers.

Aircraft incidents have been classified as high risk, low probability, high consequence hazards. On May 17, 2000, a single-engine Piper Cub airplane made an emergency landing in a field off of McNeilly Road in Mt. Lebanon Response Zone 4B. The airplane received minor damage and the pilot was not injured.

Mt. Lebanon is located 18 miles southeast of Pittsburgh International Airport (PIT). Aircraft approaching and departing PIT frequently fly over Mt. Lebanon. While there has been no history of any accidents involving commercial aircraft in Mt. Lebanon, U.S. Airways Flight 427 from Chicago's O'Hare International Airport to Pittsburgh, Pennsylvania, with a final destination of West Palm Beach, Florida, crashed in Hopewell Township on approach on 8 September 1994, killing everyone on board.

Mt. Lebanon receives a considerable amount of medical helicopter air traffic with medical helicopters flying over daily from the City of Pittsburgh to outlying areas and medical facilities. A helicopter landing pad is located at St. Clair Hospital, in Response Zone 1B. The frequency of helicopter landings at the Hospital is low due to its proximity to the many trauma centers located approximately 5 miles away in Downtown Pittsburgh.

Should a large aircraft crash, the Mt. Lebanon Fire Department would activate its mutual aid system, as well as the Allegheny County Airport Authority and the Region 13 Strike Team for resources.

Transportation Hazard – Light Rail

Opened in 1984, the Port Authority of Allegheny County's 25-mile Light Rail Transit (LRT) System, provides service to Downtown Pittsburgh and several communities south of the city. Entering Mt. Lebanon from Castle Shannon Borough at Mt. Lebanon Boulevard, the LRT provides approximately 22,000 passengers per day with convenient and efficient transit service to Downtown Pittsburgh and other destinations in southern Allegheny County.

Directly behind the Mt. Lebanon Public Safety Building on Shady Drive East at the Mt. Lebanon LRT Station, the LRT travels under Mt. Lebanon via a .6 mile underground tunnel, exiting in Dormont at the Dormont Junction near McFarland Road. The total length of aboveground track in Mt. Lebanon is .9 miles, for a total stretch of 1.5 miles. Incidents involving the LRT have been classified as moderate risk, low probability, moderate consequence events.

Figure 24: Port Authority Light Rail Service Map

Transportation Hazard – Railroad

Running approximately ¼ mile to the east of Mt. Lebanon in Castle Shannon Borough, railroad traffic on the Wheeling & Lake Erie Rail Line includes approximately four to six trains per day carrying freight and other materials to the City Of Pittsburgh. While the exact types and quantities of materials carried are primarily natural gas liquids, fracking sand, and fracking brines. The release of any materials giving off vapors has the potential to threaten eastern portions of the Municipality. Railroad incidents affecting the Municipality have been classified as high risk, low probability, moderate consequence events.

Transportation – Road Network

U.S. Route 19 Truck is an auxiliary route of U.S. Route 19 located in Western Pennsylvania in the Pittsburgh Metro Area that has a length of 19 miles. The southern terminus is at U.S. Route 19 near Mt. Lebanon and the northern terminus is U.S. Route 19 in McCandless Township. Trucks are not allowed on U.S. Route 19 and this is the route for trucks, especially those carrying hazardous cargos that cannot pass through the many tunnels leading into the City of Pittsburgh.

US 19 Truck begins as U.S. Route 19 enters Mount Lebanon as Washington Road. US 19 branches northwest to skirt Mt Lebanon and Dormont, while US 19 Truck continues through the center of these towns. Vehicle accidents have been classified as low risk, high probability, low consequence events.

Health Emergencies - Pandemic has been classified as a moderate risk, moderate probability, moderate consequence event. While H1N1 was considerably mild with low consequences in 2009, there is a moderate probability that it will return in a stronger form or that other pandemics may occur. The department currently maintains a pandemic response plan and has worked with the police department, health department, school district, and county health department to set up a drive-thru point of distribution for medications for a pandemic outbreak. The department has also planned for staff shortages, developed a supply cache of masks and gloves, and taken proactive steps to limit the spread of any viruses in Municipal facilities by overseeing the installation of hand sanitizers and providing educational materials.

Security Hazards

Civil Disturbance – Civil disturbance has been classified as a moderate risk, low probability, moderate consequence hazard. While generally a police department issue, the fire department will attempt to extinguish fires and treat the injured, when safe, during these events. In the past, there have been small demonstrations in front of Congressman Tim Murphy's Office and the department participated in the planning for the 2009 G20 Summit in the City of Pittsburgh.

Terrorism – Terrorism has been classified as a high risk, low probability, high consequence hazard. Since September 11, 2001 the fire department has taken the threat of terrorism seriously. The Department views terrorism as a significant threat with significant consequences. The Department has purchased a Draeger WMD Sampling Kit and has trained all members in responding to terrorism and weapons of mass destruction. In addition, the Department has updated its Emergency Operations Plan to include terrorism response protocols and has worked with local facilities to ensure their emergency plans address terrorism.

Locally, the Pennsylvania Region 13 Working Group Counter-Terrorism and Emergency Task Force is responsible for coordinating emergency preparedness and response in southwestern Pennsylvania. Its membership includes the Emergency Management Coordinators of 13 counties and the city of Pittsburgh, plus representation from the Pennsylvania Emergency Management Agency and the Federal Bureau of Investigation.

The idea for the region 13 Working Group came from the explanation of the ideas and philosophies developed during three years of discussion in the Pittsburgh/Allegheny County Weapons of Mass Destruction (WMD) Task Force. It was realized that during any significant incident, the entire region could be called to assist local responders. As a result of terrorist incidents in other parts of the country, it was realized that the terrorists do not care about geographical boundaries. The terrorists will plan and practice in the remote, isolated areas within any geo-political jurisdiction. Therefore, it was determined that the work of the Pittsburgh/Allegheny Task Force needed to continue, but there was a significant need to bring other counties together.

Fire Risk Assessment

Residential structure fires have been identified as a moderate risk, moderate probability, moderate consequence events. Commercial structure fires have been classified as special, high, moderate, or low risk (Appendix A). The Department's response area includes both residential and commercial areas. The department responds to an average of 15 structure fires annually. The Department maintains resources to mitigate most fire emergencies. Through automatic and mutual aid agreements, all fire emergencies can be safely mitigated.

An occupancy risk assessment program has been developed to identify and strategically plan responses to buildings and areas based on hazard rating. The risk assessment takes into consideration numerous factors such as type of construction, number of floors, square footage, occupant load, occupant mobility, occupancy type, fire protection features, fire load, needed fire flow, economic impact, and combustibility. In addition, the risk assessment also takes into consideration the probability of an event happening and the consequence that it will have.

Based on the overall occupancy vulnerability score for each building, along with the probability of an event occurring and the potential consequences of an event, risks were classified into the categories of Special risk, High risk, Moderate risk and Low risk classes.

Special Risk: This risk can be defined as properties or risks of substantial size that present the potential for a severe loss of life, severe loss of economic values to the community, large loss to property, or that poses special challenges for emergency responders. *Examples: Hospitals, nursing homes, malls, high rise buildings with large senior populations, light rail tunnel.*

High Risk: This risk can be defined as properties or risks of substantial size, or a predominate concentration of properties, presenting the potential for a substantial loss of life, a severe financial impact on the community, unusual damage to property, or the inability to deliver core public services. *Examples: strip shopping malls, infrastructure facilities (city halls, fire and police stations, schools), group homes, apartment buildings with greater than 25 living units, large churches, day care facilities, and occupancies with heavy or hazardous fire loads or building construction features that pose a risk to fire fighters.*

Moderate Risk: This classification includes built-up areas of average size with a moderate potential for the loss of property and life that is generally limited to a relatively small number of occupants. *Examples: detached single- family homes, multifamily dwellings with less than 25 units and commercial buildings that do not fall into the special or high-risk categories.*

Low Risk: This classification contains non-residential properties that are isolated from any centers of population and contain few buildings or sprinklered commercial properties that pose minimal risk to loss of life or property. *Examples: detached residential garages, out buildings, commercial structures remote from other buildings.*

A breakdown of the scoring system utilized to classify the categories of risk is included in Appendix A. By combining a group of buildings by overall vulnerability scores from a specific geographic area, the department can then evaluate the community's Values-at-risk (VAR). VAR is an inventory of the community's potential fire problems viewed from the most vulnerable and valuable to the least vulnerable and valuable. An analysis of the VAR helps the department determine the deployment and amount of emergency responders needed in a specific area.

The following Table identifies the number of occupancies by category, not including out buildings, located in each Geographic Planning Zone:

Table 15: Occupancies by Category by Geographic Planning Zone

Group	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	Total
A	10	1	1	10	1	4	10	5	0	16	58
B	29	3	5	14	0	1	47	3	3	112	216
E	1	2	1	1	1	0	1	6	1	6	20
F	0	0	0	0	0	0	0	0	0	0	0
I	0	12	2	2	0	0	2	1	0	1	20
M	16	1	1	39	9	0	9	0	0	33	108
R-1	0	0	0	0	0	0	0	1	0	1	2
R-2	50	0	4	4	7	7	16	0	1	108	197
R-3	1,402	769	1,061	1,159	1,127	985	1,393	794	1,112	1,156	10,958
R-4	0	0	0	0	0	0	0	0	0	0	0
S	0	1	0	0	0	0	2	1	0	1	5
Total	1,508	789	1,075	1,229	1,145	997	1,480	811	1,117	1,434	11,585

Single-family residential dwellings and duplexes account for 94.6% of the community's occupancies. All single-family residential dwellings and duplexes have been classified as moderate risk. Commercial occupancy risk classifications, by Geographic Planning Zone, are as follows (Table 16).

Table 16: Commercial Risk Class by Geographic Planning Zone

Zone	Special Risk	High Risk	Moderate Risk	Low Risk	Percent
1A	0	7	68	1	19.2%
1B	5	3	2	0	2.5%
2A	1	11	3	1	4.0%
2B	3	5	14	0	5.6%
3A	0	4	4	0	2.0%
3B	0	4	8	1	3.5%
4A	2	7	41	6	14.1%
4B	1	4	7	0	2.5%
5A	0	2	3	0	1.3%
5B	4	23	153	0	45.3%
TOTAL	**16**	**70**	**303**	**9**	**100%**

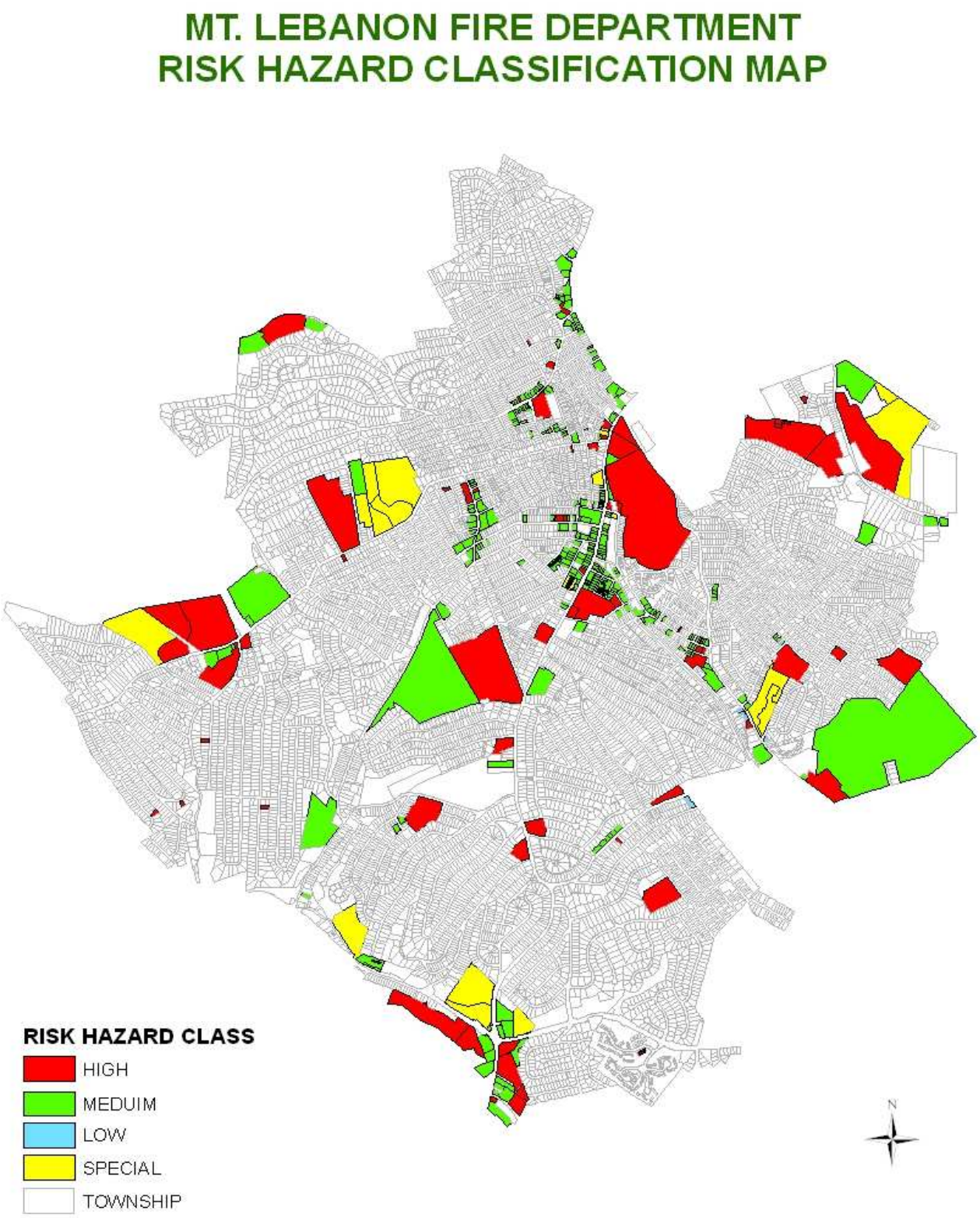


Figure 25: Occupancy Risk Classification Map

Over 45% of the Municipality's commercial occupancies are located in Zone 5B. Ninety-nine percent of the community's risk is moderate, 1 and 2 family dwellings.

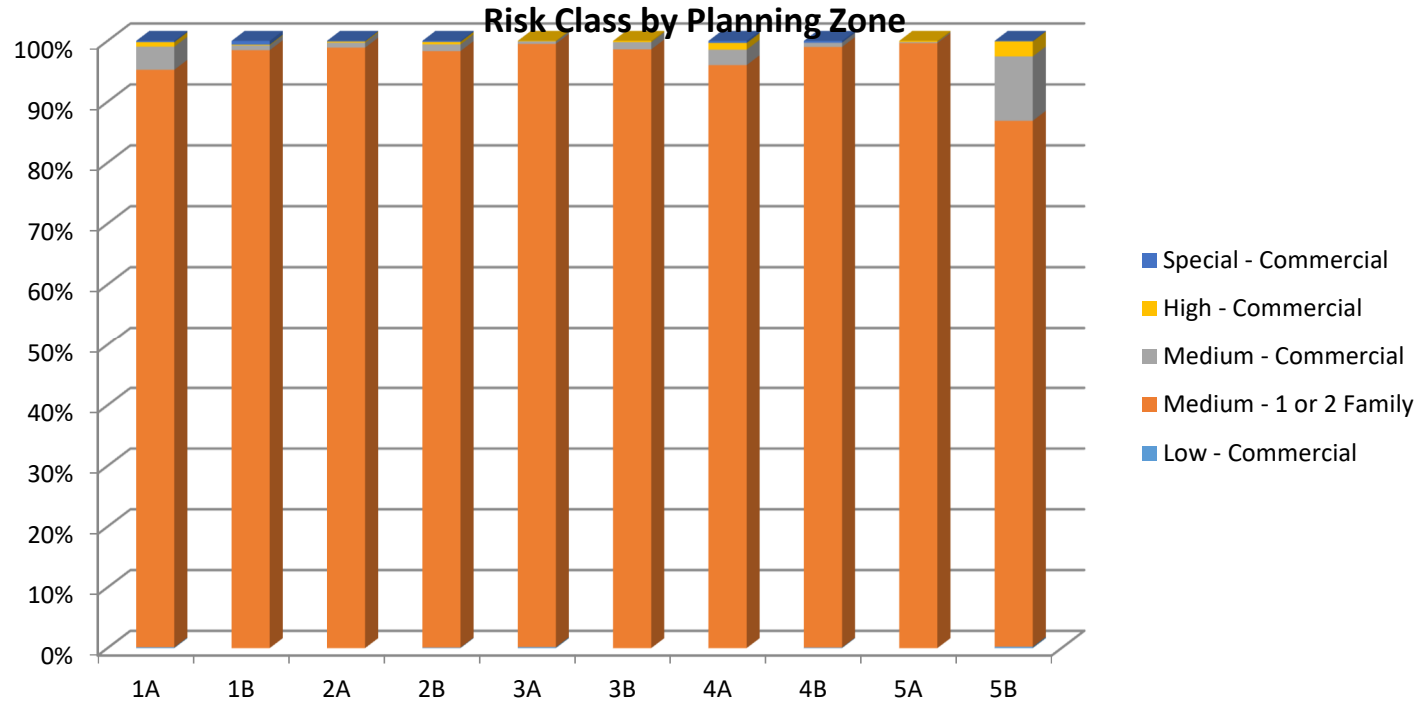


Figure 26: Commercial Risk Class by Planning Zone

Based on the Risk Analysis, features of the physical assets include (Figures 26 - 30):

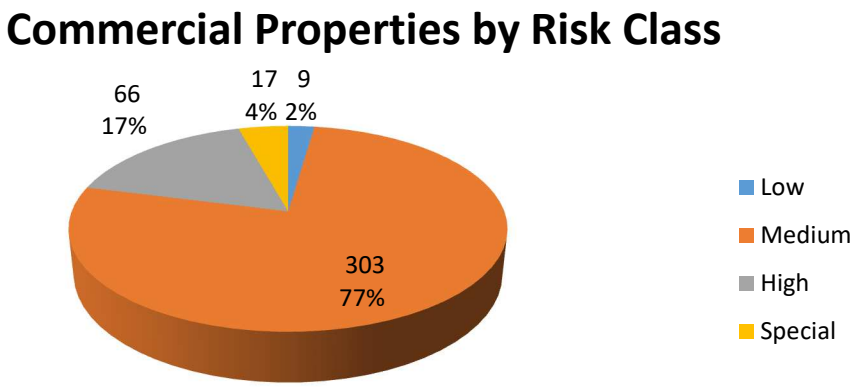


Figure 27: Commercial Properties by Risk Class

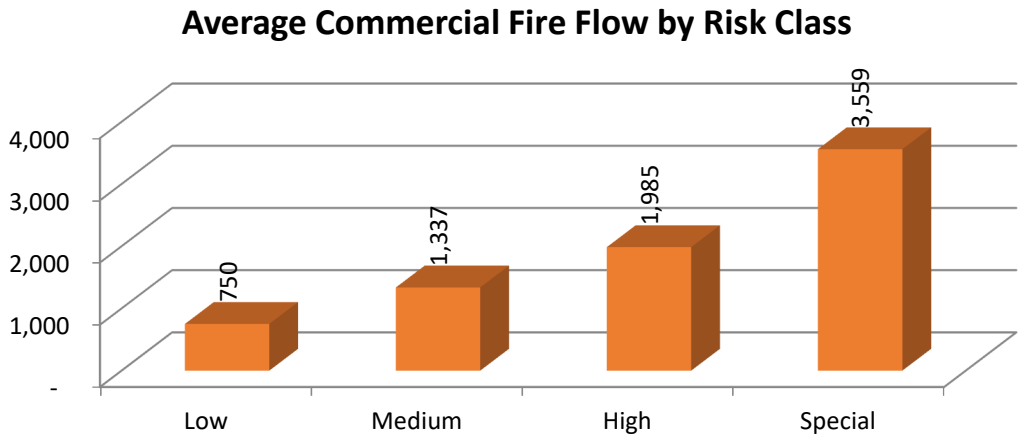


Figure 28: Average Commercial Fire Flow by Risk Class

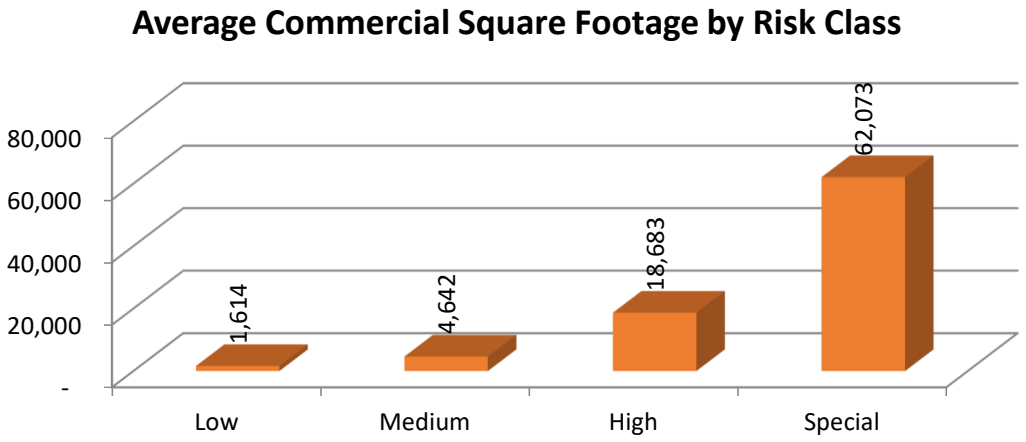


Figure 29: Average Commercial Square Footage by Risk Class

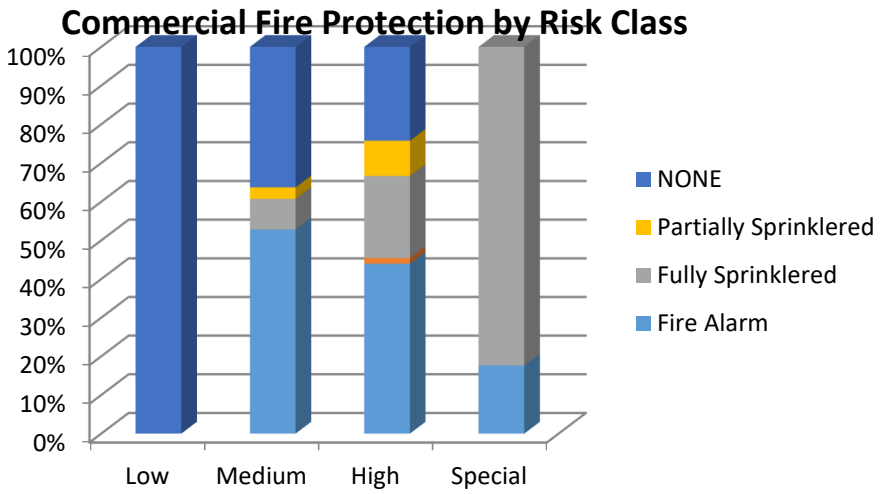


Figure 30: Commercial Fire Protection by Risk Class

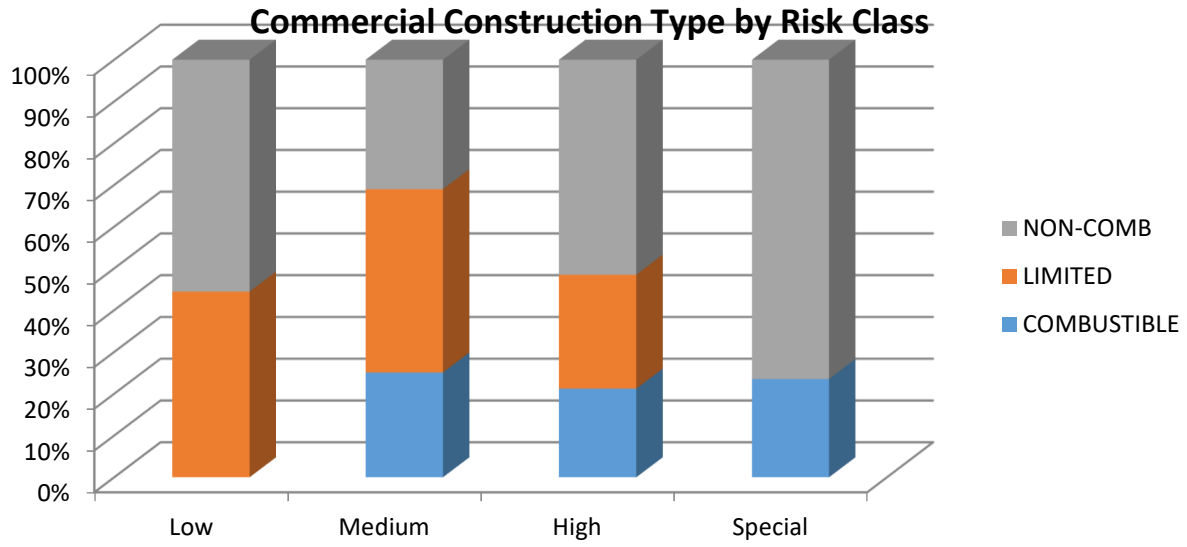


Figure 31: Commercial Construction Type by Risk Class

Table 17: Structure Fire Incidents, 2015 – 2019

STRUCTURE FIRE INCIDENTS	TOTAL	YEARLY AVG.
Structure Fire	73	14
Cooking, chimney and structures other than buildings	65	13

Over the previous five-year period, the greatest percentage of structure fires (25%) have occurred in Geographic Planning Zone 5B with the fewest (3%) occurring in Geographic Planning Zone 5A, followed by Zones 3A (4%) and Zone 4A (4%). The Department has responded to an average of 14 structure fires annually in the community.

Table 18: Structure Fires by Geographic Planning Zone, 2015-2019

District	Total
1A	10
1B	8
2A	9
2B	9
3A	3
3B	5
4A	5
4B	3
5A	3
5B	17
OUT	72

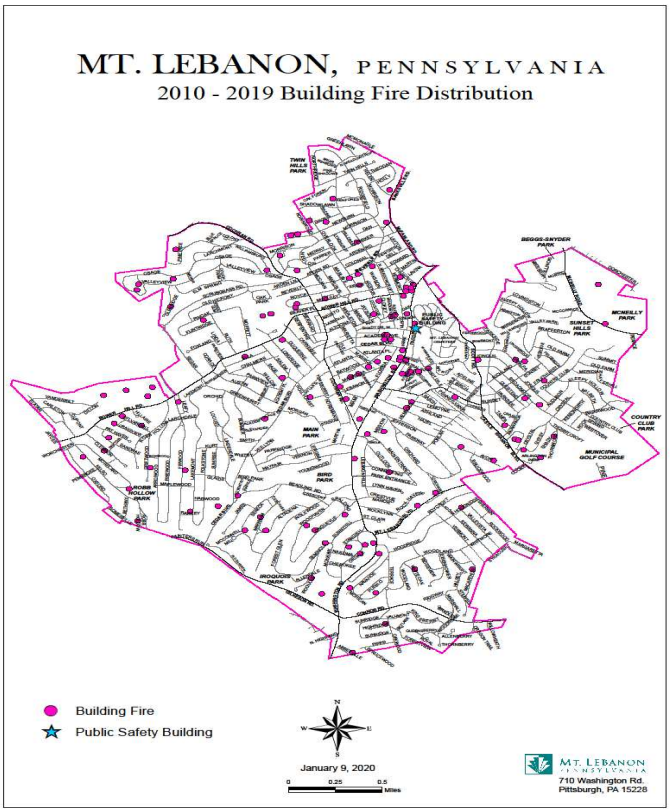


Figure 32: Structure Fire Locations, 2010 - 2019

The greatest percentage of structure fires (46%) occurred in the evening, between the hours of 5:00 PM and midnight. An additional 16% occurred between midnight and of 8:00 AM and 38% between 8:00 AM and 5:00 PM. (Figure 33)

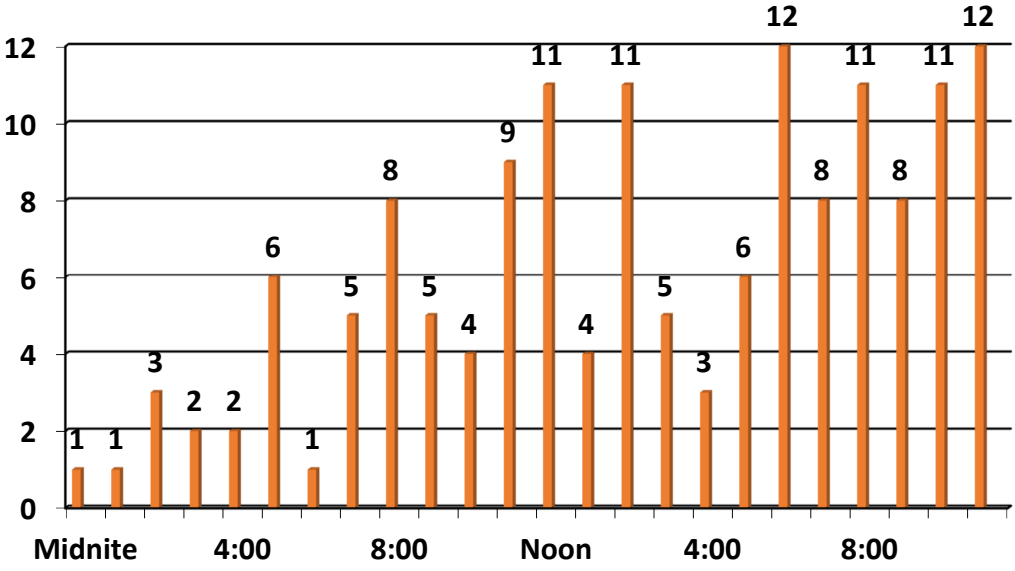


Figure 33: Structure Fires by Time of Day, 2010 – 2019

Sixty-six percent (66%) of building fires were classified as "Unintentional" and twenty-seven percent (27%) were due to a "Failure of Equipment." There were no arson-related building fires over the previous 10-year period. (Figure 34).

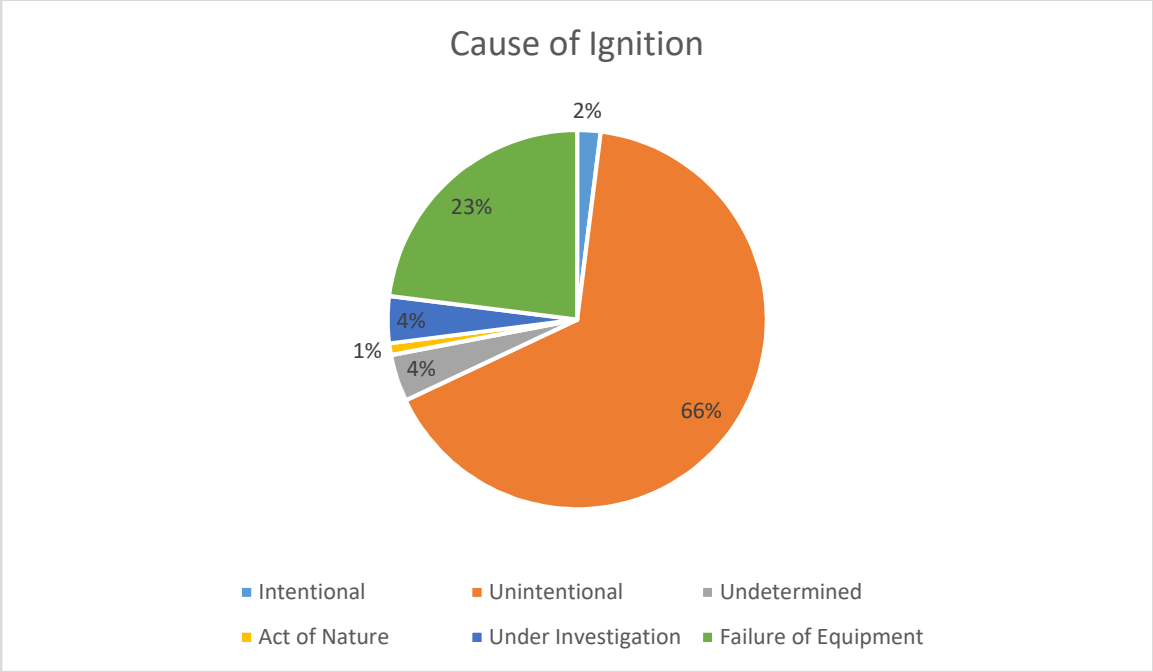


Figure 34: Cause of Ignition, Structure Fires, 2010 – 2019

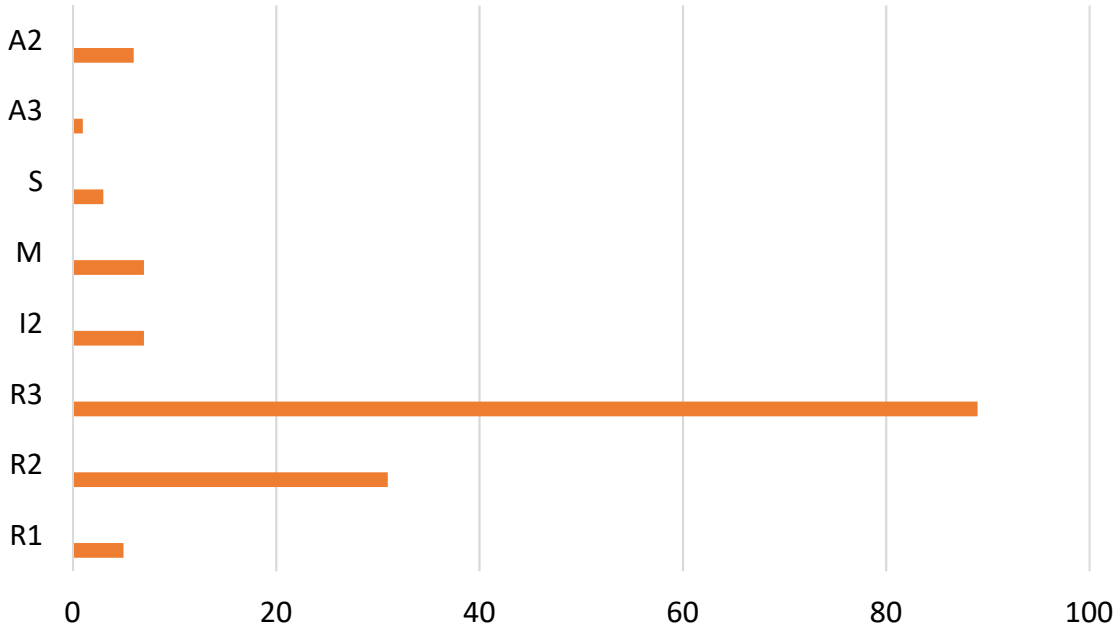


Figure 35: Fire Incidents by Property Use, 2010 – 2019

Table 19: Fire Loss & Property Saved, 2015 – 2019

	2015	2016	2017	2018	2019
Total Fire Loss	$778,560	$358,710	$184,410	$1,034,290	$322,750
Avg. per Capita	$23.50	$10.83	$5.57	$31.21	$9.74
Property Saved*	$18,688,440	$48,840,880	$33,899,250	$15,233,800	$46,821,000

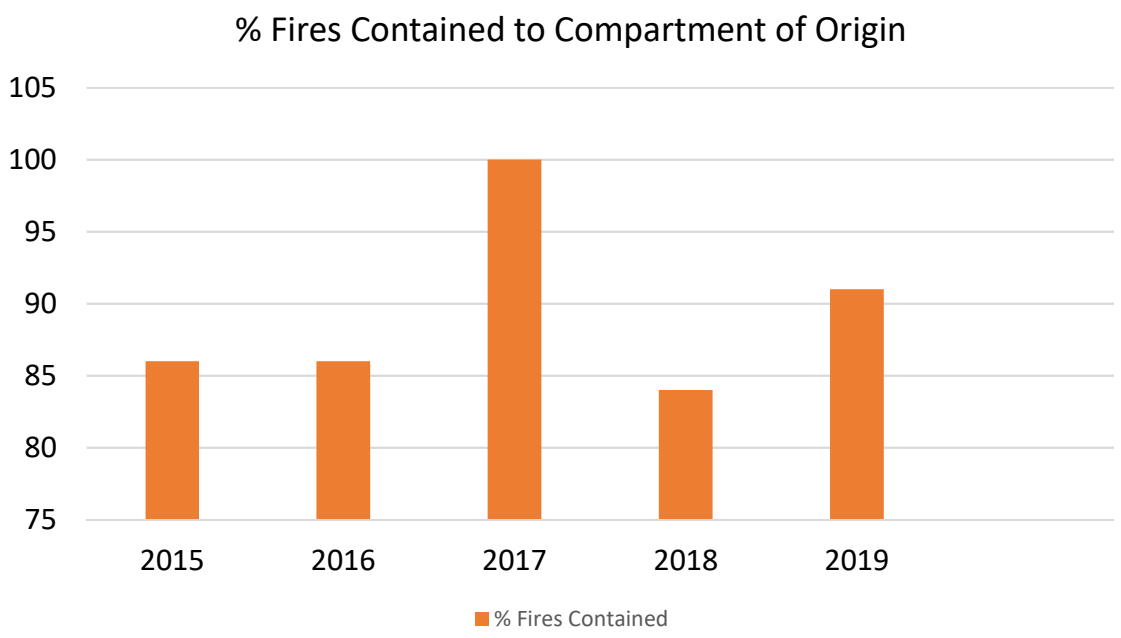


Figure 36: Percentage of Fires Contained to the Compartment of Origin

Table 20: Civilian & Firefighter Casualties, 2015 – 2019

	2015	2016	2017	2018	2019
Civilian Injuries	3	2	1	1	6
Civilian Fatalities	0	0	0	1	0
Firefighter Injuries	15	8	9	17	15
Firefighter Fatalities	0	0	0	0	0

The Department assesses the balance between fire suppression capabilities and fire risks on an annual basis, at a minimum, as response data is updated in preparation for publishing the Department's annual report and updating the Standards of Response Coverage. This assessment is also part of the Department's annual fire suppression program evaluation.

Non-Fire Risk Assessment

The non-fire emergency services provided by the Mt. Lebanon Fire Department include Emergency Medical Services (EMS), hazardous materials response (Haz Mat), and technical rescue. Risk assessment for non-fire hazards incorporate many of the same factors evaluated during the fire risk assessment, such as historical demand for these types of services, community characteristics, and demographics.

Table 21: Frequency of Non-Fire Risks by Geographic Planning Zone, 2015 - 2019

Zone	EMS	Haz Mat	Tech Rescue	Vehicle Accident	Other Hazard	Service	Good Intent
1A	39	49	3	36	45	120	148
1B	54	33	10	52	56	45	176
2A	77	42	4	27	39	77	148
2B	83	48	12	65	44	64	201
3A	42	32	5	36	42	70	139
3B	54	28	2	35	51	64	131
4A	92	44	3	46	76	127	204
4B	53	17	3	9	32	57	102
5A	29	30	7	20	42	67	114
5B	287	95	52	129	66	387	411

Emergency Medical Services - Medical emergencies have been classified as moderate risk, high probability, low consequence events, mainly due to the high population of residents 65 years of age and over and the seven nursing homes located within the Municipality. As a large number of Baby Boomers reach retirement age, the demands on the EMS system are likely to continue to increase, taxing the capabilities of the local EMS provider.

Table 22: EMS Incident Types, 2015 – 2019

EMS INCIDENT TYPE	TOTAL	YEARLY AVG.
Medical assist, assist EMS crew	303	56
Medical assist, QRS	465	93
EMS call, excluding accident with injury	34	7
EMS call, cancelled in route	347	69

Over the past several years, the department has assumed an increased role in providing emergency medical services. Primarily, the department responds as a quick response service on all high priority calls when the local EMS provider is unavailable for an immediate response, or as requested.

To increase the chances of survival from sudden cardiac arrest, the department operates a public access defibrillation program in several community buildings/ locations and participates in the Pulsepoint Program. In addition, MRTSA provides CPR/AED training to the public, all municipal employees, and all 10th grade students at Mt. Lebanon High School. Mt. Lebanon Police Officers are trained and equipped to use AEDs and administer Narcan.

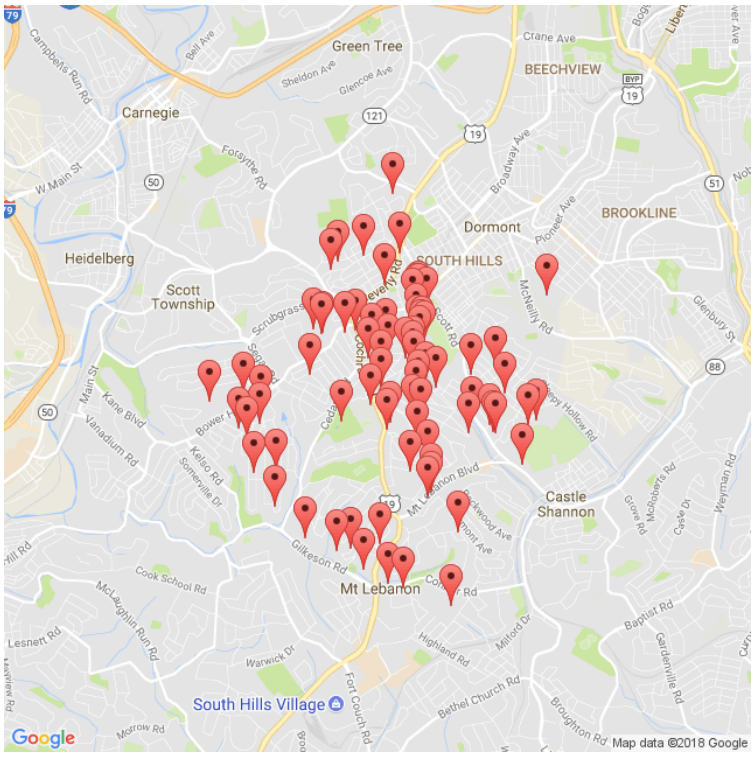


Figure 37: 2019 EMS First Responder & EMS Assist Call Locations

Hazardous Materials Release - The community is vulnerable to hazardous material incidents, but has had a low frequency of occurrence. Hazardous materials incidents are classified as moderate probability, moderate consequence hazards. Risk levels have been classified by the type of event. Hazardous materials incidents have been categorized as Tier 1, Tier 2, and Tier 3. The tiered incidents/responses are defined as follows:

- **Tier 1** - Tier 1 responses have been classified as low risk and include carbon monoxide alarm activations with no symptoms, natural gas leaks outside of residences, minor quantities of flammable or combustible liquids spilled outside a structure, investigations of possible chemical or gas odors, and other conditions that can be controlled by the on-duty crew. Apparatus generally responds in a non-emergency mode.

- **Tier 2** - Tier 2 responses have been classified as moderate risk and include carbon monoxide alarm activations with occupants with symptoms, natural gas leaks inside of residences, flammable or combustible liquids spilled inside a structure, large quantities of flammable or combustible liquids spilled outside a structure, and investigations of possible chemical or gas odors or other conditions that can be controlled by the on-duty crew. Apparatus may respond in either an emergency or non-emergency mode based on dispatch information.

- **Tier 3** - Tier 3 responses have been classified as high risk and include a spill, leak or condition that may adversely impact or threaten life, health, property, or the environment and where control of the incident requires Level B or greater personal protection and may also require an Allegheny County Hazardous Materials Team response.

The community includes US Truck 19, which is designated as a hazardous material bypass to get to Route 51 and avoid the tunnels leading into the City of Pittsburgh. There are very few facilities that use and store quantities of hazardous materials. The Department has prepared for these types of emergencies by training all career staff members to the Hazardous Materials Technician Level and through mutual aid agreements with the Allegheny County Hazardous Materials Team. The majority of hazardous materials incidents have historically involved fluids from vehicle accidents and natural gas leaks.

Table 23: Hazardous Materials Incident Types, 2015 – 2019

HAZ MAT INCNTS	TOTAL	YEARLY AVG.
Gasoline or other flammable liquid spill	52	10
Gas leak (natural gas or LPG)	260	52
Oil or other combustible liquid	17	3
Chemical / spill or leak	21	4
Carbon monoxide incident	61	12
Toxic / chemical hazard, refrigerant leak	3	.5
Biological hazard	3	.5

Technical Rescue - Technical rescue covers a wide range of incidents, which include vehicle extrication, confined space rescue, trench collapse, low/high angle rescue, water rescue, and building collapse. Technical rescue incidents have been classified as low probability, moderate consequence events. Risk has been categorized by type of technical rescue event:

- Low Risk: Elevator entrapment (non-injury), low-angle rescue.
- Moderate Risk: Traffic accident with entrapment, vehicle into a building, slow water rescue.
- High Risk: Confined space rescue, cave in or collapse with person trapped, rescue from an elevated position, swift water rescue, ice rescue.

While the potential exists for trench rescues, window washers stuck on the sides of buildings, confined space incidents, and water and ice rescues, the majority of the Department's technical rescue incidents have historically included low-angle rescues and the removal of occupants from stalled elevators. Over the previous 5-year period, the frequency of rescue-related incidents in Mt. Lebanon has included:

Table 24: Technical Rescue Incident Types, 2015-2019

TECH RESCUE INCIDENTS	*TOTAL*	YEARLY AVG.
Extrication, Other	7	1
Extrication from Vehicle	18	4
Extrication from Building	5	1
Removal from Stalled Elevator	60	12
Trench Rescue	0	0
Swift Water	14	3
Extrication from Machinery	6	1
High-Angle Rescue	2	< 1
Electrocution/ Trapped by Power Lines	2	< 1

The risk of water-related rescues is low; however, heavy rains and flooding provide the potential for both slow and swift water rescues. The water-related rescues documented above are generally from standing water in an intersection. Cedar Lake, located Geographic Planning Zone 5A, provides the potential for water and ice-related rescues year-round. The risk of a water-related incident at the lake is low as the lake is privately-owned by the adjacent property-owners who limit the lake's usage.

In the event of a drowning, or for assistance with water and ice-related rescues, both the City of Pittsburgh EMS River Rescue and the Peters Township Fire Departments can provide boats, divers and other resources. A response is expected to take approximately twenty (20) minutes.

In most cases, the removal of victims from stalled elevators is not classified as an emergency, but as inconvenience to the trapped occupants. Unless the trapped occupant is experiencing some type of medical emergency, responses to these types of incidents are generally non-emergency.

Other Hazards - Other hazards include electrical / wiring problems, heat from short circuits, overheated motors, breakdowns of light ballasts, power lines down, shorted electrical equipment, structures weakened by collapse, aircraft standby, and general cleanup of debris from vehicle accidents.

Section 5: Historical Perspective

A historical perspective—considering the Department's current distribution, concentration, reliability, comparability and baseline performance — is important to consider in helping the Department asses its efficiency and effectiveness. In order to set proper time response measures, it is important to fully understand the critical factor of time when addressing fire and emergency medical incidents

Stages of Fire Growth – Critical Factor of Time

All fires go through similar dynamic growth stages. The National Fire Protection Agency (NFPA) identifies three stages of fire development: the pre-flashover stage, flashover, and post-flashover stage. The stages of fire development are identified based upon their relation to flashover, the turning point in fire development.

Pre-flashover Stage. The initial stage in fire development is pre-flashover. This stage occurs immediately following ignition and is identified by its limited size with involvement of only one item or small area. The environment inside the room or compartment is not yet affected and there is relatively no threat to occupants. At this point, it is conceivable that a single person could extinguish the fire with a portable extinguisher. The key to this stage in the fire's development is that, there is little or no indication of fire outside the room or compartment.

As the fire begins to progress, room or compartment temperature increases and smoke accumulates. If automatic sprinklers are present, the system will activate when the temperature of the fire gases at the ceiling level are high enough to trigger the sprinkler system. The sprinkler system will control and possibly extinguish the fire. A fire in a room or compartment that is not protected by automatic sprinklers will be uncontrolled.

Flashover. Flashover is recognized as the transitional stage where fire conditions change dramatically. When flashover occurs, heat levels in lower areas of the room or compartment are significant enough to raise all combustible material to its ignition point, and the combustible materials become involved in fire. At this time a transition takes place into a fully developed fire; this transition usually takes place in less than a minute. During this stage in fire development, the space is untenable and there is no chance of survival. Flashover is the direct result of time and temperature, as fire grows exponentially, essentially doubling itself each minute while in the flashover stage. Flashover can occur in less than 10 minutes from the start of a pre-flashover stage.

Post-flashover Stage. As the fire reaches the fully developed phase it is commonly referred to as the post-flashover stage. During this stage, the fire is free burning and is only limited by fuel and oxygen availability. At this point the entire structure is now at risk. Temperatures during this stage can commonly reach 1500-1800 degrees Fahrenheit. As the fire consumes the fuel and/or the oxygen supply, it will deteriorate until extinguishment.

Without early arrival and suppression efforts, not only will the loss be potentially greater, but the apparatus, equipment, and number of personnel needed to handle the fire must also increase. The graphic below correlates the stage of the fire with resource and equipment needs.

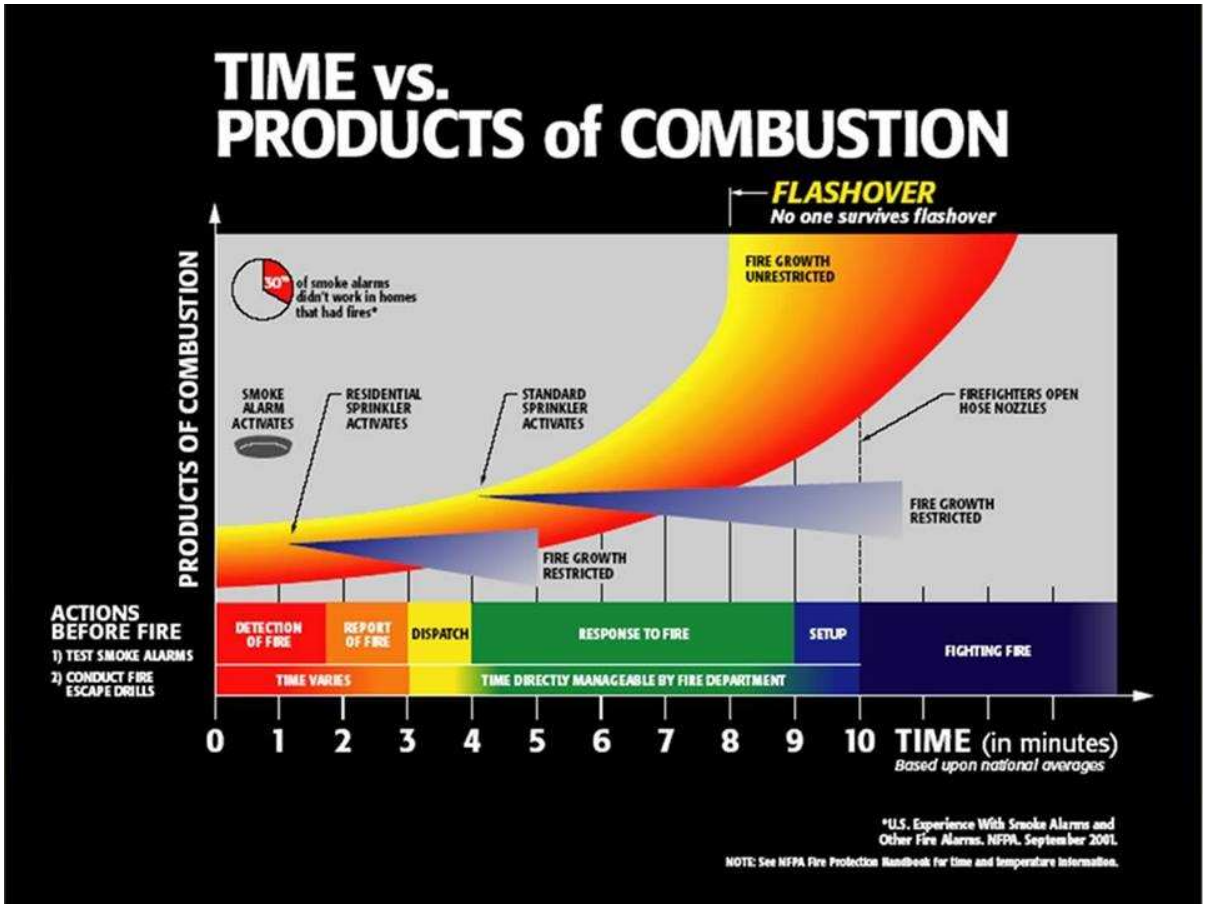


Figure 38: Time vs. Products of Combustion

As previously discussed, flashover is significant for two reasons:

1) No one can survive in a room that has a fire that has flashed over. Therefore, the survivability of occupants dramatically decreases after flashover.
2) Flashover increases the fire's rate of combustion, which adds significantly to resources and changes fire ground tactics.

The significance of flashover is further illustrated below in a comparison of critical factors between pre-flashover and post-flashover events.

Table 25: Critical Factors for Flashover

CRITICAL FACTORS FOR FLASHOVER	
Pre-flashover	**Post-flashover**
Fire limited to room of origin	Fire rapidly spreads beyond the room of origin
Fire requires less and smaller attack lines (usually one hand line) to control	Fire requires multiple and larger attack lines to control
Search and rescue unhampered	Search and rescue becomes greatly hampered
Requires less overall resources	Requires additional resources
Initial responding units can handle	Requires additional units beyond the initial response

The department's primary objective is to deliver an adequate number of personnel and resources to the incident as rapidly as possible, in the pre-flashover stage, so as to significantly decrease or eliminate the possibility of a flashover.

EMS Response – Critical Factor of Time

The Department provides quick response emergency medical services for E0 and E1 priority medical calls when the primary EMS provider is unavailable, delayed, or requests assistance. In cases of cardiac arrest, stroke, trauma, and pediatric emergencies, it is essential for EMS providers to respond in a timely fashion, assess the patient(s), and begin providing treatment until an Advanced Life Service (ALS) provider can assume patient care. Most medical emergencies require multiple personnel to perform the various tasks associated with patient care. A minimum of two emergency medical technicians (EMTs) respond to a medical emergency to provide assistance.

Similar to fire flashover, the Department uses a critical time component of four to six minutes before brain death occurs in a cardiac arrest patient. Brain damage is usually irreversible after ten minutes without oxygen. Early defibrillation is a vital form of intervention. When cardiac arrest occurs, the heart starts to beat chaotically (fibrillation) and does not circulate blood through the body. For every minute without defibrillation, the odds of survival drop seven to ten percent. A sudden cardiac arrest victim who is not defibrillated within ten minutes has virtually no chance of survival. The shortest possible response time creates the highest probability of resuscitation.

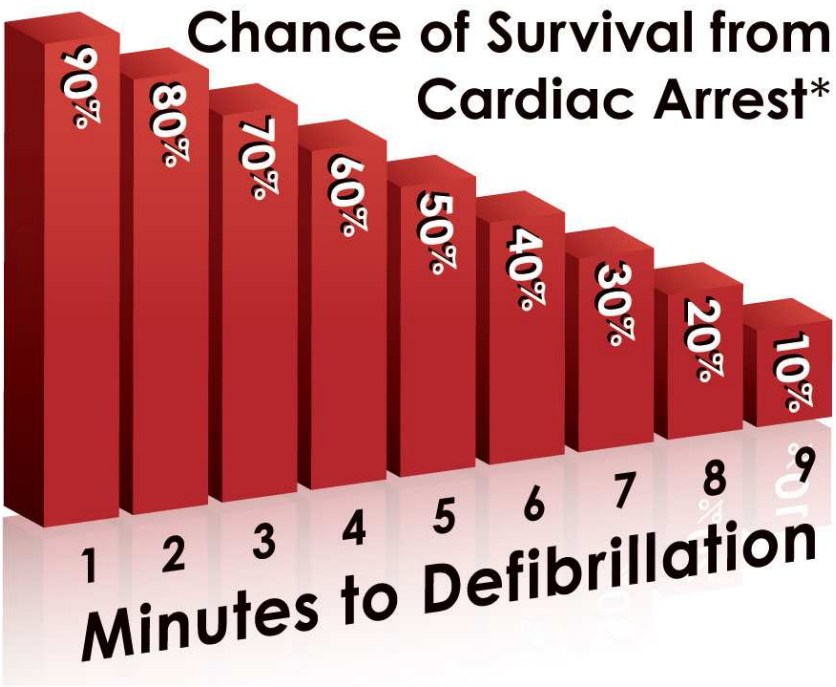


Figure 39: Minutes to Defibrillation vs. Survival Rate

Rapid response times are not the only factor in providing rapid defibrillation. Sometimes there are delays in accessing a patient located in a high rise building, a condominium complex, shopping center, or other occupancy that has a significant walking distance to the patient's location. To address this limitation, the Mt. Lebanon Fire Department provides operates a Public Access Defibrillation program in several community buildings and locations.

Response Time

The total response time clock for fire department staff begins when a member of the public calls 911 to report the fire or emergency medical incident and ends when the first fire apparatus arrives at the scene. The National Fire Protection Association refers to these time points as a "Cascade of Events."

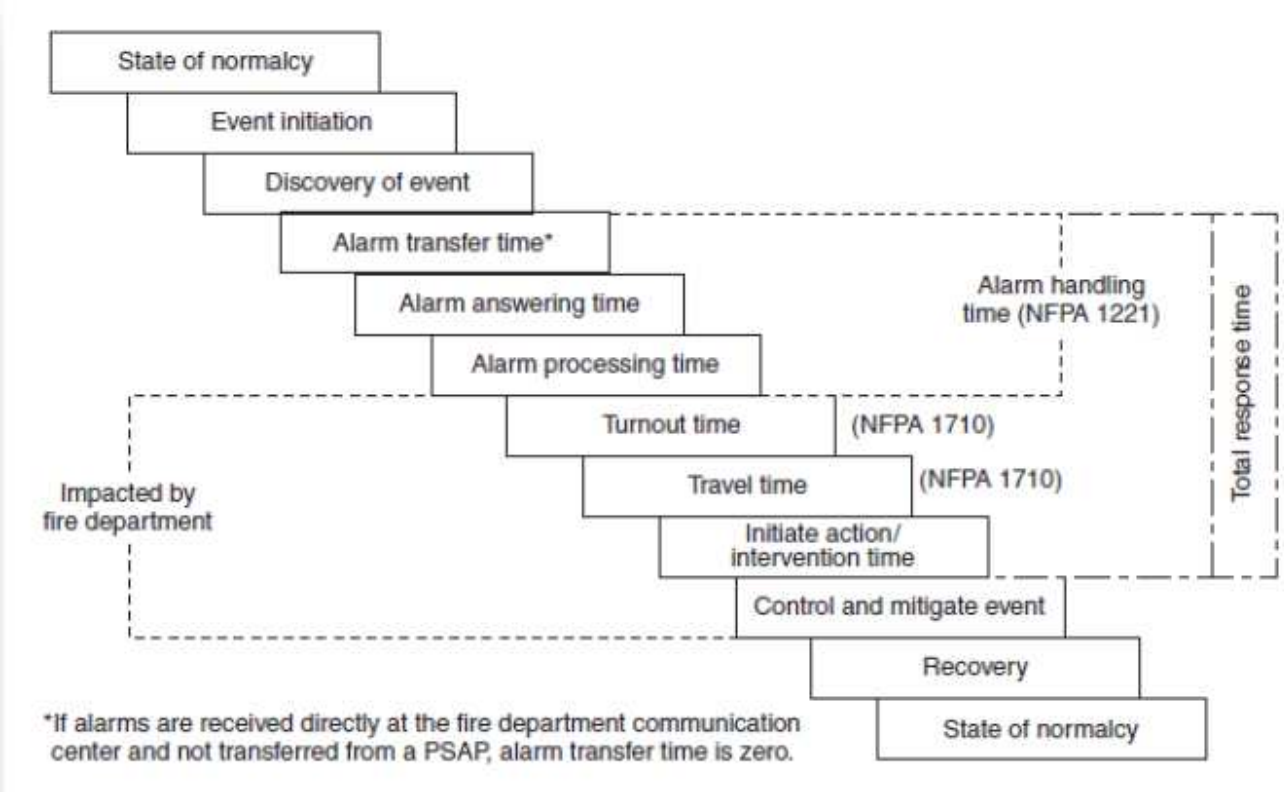


Figure 40: Cascade of Events

When a fire service agency considers effective response options, the measurement of time itself must be defined and understood. The Commission on Fire Accreditation International, Inc., (CFAI) has provided the following standardized definitions of response time elements:

- **Detection** – the point at which a human being or technological device (i.e., smoke detector, infrared heat detector, etc.) becomes aware that conditions exist requiring activation of the emergency response system. This is considered the point of awareness.

- **Notification** – the point at which an alarm is received by the public safety answering point (PSAP). This transmittal may take the form of electronic or mechanical notification received and answered by the PSAP.

- **Call processing interval** – the interval between the first ring of the 9-1-1 telephone at the dispatch center and the time the computer-aided dispatch (CAD) operator activates station and/or company alerting devices.

- **Dispatch time** – the time when the dispatcher, having selected appropriate units for response, initiates the notification of response units.

- **Turnout time** – The interval between the activation of the station and/or company alerting devices and the time when the responding crew notifies dispatch by voice that the company is responding. During turnout time, crews cease other activities, don appropriate protective clothing and/or equipment, determine the location of the call, and board and start the fire apparatus. It is expected that the unit will go in service when personnel are aboard the apparatus and the apparatus is beginning to roll toward the call.

- **Travel time** – begins at the termination of the turnout time and ends when the responding unit notifies the dispatcher that it has arrived on scene.

- **On-scene Time** – the point at which the responding unit arrives on scene.

- **Set-up Time** – the point at which operations to mitigate the event begins. This numeric figure will vary. Set-up time is a multidimensional variable that corresponds with the location of the emergency and/or how complex or severe it is.

Based on NFPA 1710, the following times are be used in defining benchmark and baseline norms:

Response Time –

A.	Alarm Handling	=	60-second / 90% benchmark
			90-second / 90% baseline
B.	Turnout Time	=	80-second / 90% benchmark
			90-second / 90% baseline
C.	Travel Time (Urban)	=	4 minutes / 90% benchmark
			5 minutes and 12 seconds / 90% baseline
	Total Response Time	=	A + B + C

Distribution

CFAI defines *distribution* as the station and resource locations needed to minimize and terminate emergencies. Effective distribution assures a sufficiently rapid first due response deployment. Distribution is measured by the percent of the jurisdiction covered by first due units within adopted public policy time frames. Station and resource locations play a decisive role in travel time and in essence, performance outcomes. There is one fire station within the community serving 10 Geographic Planning Zones. The Department's station location and apparatus are as follows:

All Mt. Lebanon Fire Department resources are deployed from the single fire station located at 555 Washington Road (Figure 41):

Figure 41: Mt. Lebanon Fire Station Location

Mt. Lebanon Public Safety Building located at 555 Washington Road

The department carries out its mission utilizing the following apparatus:

- Engine 1: 2012 Spartan / Precision 1,500 GPM Pumper
- Engine 2: 2002 Spartan / Precision 1,500 GPM Pumper
- Engine 3: 2002 Spartan / Precision 1,500 GPM Pumper
- Truck 198: 2011 Smeal Rear-Mount Aerial/Quint
- Rescue 198: 2008 Spartan / Precision Heavy Rescue
- Command Vehicle 198: 2006 Chevy / Dodgen Mobile Command Post
- Chief 198: 2020 Ford Interceptor
- Asst. Chief: 2013 Chevy Tahoe
- Squad 1: 2007 Ford Explorer
- Squad 2: 2015 Ford Pickup
- Squad 3: 2015 Chevy Tahoe
- Squad 4: 2008 Ford Expedition
- Squad 5: 2014 Ford Explorer

According to the Insurance Services Office (ISO), fire stations should be located in a city so that each first alarm engine company has a response district that ends 1.5 road miles from the fire station and a first alarm ladder company has a response district that ends 2.5 road miles from the fire station. The Municipality contains 106.72 road miles within 6.04 square miles. The number of road miles within the 1.5-mile travel distance for first alarm engine company response for Mt. Lebanon is 65.12 road miles, approximately 61% of the Municipality (Figure 42).

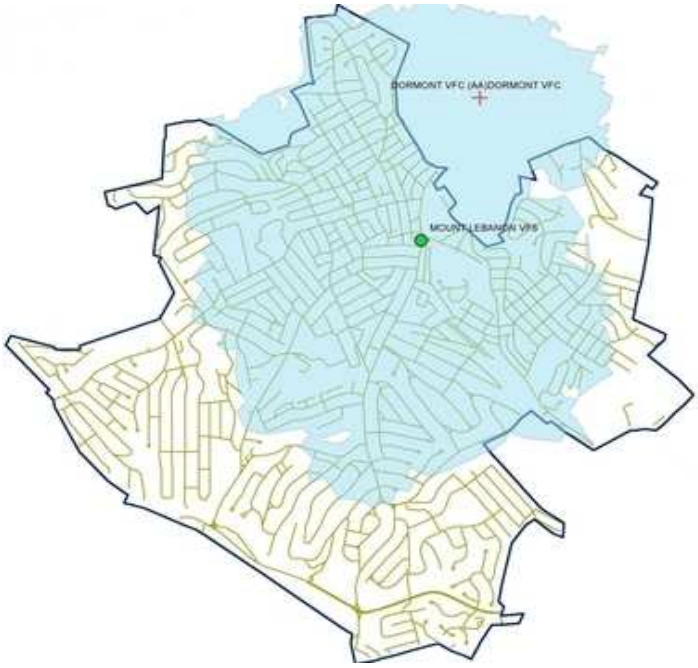


Figure 42: Engine Company Distribution for Mt. Lebanon

The following Table shows the percentage of the road miles, per Response Zone, within the 1.5 road mile performance objective for engine company distribution.

Table 26: Percentage of Engine Company, 1.5 Mile Distribution, per Planning Zone

Response Zone	Percentage of Area Covered
1A	100%
1B	71%
2A	0%
2B	32%
3A	0%
3B	94%
4A	93%
4B	61%
5A	69%
5B	100%

The number of road miles within the 2.5 road mile travel distance for first alarm ladder company response for Mt. Lebanon is 103.18 road miles, approximately 97% of the Municipality (Figure 43).

Figure 43: Mt. Lebanon Ladder Company Distribution

Areas outside of ISO performance objectives for first alarm ladder company response from the Mt. Lebanon Public Safety Building include 2% in response Zone 2A and 1% in Response Zone 3A.

Table 27: Percentage of Ladder Company, 2.5 Mile Distribution, per Planning Zone

Response Zone	Percentage of Area Covered
1A	100%
1B	100%
2A	98%
2B	100%
3A	99%
3B	100%
4A	100%
4B	100%
5A	100%
5B	100%

Additional road miles that are beyond Mt. Lebanon's 1.5 road mile engine company distribution, but within a 1.5 road mile engine company distribution of automatic aid companies is 17.99 road miles. Therefore, there are a total of 83.11 road miles, including automatic aid, within the 1.5 mile engine company distribution requirement.

Concentration

CFAI defines *concentration* as the spacing of multiple resources (close enough together) so that an initial "effective response force" can be assembled on scene within adopted public policy time frames. An initial "effective response force" is that which most likely will stop the escalation of the emergency for each risk type. An initial "effective response force" is not necessarily the total number of units or personnel needed if the emergency escalated to the maximum potential.

The fire service agency has derived its *concentration* configuration from:

- Risk assessment
- Call volume
- Population
- Critical task assignments

The department's initial "effective response force" is accomplished through a combination of on-duty personnel, off-duty personnel, volunteers, and automatic and/or mutual aid agreements with surrounding communities.

Due to the fact that Mt. Lebanon is served by a single fire station and mutual aid companies are all volunteer, 100% of calls per first-due company are handled by the Mt. Lebanon Fire Department from the Mt. Lebanon Public Safety Building. Automatic and mutual aid companies; however, are assigned as automatic aid for those areas in Mt. Lebanon that are outside of Mt. Lebanon's 1.5-mile engine company distribution, but within the 1.5-mile engine company distribution of a neighboring department, based on geographic planning zone.

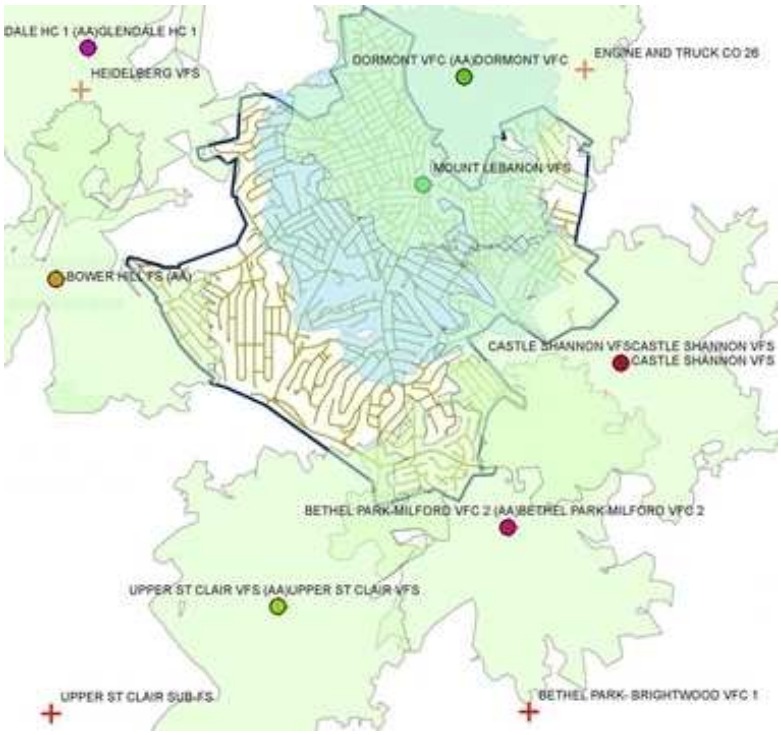


Figure 44: Automatic / Mutual Aid Engine Company Concentration

Bethel Park Fire Department covers 9.67 road miles within 1.5 miles of their Milford Station, Castle Shannon Fire Department covers 1.90 miles, Dormont Fire Department covers 1.59 miles, Bower Hill Fire Department covers 3.57 miles, and Upper St. Clair Fire Department covers 1.27 miles of Mt. Lebanon's first alarm engine company response area not covered by Mt. Lebanon from its 555 Washington Road Location. Twenty-two percent of the Municipality (23.61 road miles) is not within 1.5 miles of a first alarm engine company.

The fact remains; however, that all of the automatic and mutual aid companies, with the exception of Dormont Fire Department's Apparatus Operator and a daylight fire chief, are all-volunteer departments that will have a slower response time than a first-due engine company responding from the Mt. Lebanon Public Safety Building.

Reliability

Response reliability is defined as the probability that the required amount of staffing and apparatus will be available when a call for service is received. If every apparatus were available every time, then the Department's response reliability would be 100 percent. The Department can provide an effective response force to a multitude of emergency incidents. Increased demands for service with limited or diminishing resources will eventually erode this ability. The ability to meet the demands for service can be critically curtailed during times of multiple requests for service, or queuing. As the number of emergency calls per day increases, or resources diminish, the probability that needed apparatus will be busy when requested increases. On these occasions, the Department's response reliability will decrease.

Over the previous five-year period, there were 697 occurrences of overlapping calls, a frequency of 8%. A high frequency of overlapping calls occurs during weather-related events, which may include 20 to 30 calls over a short period of time.

Table 28: Percentage of Overlapping Incidents, 2015 - 2019

Year	2015	2016	2017	2018	2019
Incidents	116	119	136	167	159
% Overlap	7%	8%	10%	9%	8%

There were seven (7) occurrences over the previous five-year period where no Mt. Lebanon Fire Department units were available and a mutual aid company was relied upon as the sole responding unit. This correlates to a response reliability of greater than 99.99%. There were two (2) occurrences in 2019.

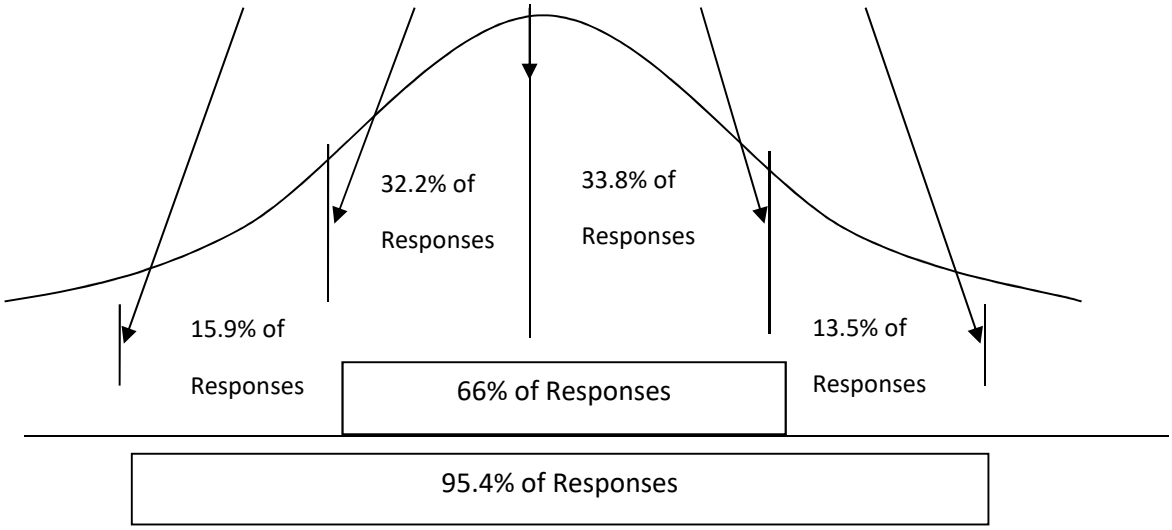
Stop-Loss Point

Stop-Loss point utilizes standard deviation at either the second or third standard deviation above the mean to prevent an organization from "writing off" calls that fall above the target fractile. Stop-Loss Points provide additional quantification for a level of accountability to the calls outside the standards.

Graphically, one standard deviation from the average (mean) in both directions encompasses 68% of the total calls in this group. Two standard deviations encompass 95% of the total calls (Table 29):

Table 29: Stop-Loss-Points by Incident Type, 2011 -2015

Incident Type	-2 Std Dev	-1 Std Dev	Average	1 Std Dev	2 Std Dev
1	00:38.7	02:18.6	03:58.5	05:38.4	07:18.3
2	00:18.1	02:12.2	04:06.3	06:00.4	07:54.6
3	00:02.0	02:09.4	04:16.7	06:24.1	08:31.4
4	00:33.5	02:36.7	04:39.8	06:43.0	08:46.1
5	NA	01:54.1	04:01.5	06:08.9	08:16.3
6	00:23.7	02:24.1	04:24.4	06:24.8	08:25.2
7	00:09.2	02:04.6	04:00.0	05:55.4	07:50.8
Grand Total	00:12.5	02:10.5	04:08.5	06:06.5	08:04.4



Peak Load

Over the previous 5-year period, the busiest month of the year was June; the slowest was March (Figure 45). The busiest day of the week was Wednesday; the slowest was Sunday (Figure 46). The busiest time of day was between the hours of 2:00 PM and 3:00 PM; the slowest was between the hours of 4:00 AM and 5:00 AM (Figure 47):

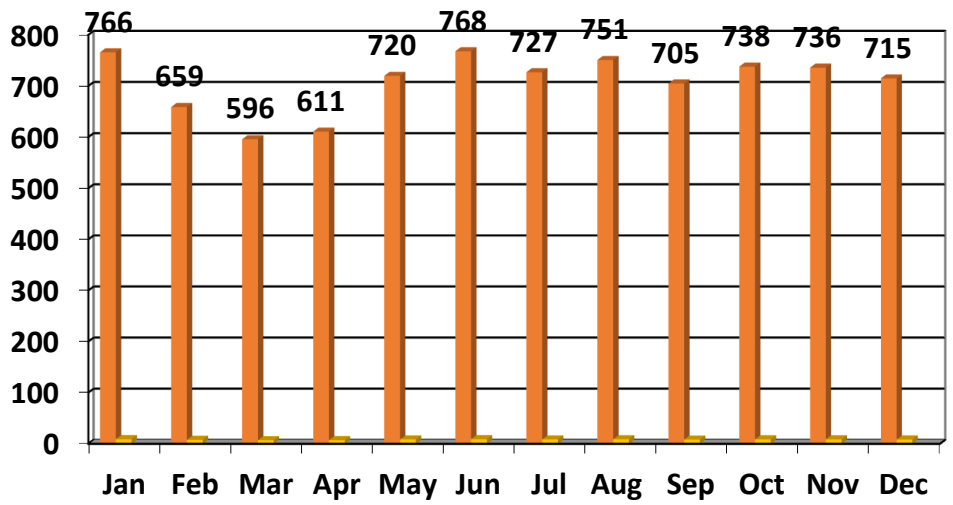


Figure 45: Incidents by Month of Year, 2015 – 2019

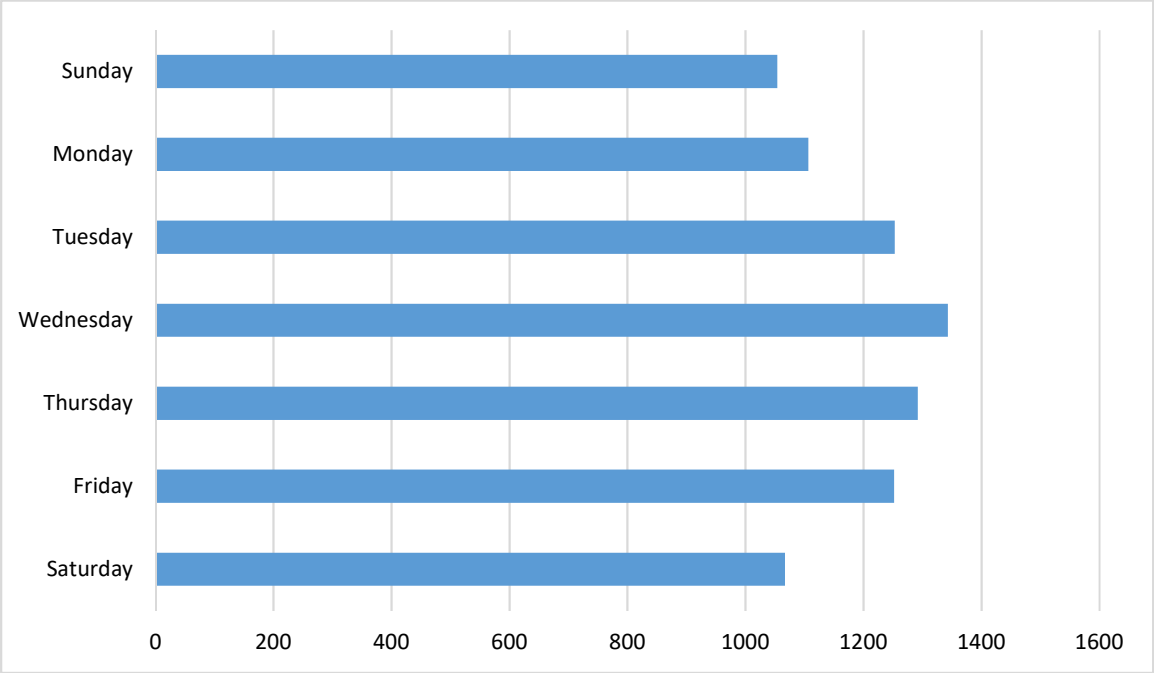


Figure 46: Incidents by Day of Week, 2015-2019

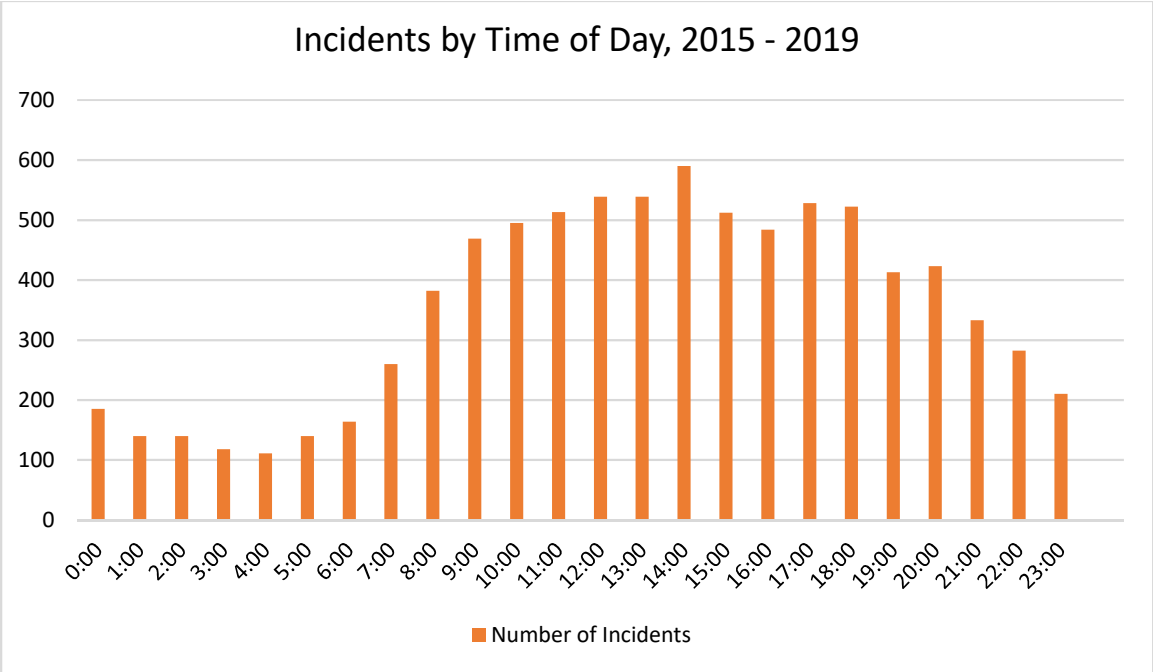


Figure 47: Incidents by Time of Day, 2015 - 2019

Section 6: On Scene Operations & Critical Tasks

On scene operations, critical tasking and the assembly of an effective response force are the key elements of the department's standards of response coverage. Ultimately, these factors determine staffing levels, resource types, resource numbers, and expected duties performed at incidents. The ability to effectively and efficiently perform these tasks has a direct outcome on the overall success of the incident.

Critical Tasking and Effective Response Force for Fire Suppression

Single family dwelling fires are considered the typical type of fire the Department will most likely encounter. With this thought process in mind, the fire service agency has outlined task assignments critical to the mitigation of this fire type. To provide the reader a better understanding of the critical tasking concept, the following task descriptions have been provided for a fire in a "typical", single-family residential dwelling:

- Fire Attack Line: A minimum of two firefighters will advance an 1 ¾ inch hose that produces 120-200 gallons per minute (gpm), or a minimum of three firefighters will advance a 2 ½ inch hose that produces 200-250 gpm. The size of the attack line selected is dependent upon the following:

  1.) Type of structure
  2.) Distance to the seat of the fire
  3.) Stage of the fire upon arrival

Each of the Department's engines carries attack lines that are either pre-connected to the apparatus, folded on the hose bed, or in a special pack for carrying into high-rise buildings. Pre-connected hose lines enable the Department to expediently place hoses into service but are limited to operations within 100-200 feet of the engine. Operations beyond these distances require the use of surplus lines from the engine's hose bed.

- Search and Rescue: A minimum of two firefighters will search for living victims and remove them from danger as the fire attack crew moves between the victims and the fire. Operations that take place in multi-story buildings or in structures with people who are not capable of self-preservation require additional crews.

- Ventilation: A minimum of two firefighters may be required to create a horizontal or vertical opening in the structure in coordination with the advancement of the fire attack line. Ventilation removes superheated gases and obscuring smoke, improves survivability of victims, prevents flashover, and allows the attack crew to locate the seat of the fire. In addition, ventilation provides the fire attack crew an exit point that they can direct the fire out and keep it away from endangered people and/or unburned property. Operations that take place in multi-story buildings or that need vertical ventilation require additional crews.

- Backup Line: A minimum of two firefighters will advance either a 1 ¾ inch hose line or a 2 ½ inch hose line to protect the fire attack crew in the event fire conditions deteriorate or a problem develops with the attack line.

- Rapid Intervention Team (RIT): Initially, a minimum of two firefighters, equipped with self-contained breathing apparatus (SCBA) and rescue tools, will stand by outside the building in the event something goes wrong inside the structure. If a firefighter becomes lost or trapped, sustains a catastrophic failure of his equipment, or calls a MAYDAY, the sole purpose of this crew is to affect a rescue of the personnel in trouble. This particular requirement is an Occupational Safety and Health Administration (OSHA) rule.

- Exposure Line: Two or more firefighters will advance a fire attack line or master stream appliance. Exposure lines are used above the fire inside a multi-story building to prevent fire expansion or used externally to protect nearby structures from igniting from radiant heat.

- Pump Operator: One firefighter will manage pump pressures to ensure that personnel operating hose lines have sufficient water pressure and volume. In addition, this individual completes the hose hookups to the correct pump discharges and completes the water supply hookup to the correct intake on the pump.

- Water Supply: One or more firefighters will secure a dependable water source utilizing the nearest functioning hydrant(s). It is imperative that a water supply is delivered to the engine before its onboard water tank runs dry.

- Command: One officer assigned to remain outside the structure to coordinate the attack, evaluate results and redirect the attack, and monitor conditions that may jeopardize crew safety.

To effectively accomplish critical tasks, identified numbers of personnel and equipment must be assembled on scene, within a reasonable time frame, to most likely stop the escalation of an emergency for a given risk type. This is a rudimentary definition of an effective response force.

Emergency incidents are dynamic. The number of personnel and the amount of equipment required to accomplish critical tasks is variable. When considering critical tasks, the agency has taken into account that maximum potential staffing is dependent upon the following changeable factors:

- Delayed response
- Occupant load
- Occupant physical condition
- Equipment failures
- Area of fire involvement
- Injuries
- Built-in fire protection
- Construction type

The following tables illustrate the critical tasks and the number of personnel typically required to carry out those tasks (effective response force) for fire suppression in single-family and commercial / high-rise occupancies:

Table 30: Critical Tasks & Effective Response Force for Fires in Moderate Risk Occupancies including detached single-family homes, multifamily dwellings with less than 25 units, and commercial buildings that do not fall into the special or high-risk categories.

Critical Tasks	Personnel Required
Command	1
Fire Attack Line	2
Search and Rescue	2
Ground Ladders/Ventilation	2
Backup Line	2
Rapid Intervention Team (RIT)	4
Support Members	2
Pump Operator	1
Water Supply	1
TOTAL	**16**

Table 31: Critical Tasks & Effective Response Force for Fires in High Risk Occupancies including strip shopping malls, infrastructure facilities (city halls, fire and police stations, schools), group homes, smaller apartment buildings, churches, day care facilities, and occupancies with heavy or hazardous fire loads or building construction features that pose a risk to fire fighters.

Critical Tasks	Personnel Required
Command	1
Command Aide	1
Water Supply	2
Fire Suppression	9
Search and Rescue	4
Aerial Operator	2
Ground Ladders	4
Rapid Intervention Team	4
TOTAL	**27**

Table 32: Critical Tasks & Effective Response Force for Fires in Special Risk Occupancies including hospitals, nursing homes, malls, and high-rise buildings with large senior populations.

Critical Tasks	Personnel Required
Command	1
Command Aide	1
Water Supply	1
Fire Pump	1
Lobby Control	1
Fire Attack Line	4
Recon	4
Evacuation	4
Backup Line / Line Above	4
Ventilation	3
Search & Rescue	4
Suppression Division Officer	1
Upper Branch Division Officer	1
Lower Branch Division Officer	1
Safety Officer	1
Rapid Intervention Team	4
Equipment Logistics	2
TOTAL	**38**

To accomplish these tasks, the Department utilizes a combination of on-duty personnel, off-duty personnel, volunteers, and automatic and mutual aid, based upon the size and nature of the incident. A copy of the Department's Alarm Assignments are included in Appendix B.

Critical Tasking and Effective Response Force for Hazardous Materials / WMD Incidents

The same concept continues with hazardous materials incidents. Hazardous materials incidents must be handled in an order that limits damage to the environment and/or property and prevents injury and/or death to humans. All of the Department's full-time personnel are trained to the Haz-Mat Technician Level and all of the volunteer personnel are trained to the Haz-Mat Operations Level. In the event of a hazardous materials incident, the agency has prepared its personnel to initiate the following critical tasks:

- Identify the material or substance.
- Control or confine the leak, spill, or release.
- Establish perimeters for both operations and evacuation.
- Assist with evacuations.
- Conduct decontamination.
- Perform rescue of viable victims and/or administer emergency medical care.
- Suppress related fires.

Critical tasking is also crucial in the management of incidents involving Weapons of Mass Destruction (WMD). The likelihood of these incidents occurring has increasingly become an everyday concern since the tragic events of 9/11/01. These incidents can involve a biological, chemical, or radiological agent that is deliberately released. As a result, the agency has outlined the following critical tasks:

- Establish perimeter in addition to the hot and cold zones.
- Assist with evacuations.
- Conduct decontamination.
- Suppress related fires.
- Perform rescue of viable victims and/or administer emergency medical care.

Again, the complexity and size of the incident determines whether a dedicated hazardous materials team is needed to mitigate an incident. As mentioned previously, the agency utilizes the Allegheny County Hazardous Materials Team for incidents of this nature.

The following table illustrates the critical tasks and the number of personnel typically required to carry out initial tasks (effective response force) for a Level "B" Hazardous Materials / WMD Incident:

Table 33: Initial Critical Tasks & Effective Response Force for Level "B" Hazardous Materials / WMD Incidents

Critical Tasks	Personnel Required
Command	1
Safety	1
Research	2
Dress Out	2
Entry Team	2
Backup Team	2
Decon	2
TOTAL	**12**

The complexity and size of the incident dictates whether additional personnel or a dedicated hazardous materials team is needed to mitigate an incident. When an incident exceeds these parameters, the agency utilizes the Allegheny County Hazardous Materials Team.

Critical Tasking for Technical Rescue Incidents

Technical rescue encompasses the disciplines of confined space, trench, rope, collapse and water and ice rescue. Critical tasking is just as applicable to technical rescue as the previously described incident types. However, the diversity of technical rescue incident types, once again, prohibits outlining a solitary critical task assignment for each specific type of incident. Department personnel have a wide range of knowledge, skills, and abilities as related to technical rescue. The agency is affiliated with the South Hills Area Council of Governments (SHACOG) Tactical Rescue Team. The Department has mutual aid agreements with the Peters Township and Pleasant Hills Fire Companies and Pittsburgh EMS. Department personnel maintain positions on the team.

The following tables illustrate the critical tasks and the number of personnel typically required to carry out those tasks (effective response force) for different types of technical rescue incidents:

Table 34: Critical Tasks for Basic Vehicle Entrapments

Critical Tasks	Personnel Required
Command	1
Stabilization	1
Patient Access / Care	1
Hand Tools	1
Power Tools	1
Fire Protection	1
TOTAL	**6**

Table 35: Critical Tasks for Confined Space Rescue

Critical Tasks	Personnel Required
Command	1
Safety	1
Rigging	3
Entry / Attendant	3
Ventilation	1
Air Monitoring	1
Backup / Attendant	3
Air Supply	1
TOTAL	**14**

Table 36: Critical Tasks for Low/High Angle Rescue

Critical Tasks	Personnel Required
Command	1
Safety	1
Rigging / Haul System	6
Belay System	1
Patient Care / Stokes	2
Hazard Control	1
TOTAL	**12**

Table 37: Critical Tasks for Water / Ice Rescue

Critical Tasks	Personnel Required
Command	1
Safety	1
Rope or Boat System	4
Upstream Spotter	1
Rescue Team	4
Debris Removal	1
Patient Packaging	2
Hazard Control	1
TOTAL	**15**

Table 38: Critical Tasks for Trench Rescue

Critical Tasks	Personnel Required
Command	1
Safety	1
Shoring	2
Cutting Station	1
Rigging	2
Air Monitoring	1
Entry Team	2
Water Removal	1
Hazard Control	1
Ventilation	1
TOTAL	**13**

Table 39: Critical Tasks for Elevator Entrapment

Critical Tasks	Personnel Required
Command	1
Patient Access	1
Patient Communications	1
Tools	1
Lock-out/Tag-out	1
Safety	1
TOTAL	**6**

Table 40: Critical Tasks for Industrial Entrapment

Critical Tasks	Personnel Required
Command	1
Stabilization	1
Patient Access / Care	1
Hand Tools	1
Power Tools	1
Lock-out / Tag-out 1	1
Fire Protection	1
Safety	1
TOTAL	**8**

The Department uses a standardized approach to incident management, with all members receiving National Incident Management Systems (NIMS) training. Standard Operating Guidelines have been developed to address both fire and non-fire emergencies. The effectiveness of all on-scene operations and critical tasking is evaluated annually be operational area.

Section 7: Performance Objectives & Reports

Benchmark and Baseline Performance Objectives

Structure Fires

The department's **benchmark** service level objectives for structure fires are as follows:

The Mt. Lebanon Fire Department's first unit benchmark is to respond to all suppression events in 6 minutes and 50 seconds or less, total response time, 90% of the time. The first-due unit shall be staffed with a minimum of three (3) firefighters and be capable of carrying 500 gallons of water and a 1,500 gpm pumping capacity, establishing and entry team and advancing the first line for primary search and fire control within one minute of arrival with four (4) firefighters 90% of the time.

The Department's moderate risk effective response force (ERF) assembly benchmark is to provide an effective response force (ERF) of fifteen (15) firefighters in 10 minutes and 50 seconds or less total response time, 90% of the time. The ERF shall be capable of establishing command, establishing an uninterrupted water supply, advancing an attack and backup line for fire control, forcible entry, utility control, victim search and rescue and ventilation.

The Department's high-risk ERF assembly benchmark is to provide an effective response force (ERF) of thirty (30) firefighters in 14 minutes and 50 seconds or less total response time, 90% of the time. The ERF shall be capable of establishing command; establishing two uninterrupted water supplies; operating three (3) 300 GPM lines for fire suppression; placing ground ladders, victim search, rescue and evacuation; and ventilation.

The Department's special risk ERF assembly benchmark is to provide an effective response force (ERF) of thirty-eight firefighters (38) in 18 minutes and 50 seconds or less total response time, 90% of the time. The ERF shall be capable of establishing command, safety, accountability, lobby control, staging and operations; establishing an uninterrupted water supply; advancing an attack, backup line, and exposure line for fire control; aerial operations; utility control, victim search, rescue and evacuation; and ventilation.

The department's **baseline** fire suppression statements reflect actual performance of years 2015-2019. The department does rely on automatic and mutual aid support from outside agencies to complement its effective response force.

For 90% of all fires, the Department met its 3-person staffing benchmark 93% of the time, with a total response time for the first due unit of 6 minutes and 36 seconds. The first due unit for all risk levels was capable of providing 500 gallons of water and 1,500 gpm pump capacity 100% of the time, and had the capability to initiate attack with 4 personnel within 1 minute of arrival 94% of the time. These operations were done in accordance with departmental standard operating guidelines while providing for the safety or responders and the general public.

For 90% of all moderate risk structure fires, the total response time for the assembly of an effective response force (ERF), staffed with a minimum of 16 firefighters, was 12 minutes and 47 seconds. The ERF was capable of establishing command, establishing an uninterrupted water supply, advancing an attack and backup line for fire control, forcible entry, utility control, victim search and rescue and ventilation.

For the years 2015-2019, there were no fires in high or special risk occupancies requiring the assembly of an effective response (ERF) of a minimum of 27 and 38 firefighters, respectively.

Emergency Medical

The department's **benchmark** service level objectives for first responder calls is as follows:

The Department's 1st unit benchmark is to respond to all emergency medical incidents in 6 minutes or less, total response time, 90% of the time. The first due unit shall be staffed with a minimum of two emergency medical technicians and be capable of providing early defibrillation and basic life support until advanced life support arrives.

The department's **baseline** statement reflects actual performance of years 2015-2019. The department does not rely on automatic and mutual aid support from outside agencies to complement its effective response force.

For 90% of all first responder calls, the Department met its 2-person staffing benchmark 100% of the time, with a total response time for the first due unit of 7 minutes and 16 seconds. The first due unit was providing early defibrillation and basic life support until advanced life support arrived.

Technical Rescue

The department's **benchmark** service level objectives for technical rescue are as follows:

The Mt. Lebanon Fire Department's technical rescue first unit benchmark is to respond to all technical rescue events in 7 minutes and 20 seconds or less, total response time, 90% of the time. The first-due unit(s) shall be staffed with a minimum of three (3) firefighters and be capable of determining the scope of and stabilizing the incident until additional resources arrive. The Department's 90th percentile technical rescue effective response force (ERF) and extrication time benchmarks and minimum performance standards (MPS) are as follows (Table 41):

Table 41: Technical Rescue Benchmark / Minimum Performance Expectations

Incident Type	ERF	Benchmark Assembly Time	MPS Assembly Time	Benchmark Extrication Time	MPS Extrication Time	Capabilities
Vehicle Extrication	6	10 min.	12 min.	20 min.	30 min.	Command, stabilization, extrication, fire protection
Confined Space Rescue	14	13 min.	15 min.	30 min.	45 min.	Command, safety, rigging, entry, ventilation, monitoring, backup, air supply
Low/High Angle Rescue	12	12 min.	14 min.	20 min.	45 min.	Command, safety, rigging, belay, patient care, hazards
Water / Ice Rescue	15	13 min.	15 min.	15 min.	20 min.	Command, safety, rope, spotter, rescue, debris, patient care, packaging, hazards
Trench Rescue	13	13 min.	15 min.	60 min.	120 min.	Command, safety, shoring, rigging, monitoring, entry, hazards, ventilation
Stalled Elevator	6	10 min.	12 min.	10 min.	30 min.	Command, access, patient, tools, hazards, safety
Industrial Entrapment	8	10 min.	12 min.	20 min.	40 min.	Command, stabilization, patient, tools, hazards, fire, safety

The department's technical rescue **baseline** statements reflect actual performance of years 2015-2019.

The department may or may not rely on automatic and mutual aid support from outside agencies to complement its effective response force depending on the scope of the incident.

For 90% of all technical rescue incidents, the Department met its 3-person staffing benchmark 63% of the time, with a total response time for the first due unit of 8 minutes and 8 seconds. The first-due unit(s) were capable of determining the scope of and stabilizing the incident until additional resources arrive.

For 90% of all other technical rescue incidents, the total response time for the assembly of an effective response force (ERF) with staffing requirements based on incident type, was 12 minutes and 25 seconds. The department's baseline extrication time for vehicle entrapment was 18:00.

Hazardous Materials

Hazardous materials responses are categorized as Tier 1, Tier 2, and Tier 3 responses. The tiered responses are defined as follows:

Tier 1 - Tier 1 responses include carbon monoxide alarm activations with no symptoms, natural gas leaks outside of residences, minor quantities of flammable or combustible liquids spilled outside a structure, investigations of possible chemical or gas odors, and other conditions that can be controlled by the on-duty crew. Apparatus generally responds in a non-emergency mode.

Tier 2 - Tier 2 responses include carbon monoxide alarm activations with occupants with symptoms, natural gas leaks inside of residences, flammable or combustible liquids spilled inside a structure, large quantities of flammable or combustible liquids spilled outside a structure, and investigations of possible chemical or gas odors or other conditions that can be controlled by the on-duty crew. Apparatus may respond in either an emergency or non-emergency mode based on dispatch information.

Tier 3 - Tier 3 responses include a spill, leak or condition that may adversely impact or threaten life, health, property, or the environment and where control of the incident requires Level B or greater personal protection and may also require an Allegheny County Hazardous Materials Team response.

The department's **benchmark** service level objectives for hazardous materials incidents are as follows:

The Mt. Lebanon Fire Department's first unit benchmark is to respond to all Tier 2 hazardous materials events in 6 minutes and 50 seconds or less, total response time, 90% of the time. The first-due unit shall be staffed with a minimum of three (3) firefighters and be capable of establishing command and mitigating the incident or establishing command and isolating the area, depending on the hazard(s).

The Mt. Lebanon Fire Department's first unit minimum performance standard is to respond to all Tier 3 hazardous materials events in 7 minutes and 20 seconds or less, total response time, 90% of the time. The first-due unit shall be staffed with a minimum of three (3) firefighters and be capable of establishing command and isolating the area.

The Department's effective response force (ERF) assembly benchmark for Tier 3 hazardous materials events is to provide an effective response force (ERF) of twelve (12) firefighters in 13 minutes or less total response time, 90% of the time. The ERF shall be capable of establishing a perimeter in addition to the hot and cold zones, assisting with evacuations, conducting decontamination, suppressing related fires, and performing rescue of viable victims and/or administering emergency medical care. Assistance from the Allegheny County Hazardous Materials Team shall arrive within 30 minutes or less total response time, 90% of the time.

The department's **baseline** hazardous material statement reflects actual performance of years 2015-2019. The department may or may not rely on automatic and mutual aid support from outside agencies to complement its effective response force depending on the scope of the incident.

For 90% of all Tier 2 hazardous materials incidents, the Department met its 3-person staffing benchmark 70% of the time, with a total response time for the first due unit of 7 minutes and 28 seconds. The first-due unit(s) were capable of determining the scope of and stabilizing the incident until additional resources arrive.

For 90% of all Tier 2 hazardous materials incidents requiring the assembly of more than the 1st due unit, the department was able to assemble an effective response force based on the incident needs, ranging from 6 to 10 firefighters in 10:28.

For 90% of all Tier 3 hazardous materials incidents, the department met its 3-person staffing benchmark 75% of the time, with a total response time of the first due unit of 6 minutes and 27 seconds. The first-due unit(s) were capable of establishing command, determining the scope of the incident and isolating the area until additional resources arrive.

Fore 90% of all Tier 3 hazardous materials incidents requiring the assembly of an effective response force, the department was able to assemble an effective response force of 12 firefighters in 17:00. Representative from the County Hazardous Materials Team arrived in 29 minutes.

Performance Reports

Baseline performance constitutes the Department's current performance. Several factors should be considered when accounting for baseline response times. The following data tables present the Department's 90th percentile baseline. Following NFPA 1710 standards and CFAI requirements, percentile metrics demonstrate a better representation of response times than averages. Instead of displaying what the Department does half of the time, the Department analyzes how it performs a majority of the time.

While a suburb of the City of Pittsburgh, Mt. Lebanon has a population density greater than 2,000 per square mile and a total population in excess of 30,000. Therefore, all metrics are measured in accordance with CFAI's urban population density standard and represents all risk types.

Factors influencing data collection include:

- In 2018, the dispatch center moved into a new start-of-the-art facility and purchased all new dispatching hardware. Call handling times have steadily improved for structure fires. In 2019, for the first time, call handling times were under 90 seconds 90% of the time with a baseline of 1:19. In all prior years, the baseline was over 120 seconds.
- The Department began using an audio recorder to record more accurate times in 2012. Prior to 2012, times were based on a County CAD sheet which is not as accurate as current practice.
- The department does not have access to EMS CAD data since 2014. While it appears that EMS call handling times have improved significantly, since 2015, the call handling times are from the time the CAD realized an EMS unit is not available until the time the fire department unit is dispatched. The department will reference MRTSA performance charts for actual call handling times.
- Some of the data sets are very small. The department responds to approximately 15 structure fires in the community annually, and technical rescue and hazardous materials incidents occur infrequently.

Table 42: Structure Fires 90th Percentile Baseline Performance

(Moderate Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2015-2019	2019	2018	2017	2016	2016	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	2:22	1:26	2:11	2:19	2:22	2:51	1:30
Turnout Time	Turnout Time 1st Unit	Urban	1:19	1:09	1:21	1:20	1:17	1:14	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	4:38	4:32	4:35	4:25	4:28	4:41	4:00
	Travel Time ERF **Concentration**	Urban	6:20	6:39	7:48	6:54	8:58	7:20	8:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	7:07	6:36	7:36	7:11	6:57	6:53	6:50
			n=113	n =20	n=26	n=27	n=24	n=16	
	Total Response Time ERF **Concentration**	Urban	12:33	12:47	10:52	12:46	12:43	12:26	10:50
			n=45	n =9	n=10	n=6	n=13	n=7	

In addition, for all structure fires, an automatic aid engine from the Dormont Fire Department, located 0.91 miles from the Mt. Lebanon Fire Department, responds immediately with a minimum of one career firefighter (3 pm – 7 am) and four career firefighters (7 am – 3 pm) while a second automatic aid engine responds from Bethel Park.

Table 43: Emergency Medical Services – First Responder 90th Percentile Baseline Performance

First Responder - 90th Percentile Times - Baseline Performance			2015 - 2019	2019	2018	2017	2016	2015	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	1:06	1:06	0:45	1:08	1:28	1:25	1:30
Turnout Time	Turnout Time 1st Unit	Urban	1:17	1:19	1:16	1:22	1:14	1:16	1:00
Travel Time	Travel Time 1st Unit **Distribution**	Urban	5:22	5:14	5:43	5:12	5:35	5:43	4:00
	Travel Time ERF **Concentration**	Urban	5:22	5:14	5:43	5:12	5:35	5:43	4:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	7:14	6:59	7:00	6:57	7:42	7:33	6:30
			n=602	n=200	n=102	n=78	n=101	n=121	
	Total Response Time ERF **Concentration**	Urban	7:14	6:59	7:00	6:57	7:42	7:33	7:33
			n=602	n=200	n=102	n=78	n=101	n=121	

Table 44: Emergency Medical Services –MRTSA 90th Percentile Baseline Performance

EMS - 90th Percentile Times - Baseline Performance			2015-2019	2019	2018	2017	2016	2015	Target (Agency Benchmark)
Alarm Handling	Pick-up to Dispatch	Urban						3:39	1:30
Turnout Time	Turnout Time 1st Unit	Urban						1:01	1:00
Travel Time	Travel Time 1st Unit **Distribution**	Urban						8:01	4:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban						8:48	6:30

Times are for the first arriving medic unit and may not reflect the arrival of the MRTSA Quick Response Vehicle or the Fire Department First Responder Unit if arriving prior to the medic unit.

Table 45: Tier II Hazardous Materials 90th Percentile Baseline Performance

Tier II Hazardous Materials - 90th Percentile Times - Baseline Performance			2015-2019	2019	2018	2017	2016	2015	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	3:28	2:20	3:28	2:58	2:47	3:10	1:30
Turnout Time	Turnout Time 1st Unit	Urban	1:19	1:15	1:22	1:19	1:18	1:15	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	5:04	4:56	5:37	5:20	4:58	5:41	4:00
	Travel Time ERF **Concentration**	Urban	8:10	5:49	8:10	N/A	6:13	N/A	8:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	8:14	7:28	8:08	8:16	8:14	7:04	6:50
			n=40	n=9	n=6	n=7	n=8	n=10	
	Total Response Time ERF **Concentration**	Urban	10:28	8:38	10:28	N/A	10:13	N/A	10:50
			n=4	n=1	n=1	n=0	n=2	n=0	

Table 46: Tier III Hazardous Materials 90th Percentile Baseline Performance

Tier III Hazardous Materials - 90th Percentile Times - Baseline Performance			2015-2019	2019	2018	2017	2016	2015	Agency Benchmark
Alarm Handling	Pick-up to Dispatch	Urban	3:04	3:04	N/A	N/A	N./A	N/A	1:30
Turnout Time	Turnout Time 1st Unit	Urban	0:47	0:47	N/A	N/A	N/A	N/A	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	2:33	2:33	N/A	N/A	N/A	N/A	4:00
	Travel Time ERF **Concentration**	Urban	6:52	6:52	N/A	N/A	N/A	N/A	8:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	6:26	6:26	N/A	N/A	N/A	N/A	6:50
			n=1	n=1	n=0	n=0	n=0	n=0	
	Total Response Time ERF **Concentration**	Urban	17:00	17:00	N/A	N/A	N/A	N/A	10:50
			n=1	n=1	n=0	n=0	n=0	n=0	

Table 47: Technical Rescue 90th Percentile Baseline Performance

Technical Rescue - 90th Percentile Times - Baseline Performance			2015-2019	2019	2018	2017	2016	2015	Agency benchmark
Alarm Handling	Pick-up to Dispatch	Urban	3:07	4:09	2:16	2:43	2:52	2:52	1:30
Turnout Time	Turnout Time 1st Unit	Urban	1:12	2:06	1:40	1:36	1:08	1:09	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	4:23	5:03	4:20	6:38	4:53	3:48	4:00
	Travel Time ERF **Concentration**	Urban	5:35	5:03	4:20	4:16	5:23	6:09	8:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	8:08	8:54	7:22	8:29	8:38	7:04	6:50
			n=29	n=7	n=3	n=4	n=4	n=11	
	Total Response Time ERF **Concentration**	Urban	12:25	12:25	7:06	10:32	12:58	12:45	10:50
			n=15	n=4	n=2	n=2	n=3	n=4	

Section 8: Compliance Methodology & Comparability

Compliance Methodology

The Mt. Lebanon Fire Department will continue its efforts to provide analysis and evaluation of the adopted Standards of Cover. The Department will continue to review performance measure at least annually, evaluate performance on an on-going basis, develop compliance strategies in areas where improvement may be needed, communicate expectations to members of the Department, validate compliance, and make adjustment.

In order to improve data analysis and evaluation, the Department will take the following measures:

- Continue to review incidents with turnout times exceeding 90 seconds.
- Continue to record emergency response times from the in-station audio recorder.
- Evaluate performance measures on an on-going basis.
- Continue to work with the County to improve the mobile CAD system to provide more accurate response data.
- Continue to exercise its influence with the Allegheny County Director of Emergency Services, the Fire Chief's Communications Committee, and the Allegheny County 911 Center to improve alarm handling times.
- Update Standards of Cover document on an annual basis.
- Conduct an annual formal evaluation of all services, activities, and programs.

The Department will update, and submit to the Municipality, the Standards of Cover on an annual basis. The Standards of Cover will be reviewed by the Accreditation Manager and Platoon Chiefs to ensure accuracy and consistency. The Standards of Cover and Strategic Plan shall also provide a basis for developing the annual budget.

Comparability

Comparability is the review of the organization in comparison to other like-sized agencies, other accredited fire agencies, or industry best practices. Outlined below are three relevant national standards: the American Heart Association guidelines, the Insurance Services Office standards, and National Fire Protection Association standards.

For comparison purposes, the Mt. Lebanon Fire Department measured its performance against two accredited combination fire service organizations in 2008 and five accredited combination fire service organizations in 2010. The organizations were chosen based upon the Mt. Lebanon Fire Department's ability to obtain the organizations' standards of cover document and their comparable size. Not all of the standards of cover documents were up-to-date.

In 2016, the websites of eleven (11) accredited, combination fire departments with populations between 17,000 and 50,000 were searched for comparison purposes. Of those agencies, the Department was able to locate and review one (1) Standard of Cover document, two (2) strategic plans, and four (4) annual reports that were published to the departments' websites.

As combination fire departments, it was only apparent that one (1) of the organizations has officially adopted the benchmarks and/or referenced the NFPA Standards (1710 or 1720) regarding staffing and deployment. Two accredited departments had just recently switched from using averages to 90th percentile benchmarking to measure performance. One of the department's 1st unit response benchmark was 8 minutes, as opposed to the NFPA recommended 6:20. Most of the departments appeared to be offering programs similar to Mt. Lebanon, but with a greater number of career staff. Very little additional information was available for comparison purposes.

Comparisons with other local organizations were not possible as the majority are volunteer departments and the only accredited fire department in Pennsylvania, Abington Volunteer Fire Department, is also an all-volunteer department that is located in Northeastern Pennsylvania. No local career departments have a written standards of cover document or adopted performance measures, with the exception of the City of Pittsburgh, that measures performance against NFPA 1710.

The Department will continue to compare it performance to accredited organizations of similar size, configuration, and service demands as part of the Standards of Cover annual update. Ultimately, the Department would like to compare its performance against at minimum of five (5) organizations of similar size, configuration, and service demands, preferably located in the Northeastern United States.

American Heart Association Guidelines

The American Heart Association (AHA) has established that the brain begins to die within four to six minutes without oxygen; brain damage is irreversible after ten minutes. Interventions include early cardiopulmonary resuscitation (CPR) and electrical defibrillation. The earlier CPR is initiated, the better the patient's chance of survival. The AHA states that patients receiving CPR within two minutes and defibrillation within four minutes have a thirty percent survival rate. For patients receiving no CPR and delayed defibrillation (after ten minutes), the survival rate drops below two percent.

Insurance Services Office

The Insurance Services Office (ISO) evaluates public fire-protection services and classifies a communities' ability to suppress fires. The evaluation of a jurisdiction's fire suppression capability includes an assessment of the dispatch center (weighted at ten percent), fire department staffing, apparatus and equipment (fifty percent weight), and the water supply system (weighted at 40 percent). After calculating the jurisdiction's strengths and weaknesses, the Department is given a rating on a scale of one to ten. A Class 1 rating is the best while a Class 10 rating represents that no fire protection services are available.

The Public Protection Classification system provides an objective, countrywide standard that helps fire departments in planning and budgeting for facilities, equipment, and training. And by securing lower fire insurance premiums for communities with better public protection, the PPC program provides incentives and rewards for communities that choose to improve their firefighting services.

The Department received an ISO Class 1 rating during its latest evaluation that went into effect on June 1, 2014. Prior to receiving the Class 1 rating, a Class 3 rating had been in effect since 1988. The department is one of only two departments in Pennsylvania to have obtained a Class 1 rating.

Table 48: 2013 ISO Evaluation

Receiving & Handling Fire Alarms	Maximum Credit	Credit Received
Reporting	3.00	2.10
Telecommunicators	4.00	2.51
Dispatch Circuits	3.00	1.72
Total – Receiving & Handling Fire Alarms	10.00	6.33
Fire Department	**Maximum Credit**	**Credit Received**
Engine Company	6.00	5.99
Reserve Pumpers	0.50	0.00
Pump Capacity	3.00	3.00
Ladders/Service Units	4.00	4.00
Reserve Ladder / Service Units	0.50	0.00
Deployment Analysis	10.00	8.25
Company Personnel	15.00	11.16
Training	9.00	8.06
Total – Fire Department	50.00	42.46
Water Supply	**Maximum Credit**	**Credit Received**
Supply System	30.00	29.66
Hydrants	3.00	3.00
Inspection & Flow Testing	7.00	7.00
Total – Water Supply	40.00	39.66
Community Risk Reduction	**Maximum Credit**	**Credit Received**
Prevention, Education, Investigation	5.50	5.30
Total – Community Risk Reduction	5.50	5.30
	105.50	90.90

National Fire Protection Association (NFPA) Standards 1221 and 1710

National Fire Protection Association 1221 and 1710 are nationally recognized voluntary standards. NFPA 1221 (2010) is the standard for the installation, maintenance, and use of emergency services communications systems and NFPA 1710 (2010) is the standard for the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments. These standards outline an organized approach to defining levels of service, deployment capabilities, and staffing.

Specifically, NFPA 1710 provides standard definitions for fire apparatus, personnel assigned, procedural guidelines within which they operate, and staffing levels needed to accomplish specific tasks on arrival at an incident. NFPA 1710 states that fire departments shall establish a performance objective of not less than 90 percent for each of the following response time objectives:

- One minute (60 seconds) for alarm processing time.
- One minute and twenty seconds (80 seconds) for turnout time for fire and special operations response and one minute (60 seconds) turnout time for EMS response.
- Four minutes (240 seconds)or less travel time for the arrival of the fire arriving engine company at a fire suppression incident and eight minutes (480 seconds) or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident.
- Four minutes (240 seconds) or less travel time for the arrival of a unit with first responder with automatic external defibrillator (AED) or higher level capability at an emergency medical incident.

While NFPA 1710 focuses strictly on deployment, staffing, and service levels, there is a realization that this is but one component of a total community fire protection planning process. Other components that reduce the risks of fire include strict adherence to and enforcement of the community's building and fire prevention codes and the delivery of enhanced life safety education programs that target specific risks and risk audiences. Mt. Lebanon's historically low fire loss data, ISO Rating, and low number of civilian fire casualties are also good indicators of the effectiveness of the department's comprehensive community fire protection planning process.

For purpose of creating a Standards of Coverage document, the Mt. Lebanon Fire Department measures performance against the NFPA 1710 Standard for an "urban" environment.

Section 9: Overall Evaluation

Distribution

Unfortunately, there are very few vacant lots and very little opportunity for development as Mt. Lebanon is almost fully-developed. When the Municipality was looking to purchase property to build a new fire station in the mid to late 1990's, the ideal location identified was a piece of property at 975 Washington Road, near the intersection of Washington Road and Cochran Road, owned by the Mt. Lebanon United Lutheran Church, and located near the geographic center of the community. This site would have provided the greatest amount of coverage of the sites that were being considered. The Municipality was unable; however, to negotiate a fair price for this property and the site at the intersection of Washington Road and Shady Drive East, 555 Washington Road, was chosen to erect a new fire station.

The engine company distribution from the 555 Washington Road site covers 63.69% of the Municipality within the 1.5 mile travel distance for first alarm engine company response (Figure 43). Over the previous five-year period, the department is responding to 68% of structure fires within the NFPA 4:00 travel time and77% of the NFPA 5:20 total response time (turnout time + travel time).

ISO performance objectives for coverage area for first alarm engine company response from the Mt. Lebanon Public Safety Building include:

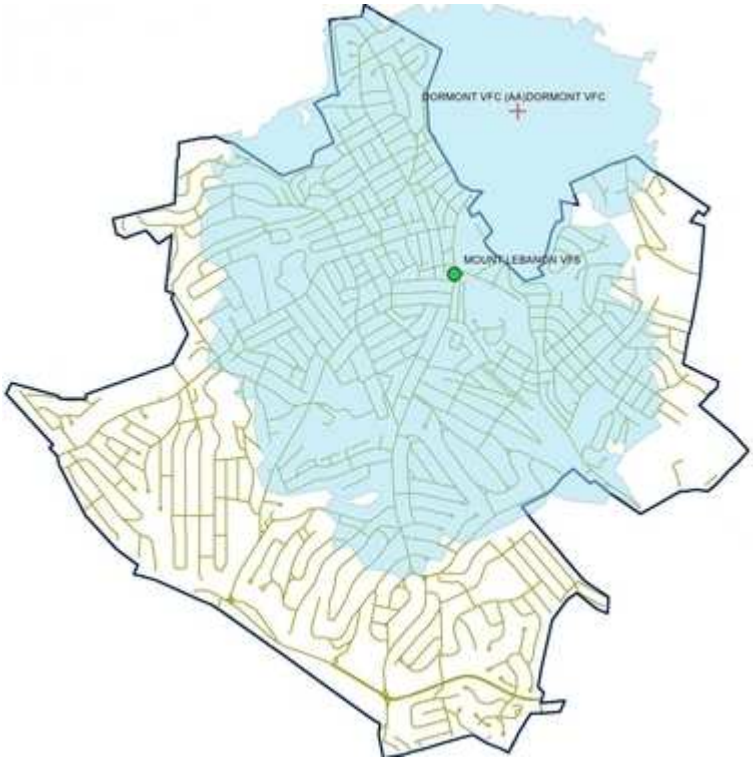


Figure 48: Current Engine Company Distribution

A second engine company, located at the Public Works Facility at 1250 Lindendale Drive, would provide coverage to an additional 17.30% of the community, not covered by the first due engine company at 555 Washington Road.

ISO performance objectives for coverage area for first alarm engine company response from the Public Works Facility include (Table 49):

Table 49: Percentage of Area Covered from Public Works Facility

Response Zone	Percentage of Area Covered
1A	0%
1B	6%
2A	74%
2B	52%
3A	6%
3B	6%
4A	0%
4B	0%
5A	31%
5B	0%

Table 50: Total Engine Company Distribution with Two Stations

Response Zone	% Coverage from 555 Washington Rd.	% Coverage from 1250 Lindendale Dr.	Total % Coverage
1A	100%	0%	100%
1B	71%	6%	77%
2A	0%	74%	74%
2B	32%	52%	84%
3A	0%	6%	6%
3B	94%	6%	100%
4A	93%	0%	93%
4B	61%	0%	61%
5A	69%	31%	100%
5B	100%	0%	100%
All Zones	64%	17%	81%

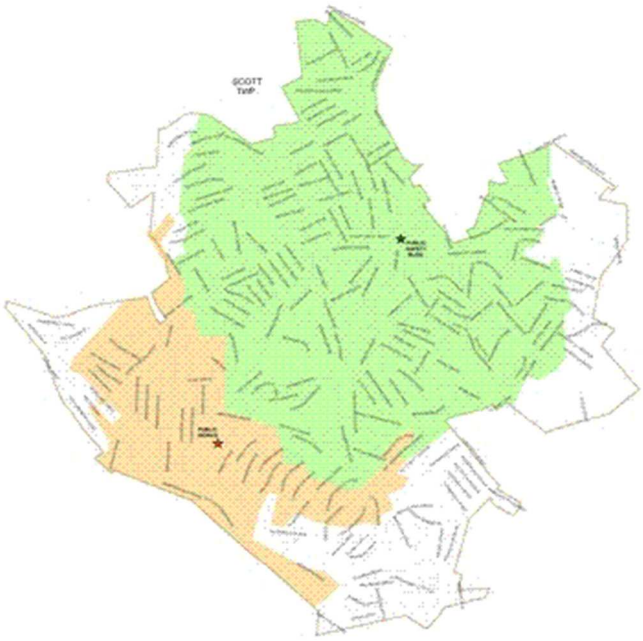


Figure 49: Total Engine Company Distribution with Two Stations

While a second station location would provide greater distribution and improve the response times to those zones outside the performance benchmark for total response time, Zones 2A, 2B, and 3A, there are no plans to build and staff a second station at this time. The Department continues to perform well based on the community's below average numbers for fire loss, civilian fire casualties and injuries, and structure fires due to a wide-range of proactive fire prevention and life safety education programs. The department believes the adopted response benchmarks are realistic benchmarks based on the community and fire department and municipal resources. The addition of a second station to increase engine company distribution has been added to the department's annual budget as a service level option for municipal consideration.

Challenges

The Department has several challenges regarding its data and adopted performance measures:

1. While the Department has spent a considerable amount of time exercising its influence with the County Dispatch Center over the past eight years and some improvement has been realized, alarm handling times continue to exceed national standards.

2. The probability and frequency of technical rescue incidents is low. While the department has some data regarding these incidents, there is currently not enough data to provide for an accurate evaluation of all of the Department's adopted performance measures in this area. The Department will continue to gather and evaluate data for these types of incidents.

3. Maintaining a strong volunteer force as the number of volunteers continues to decline nationally.

Policy Recommendations

The Standards of Cover shall be a basis for policy changes that will have a positive impact on the attainment of the performance measures and outcomes established for the community. An overall evaluation of the Standards of Cover shall occur on an annual basis, at a minimum. The Standards of Cover shall be integrated into the Department's budget and strategic plan. No additional policy changes are recommended at this time.

The Department will continue to gather and evaluate data to ensure performance objectives are being met and/or to identify areas for improvement.

At the end of 2014, the Department adjusted its turnout time performance objective for structure fires from 80 seconds or less 90% of the time to 80 seconds or less 95% of the time, based on performance over the previous 3-year period. The Department met the performance benchmark 95% of the time in 2019.

In 2018, the department underwent a reorganization to consolidate both operations and special operations, to redefine the agency's technical rescue mission, and to continue to improve 4-person, on duty staffing. The department also completed an update to its strategic plan with both internal and external stakeholder input.

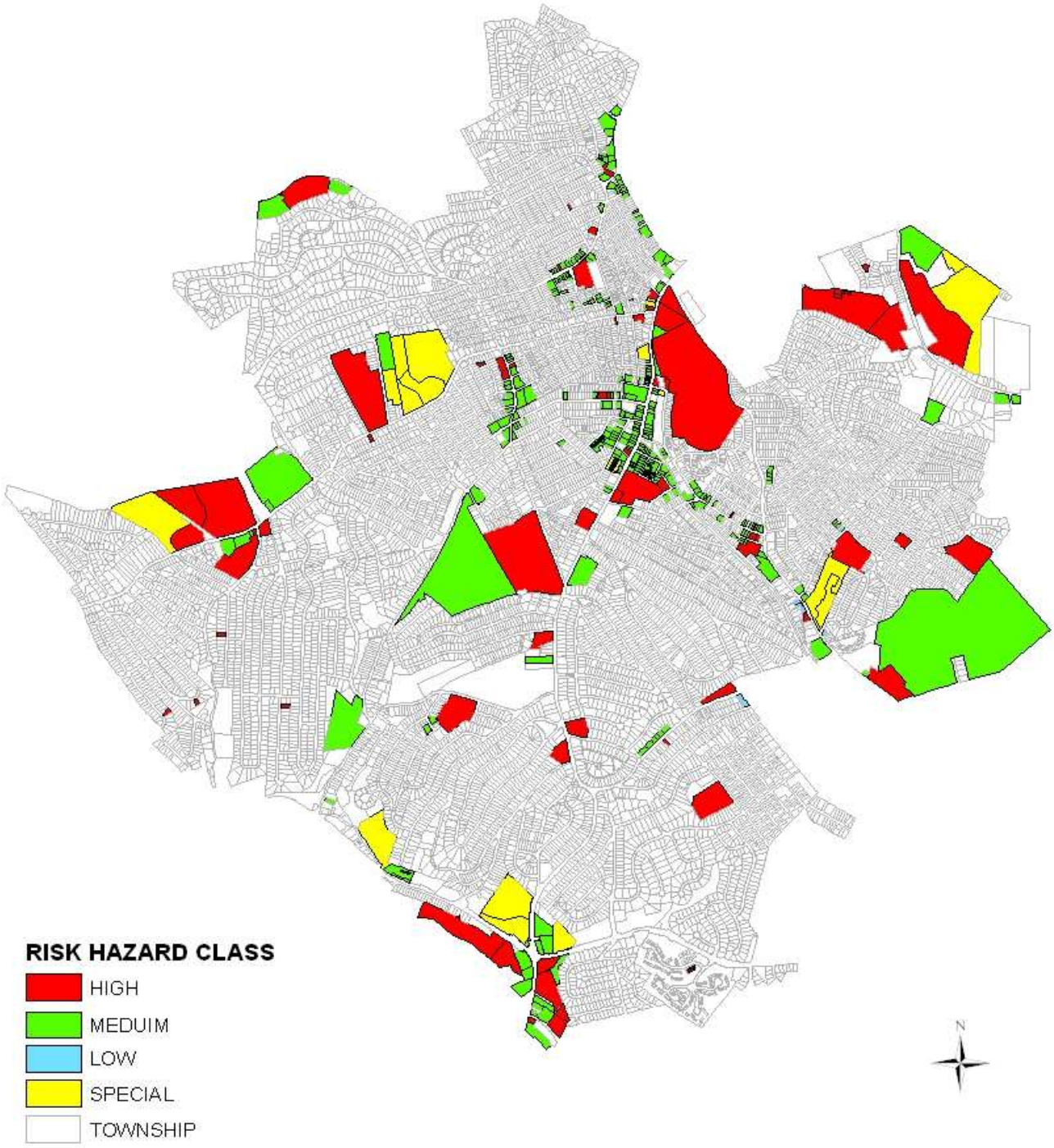
In 2019, the communications center moved to a new facility and migrated from ProQA to APCO emergency medical dispatching protocols. The data comparing ProQA to APCO was not when this document was updated. The department will also continue to make policy recommendations for a local fire training facility to improve fireground operations and situational awareness.

In 2020, an additional full-time staff member was approved to increase the effectiveness of the department's fire inspections and emergency management programs while providing an additional responder on day shift when volunteers are least likely to be available..

Appendices, Exhibits, and Attachments

Appendix A
Mt. Lebanon
Fire Department
Risk Analysis

MT. LEBANON FIRE DEPARTMENT
RISK HAZARD CLASSIFICATION MAP



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Occupancy Vulnerability & Risk Assessment Scoring

I. General

A. Building Construction – Type of construction.

Non-Combustible 1 point

Type I & II construction in which the building elements are of noncombustible materials, except as permitted in the IFC.

Limited Combustible 2 points

Type III construction in which the exterior walls are of noncombustible materials and the interior building elements are of any materials permitted by the IFC.

Type IV construction in which the exterior walls are of noncombustible materials and the interior elements are of solid or laminated wood without concealed spaces.

Combustible 3 points

Type V construction in which the structural elements, exterior walls and interior walls are of any materials permitted by the IFC.

B. Number of Floors – Number of stories present in the occupancy.

1 – 2 stories	1 point
3 – 4 stories	2 points
5+ stories	3 points

C. Square Footage – Square footage per floor of the building.

0 – 7,500 ft^2	1 point
7,501 – 15,000 ft^2	2 points
15,001+ ft^2	3 points

II. Life Safety

A. Occupant Load – Total number of occupants/employees.

< 25	1 point
6 – 99	2 points
> 100	3 points

B. Occupant Mobility – Mobility characteristics of the occupants relative to building height and/or relative freedom to exit the building.

Not a factor	0 points
Ambulatory (1 to 2 stories)	1 point
Ambulatory (3 + stories)	2 points
Non-Ambulatory	3 points

C. Occupancy Type – Classification of buildings as to use and occupancy.

Storage (S) and Utility (U)	1 point
Business (B), Mercantile (M), and Residential (R)	2 points
Assembly (A), Educational (E), Factory (F) High Hazard (H), and Institutional (I)	3 points

D. Fire Protection – Presence of warning alarm and sprinkler systems.

Fire Alarm & Full Sprinkler System	0 points
Fire Alarm & Partial Sprinkler System	1 point
Fire Alarm – No Sprinkler	2 points
No protection	3 points

III. Risks

A. Fire Load – The appropriate fire load characteristics of the building. The table below lists typical occupancies for each of the different fire loads. Occupancy examples in the table are intended to represent the norm for those occupancy types. Unusual or abnormal fuel loadings or combustible characteristics and susceptibility for changes in these characteristics, for a particular occupancy, are considerations that should be weighed in the selection classification.

Light 1 point

Light hazard occupancies are defined as occupancies or portions of other occupancies where the quantity and/or combustibility of contents is low and fires with relatively low rates of heat release are expected.

Animal shelters	Churches	Clubs
Educational	Hospitals	Veterinary
Institutional	Kennels	Libraries
Museums	Nursing Homes	Offices
Residential	Restaurant	Theaters

Ordinary 2 points

Ordinary hazard occupancies are defined as occupancies or portions of other occupancies where the quantity and combustibility of contents are low to high and fires with relatively moderate rates of heat release are expected.

Bakeries	Beverage mfg.	Auto showrooms
Canneries	Electronic plants	Glass mfg.
Laundries	Agricultural	Barns and stables
Cereal mills	Chemical plants	Confectionery
Distilleries	Dry cleaners	Loading docks
Machine shops	Metal working	Mercantile
Post offices	Printing	Stages
Textile	Wood machining	Wood assembly

Extra Hazard 3 points

Extra hazard occupancies are defined as occupancies or portions of other occupancies where the quantity and combustibility of contents are very high, flammable or combustible liquids are present, dust, lint, or other materials are present, introducing the probability of rapidly developing fires with high rates of heat release.

Die casting	Metal extruding	Hydraulic fluid areas
Flammable liquids spraying	Upholstering	Printing F.P. 100ºF
Plastics processing	Solvent cleaning	Varnish, paint dipping

B. Needed Fire Flow – Needed fire flow for 100% fire involvement for effective area, in gallons per minute.

1,500 gpm – 2,750 gpm	1 point
3,000 gpm – 3,750 gpm	2 points
4,000 + gpm	3 points

C. Economic Impact – Value of the property to the community.

Personal or family	1 point
Business loss or minor casualty	2 points
Moderate economic impact	3 points
Severe economic of non-monetary (infrastructure, cultural, historical)	4 points

B. Combustibility – Based on the Insurance Services Office (ISO) Occupancy Combustibility Rating.

Low (Class 1: Non-combustible) - Merchandise or materials, including furniture, stock, or equipment, which in permissible quantities does not in themselves constitute an active fuel for the spread of fire. Examples of occupancies which may (subject to survey) be eligible for C-1 classification include those storing asbestos, clay, glass, marble, stone, or metal products and some metalworking occupancies. 1 point

Medium-Low (Class 2: Limited Combustible) - Merchandise or materials, including furniture, stock, or equipment, of low combustibility, with limited concentrations of combustible materials.Examples of occupancies classified as C-2 include banks, barber shops, beauty shops, clubs, habitational occupancies, hospitals, and offices.

2 points

Medium (Class 3: Combustible) - Merchandise or materials, including furniture, stock, or equipment, of moderate combustibility. Examples of occupancies classified as C-3 include food markets, most wholesale and retail occupancies, etc. 3 points

Medium-High (Class 4: Free burning) - Merchandise or materials, including furniture, stock, or equipment, which burn freely, constituting an active fuel. Examples of occupancies classified as C-4 include cotton bales, furniture stock, and wood products.

4 points

High (Class 5: Rapid burning) - Merchandise or materials, including furniture, stock, or equipment, which either (1) burn with a great intensity, (2) spontaneously ignite and are difficult to extinguish, (3) give off flammable or explosive vapors at ordinary temperatures, (4) as a result of an industrial processing, produce large quantities of dust or other finely divided debris subject to flash fire or explosion Examples of occupancies classified as C-5 include ammunition, excelsior, explosives, mattress manufacturing, matches, and upholsterers. 5 points

IV. Probability – There is always a probability of an event occurring. Probability is based on the frequency of an event. The frequency of that probability ranges from high to low based upon historical call volume to an occupancy.

Low Probability – no or rare history of calls.

Medium Probability – routine history of calls.

High Probability – extensive history of calls.

V. Consequence – There are always consequences of an event occurring. Each creates different risk levels and different requirements for commitment of resources. The consequence score is based on a combination of the Economic Score, Mobility Score, and Occupant Load Score for a particular occupancy, as defined above.

Low Consequence – total score of less than 4 based on economic, mobility, and occupant load.

Medium Consequence – total score equal to 4 based on economic, mobility, and occupant load.

High Consequence - total score was 5 or greater based on economic, mobility, and occupant load.

CRITICAL INFRASTRUCTURE

Critical infrastructure is a term used by governments to describe assets that are essential for the functioning of a society and economy. Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical are listed in each planning zone.

1) Lincoln Elementary School – 2 Ralston Place (Zone 1A)
2) Beverly Road Business District – 291 to 315 Beverly Road (Zone 1A)
3) George Kennedy House – 101 Dan Drive (Zone 1A)
4) Asbury Heights – 700 Bower Hill Road (Zone 1B)
5) Jefferson Elementary / Middle School – 11 Moffett Street (Zone 1B)
6) St. Clair Hospital – 1000 Bower Hill Road (Zone 1B)
7) Virginia Manor Shops – 1717 Cochran Road (Zone 1B)
8) Hoover Elementary School – 37 Robb Hollow Road (Zone 2A)
9) Samuel Carlisle House – 1409 Bower Hill Road (Zone 2A)
10) Galleria Mall – 1500 Washington Road (Zone 2B)
11) Markham Elementary – 165 Crescent Drive (Zone 2B)
12) Foster Elementary School – 700 Vermont Avenue (Zone 3A)
13) Peter Mink House – 811 Rockwood Drive (Zone 3A)
14) Mt. Lebanon Library – 16 Castle Shannon Boulevard (Zone 3B)
15) Howe Elementary School – 400 Broadmoor Avenue (Zone 4A)
16) Medical Rescue Team South – 315 Cypress Avenue (Zone 4A)
17) Keystone Oaks High School / Middle School – 1000 Kelton Avenue (Zone 4B)
18) Seton LaSalle High School – 1000 McNeilly Road (Zone 4B)
19) Salvation Army Building – 1020 McNeilly Road (Zone 4B)
20) Mt. Lebanon High School – 155 Cochran Road (Zone 5A)
21) Mt. Lebanon High School Stadium (Zone 5A)
22) Mt. Lebanon Recreating Center – 900 Cedar Boulevard (Zone 5A)
23) Mt. Lebanon Public Works Facility – 1250 Lindendale Drive (Zone 5A)
24) Hugh Jackson House – 1 Orchid Lane (Zone 5A)
25) Mt. Lebanon Municipal Building – 710 Washington Road (Zone 5B)
26) Mt. Lebanon Public Safety Center – 555 Washington Road (Zone 5B)
27) Central Business District – 600 to 740 Washington Road (Zone 5B)
28) Mt. Lebanon U.P. Church – 255 Washington Road (Zone 5B)
29) St. Bernard's Church – 311 Washington Road (Zone 5B)
30) Washington Elementary School – 735 Washington Road (Zone 5B)
31) Southminster Church – 799 Washington Road (Zone 5B)
32) Mellon Middle School – 11 Castle Shannon Boulevard (Zone 5B)
33) Cemetery Gatehouse – 509 Washington Road (Zone 5B)
34) McCormick House – 424 Kenmont Drive (Zone 5B)
35) Water Supply System
36) Electrical Substations
37) Gas Transmission Facilities
38) Highways
39) Equitrans Pipeline
40) Light Rail Transit

RESPONSE ZONE 1A

Response Zone 1A is bordered by Cochran Road to the West, Bower Hill Road to the South, Dormont Borough to the East, and Scott Township to the North (Figure 1).

Figure 1: Mt. Lebanon Response Zone 1A

There are no special risk, seven (7) high risk, sixty-eight (68) moderate risk, and one (1) low risk commercial occupancies located within the response zone.

Zone	Special Risk	High Risk	Moderate Risk	Low Risk
1A	0	7	68	1

The high risk commercial occupancies include:

Lincoln Elementary School – 2 Ralston Place.
Mainstay Group Home – 250 Parker Drive.
Southwinds Group Home – 524 Lyndhurst Avenue.
Achieva Group Home – 1759 Theodan Drive.
Embassy of Asbury Heights – 230 Beverly Road.
Ace Paints – 294 Beverly Road.
Atria's Restaurant – 110 Beverly Road.

The moderate risk commercial occupancies include most of the occupancies in the Beverly Road Business District (thirteen businesses, five retail, and five restaurants occupying fourteen commercial buildings), seven individual businesses, an automobile service station, and forty-five apartment buildings.

Artsmiths of Pittsburgh – 1635 McFarland Road.
Dormac Associates Strip Mall – 1689 through 1695 McFarland Road.

There are **1,140 moderate risk residential dwellings**. The Lincoln section of the Twin Hills – Lincoln neighborhood includes some of Mt. Lebanon's earliest residences while the Twin Hills section includes homes built well into the 1990's. This neighborhood has considerable vehicular traffic with easy access to Pittsburgh via Banksville Road.

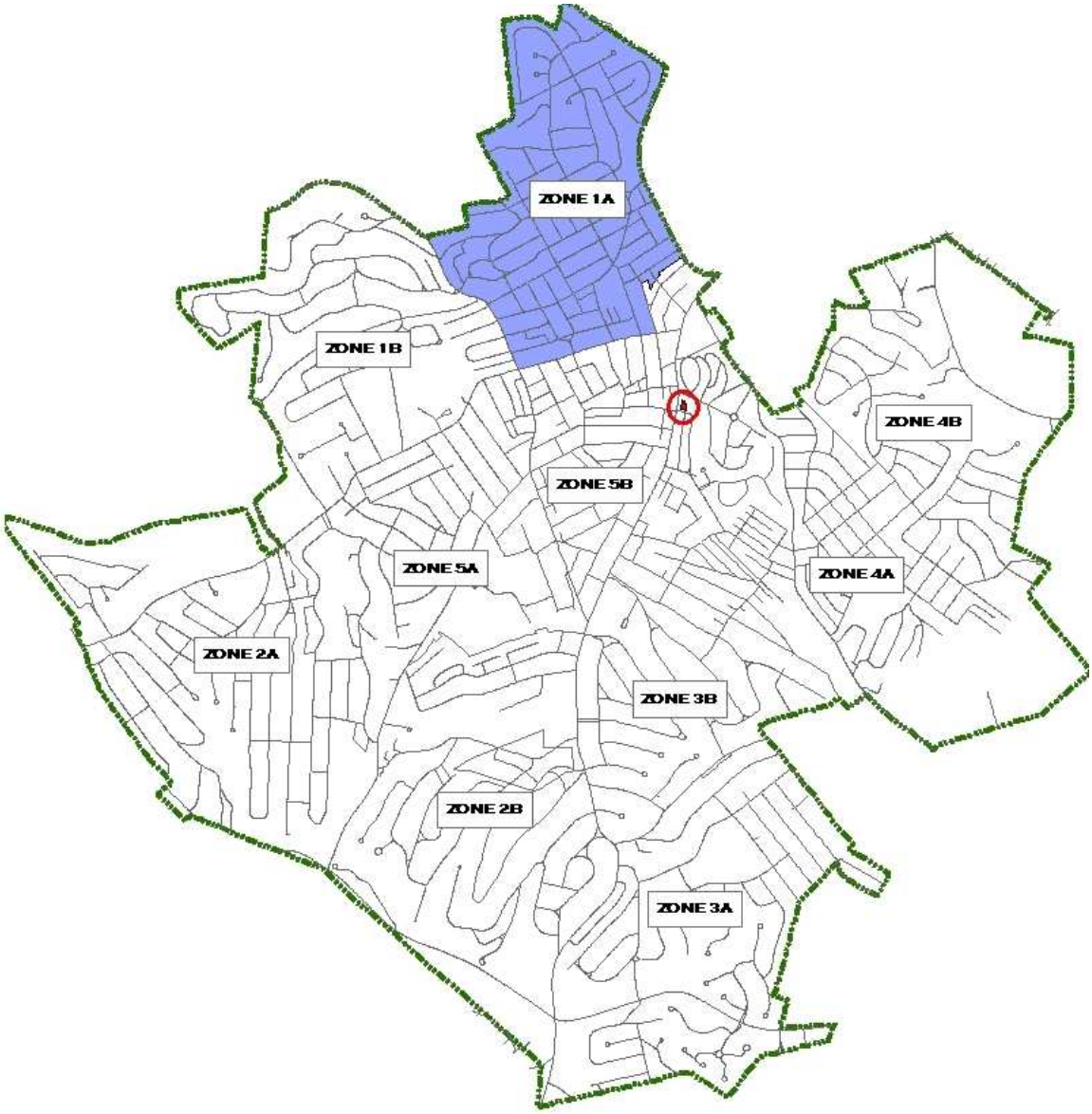
Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical include:

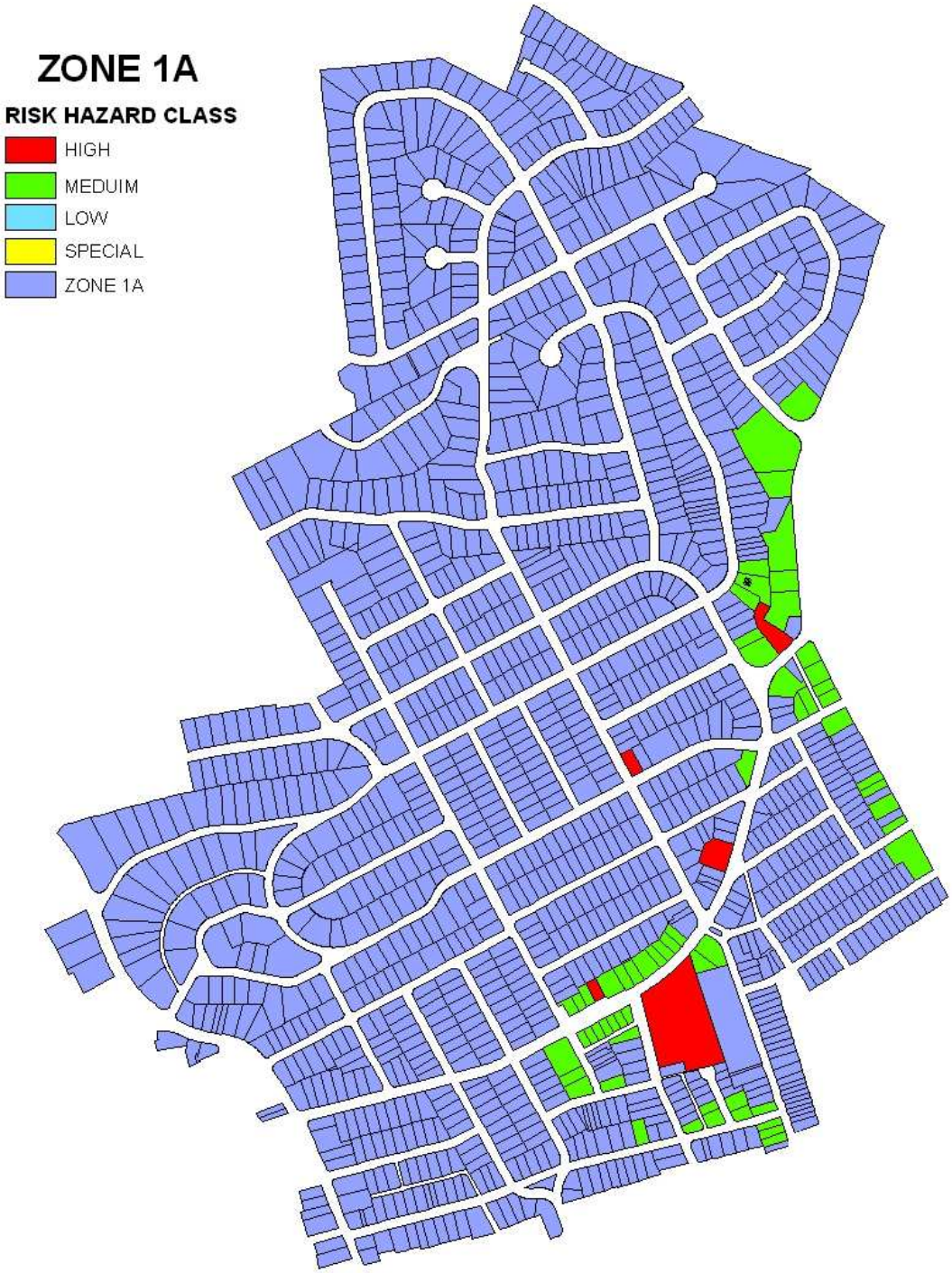
1) Lincoln Elementary School – 2 Ralston Place
2) Beverly Road Business District – 291 to 315 Beverly Road.
3) George Kennedy House – 101 Dan Drive.

The typical or routine non-fire risks include vehicle accidents, hazardous condition calls, service calls, and good intent calls.

There are no unique or isolated non-fire risks in this response zone.

RESPONSE ZONE 1A




ZONE 1A
RISK HAZARD CLASS
HIGH
MEDUIM
LOW
SPECIAL
ZONE 1A

RESPONSE ZONE 1B

Response Zone 1B is bordered by Cochran Road to the East, Bower Hill Road to the South, Dormont Borough to the East, and Scott Township to the West and North (Figure 2).

Figure 2: Mt. Lebanon Response Zone 1B

There are five (5) special risk, three (3) high risk, two (2) moderate risk, and zero (0) low risk commercial occupancies located within the response zone.

Zone	Special Risk	High Risk	Moderate Risk	Low Risk
1B	5	4	2	0

The average number of calls to this response zone averaged 198 over the previous five-year period with the average number of structural fires equaling 2. The 90th percentile travel time to this zone for all emergency responses in 2010 was 4:25.

The special risk commercial occupancies include:

Asbury Heights – 700 Bower Hill Road.

Figure 3: Overhead of Asbury Heights Main Complex, Buildings 1 - 7

Asbury Villas – 730 Bower Hill Road.
Asbury Place – 760 Bower Hill Road.
St. Clair Hospital – 1000 Bower Hill Road.
Family Hospice – 50 Moffet Street.

The high risk commercial occupancies include:

Mainstay Group Home – 831 Bower Hill Road.
Jefferson Elementary / Middle School – 11 Moffet Street.
Virginia Manor Shops – 1717 Cochran Road.

There are **484 moderate risk residential dwellings**. This response zone includes one of Mt. Lebanon's most sought after and affluent neighborhoods, Virginia Manor, with some of Mt. Lebanon's highest residential property values.

Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical include:

1) Asbury Heights – 700 Bower Hill Road.
2) Jefferson Elementary / Middle School – 11 Moffett Street
3) St. Clair Hospital – 1000 Bower Hill Road.
4) Virginia Manor Shops – 1717 Cochran Road.

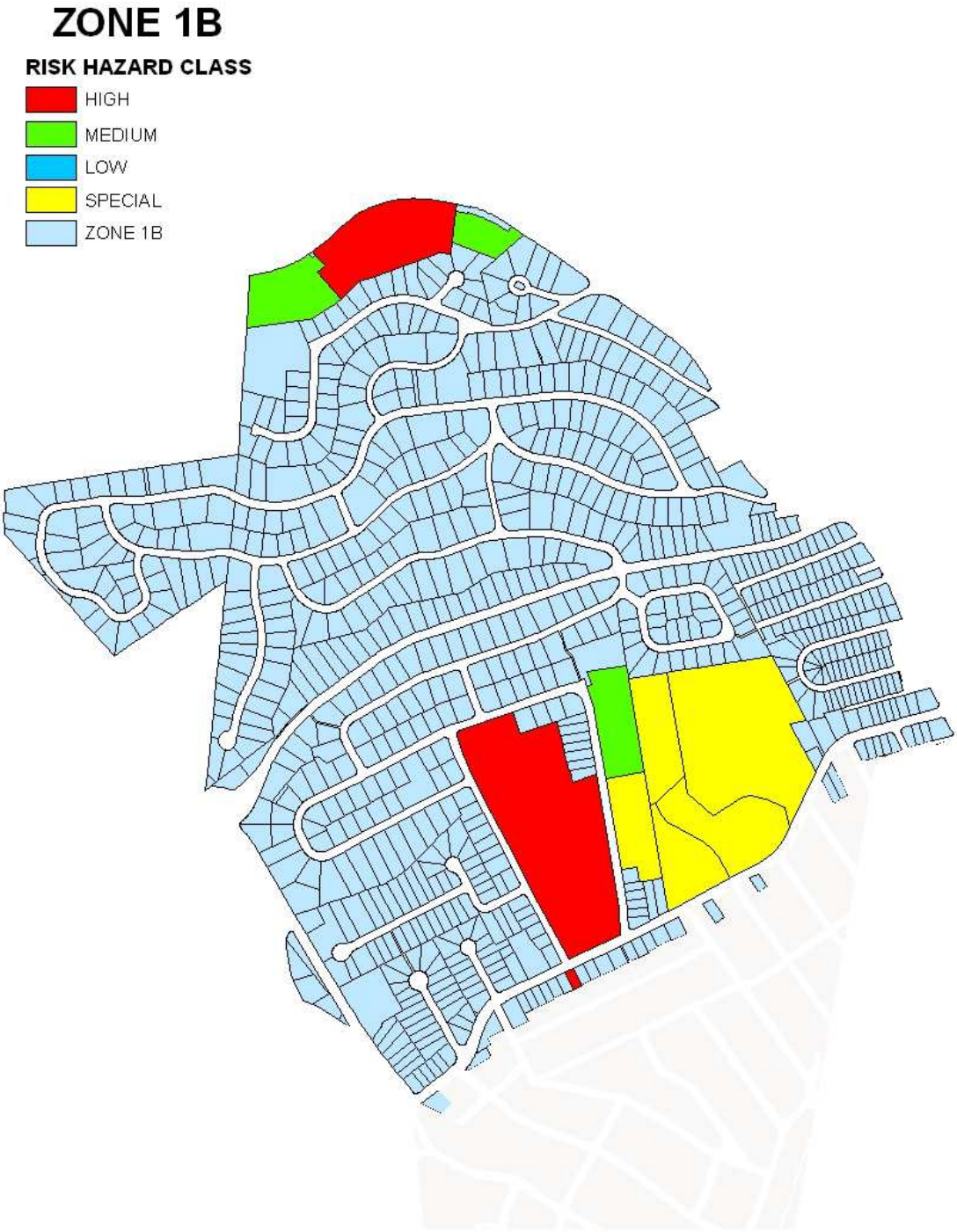
The typical or routine non-fire risks include vehicle accidents, hazardous condition calls, service calls, and good intent calls. There is a high frequency of medical emergencies due to Asbury Heights.

There is an **electrical substation** located at the rear of St. Clair Hospital, off Segar Road.

There is a **gas transmission facility**, a wood-frame gas house, located at 21 Moffett Street, Jefferson Middle School, between the parking lot and the rear of 55 Moffett Street.

The unique or isolated non-fire risk in this response zone includes a 2,500 gallon **refrigerated liquid oxygen tank** at St. Clair Hospital.

RESPONSE ZONE 1B


ZONE 1B
RISK HAZARD CLASS
HIGH
MEDIUM
LOW
SPECIAL
ZONE 1B

RESPONSE ZONE 2A

Response Zone 2A is bordered by Scott Township to the West and North, Upper St. Clair Township to the South, and Lakemont Drive to the East (Figure 4).

Figure 4: Mt. Lebanon Response Zone 2A

There is one (1) special risk, ten (10) high risk, three (3) moderate risk, and one (1) low risk commercial occupancies located within the response zone.

Zone	Special Risk	High Risk	Moderate Risk	Low Risk
2A	1	11	3	1

The special risk commercial occupancy is:

Covenant of South Hills – 1300 Bower Hill Road.

The high risk commercial occupancies include:

Hoover Elementary School – 37 Robb Hollow Road.
Temple Emanuel – 1250 Bower Hill Road.
General Neville Apartments – 1150 Bower Hill Road.
Brackenridge Apartments – 1160 Bower Hill Road.
Bower Hill #3 Apartments – 1170 Bower Hill Road.
Mainstay Group Home – 1166 Driftwood Drive.
Mainstay Group Home – 1261 Firwood Drive.
Mainstay Group Home – 683 Moreland Drive.
Mainstay Group Home - 675 Oxford Boulevard.
Community Options Group Home – 1244 Pinewood Drive.
U.S. Post Office – 1099 Bower Hill Road.

The moderate risk commercial occupancies include:

- a three-story, 33,750 square foot office building;
- a 13,910 square foot Rite-Aid Pharmacy, and
- a two-story, 3,480 square foot bake shop.

There are **893 moderate risk residential dwellings**. Located in this response zone, the Cedarhurst Manor neighborhood includes the Municipality's largest percentage of population (25.3%) over 65 years of age.

Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical include:

1) Hoover Elementary School – 37 Robb Hollow Road.
2) Samuel Carlisle House – 1409 Bower Hill Road.

The typical or routine non-fire risks include vehicle accidents, hazardous condition calls, service calls, and good intent calls. There is a high frequency of medical emergencies due to Bower Hill Apartments and this zone having the highest percentage of population over the age of 65 years.

There is a **gas transmission facility**, a brick gas house, located at the A/B corner of the Hoover School Property, 37 Robb Hollow Road.

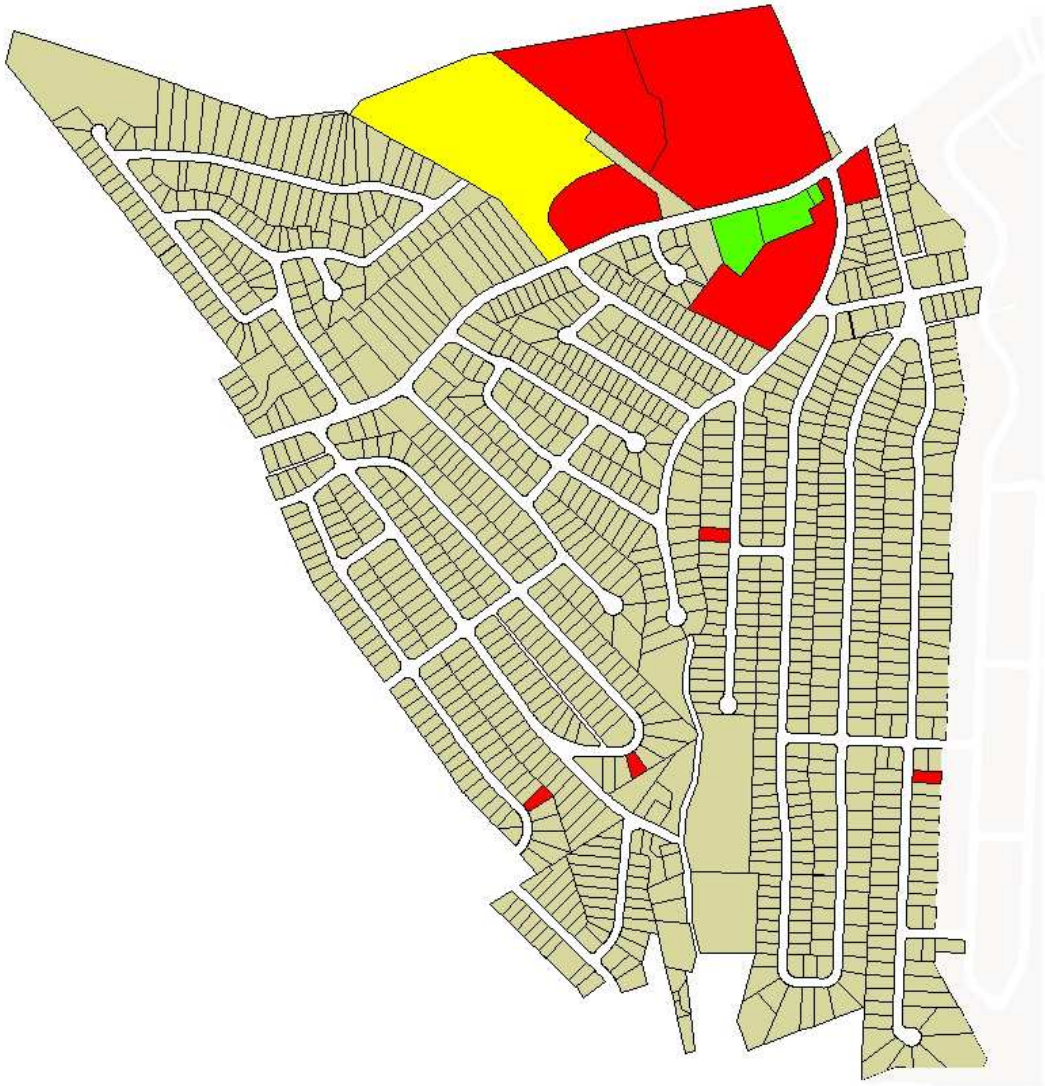
There are no unique or isolated non-fire risks in this response zone.

RESPONSE ZONE 2A

ZONE 2A

RISK HAZARD CLASS

- HIGH
- MEDIUM
- LOW
- SPECIAL
- ZONE 2A



RESPONSE ZONE 2B

Response Zone 2B is bordered by Cedar Boulevard to the West, Upper St. Clair Township to the South, Washington Road to the East, and Cochran Road to the North (Figure 5).

Figure 5: Mt. Lebanon Response Zone 2B

There are three (3) special risk, five (5) high risk, fourteen (14) moderate risk, and no (0) low risk commercial occupancies located within the response zone.

Zone	Special Risk	High Risk	Moderate Risk	Low Risk
2B	3	4	15	0

The special risk commercial occupancies include:

Golden Living – 350 Old Gilkeson Road.
Pines of Mt. Lebanon – 1537 Washington Road.
Galleria Mall – 1500 Washington Road.

The high risk commercial occupancies include:

Markham Elementary School – 165 Crescent Drive.
Holy Cross Greek Orthodox Church – 123 Gilkeson Road.
AMF Lanes – 1601 Washington Road.
Mace Building – 1687 Washington Road.

The moderate risk commercial occupancies include four (4) apartment buildings, one (1) restaurant, two (2) gas stations, six (6) business occupancies, and two commercial occupancies with high combustibility factors:

- **Mattress Discounters** – 1550 Washington Road
- **Mattress World** – 1675 Washington Road

There are **922 moderate risk residential dwellings** located in this response zone.

Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical include:

1) Galleria Mall – 1500 Washington Road
2) Markham Elementary – 165 Crescent Drive

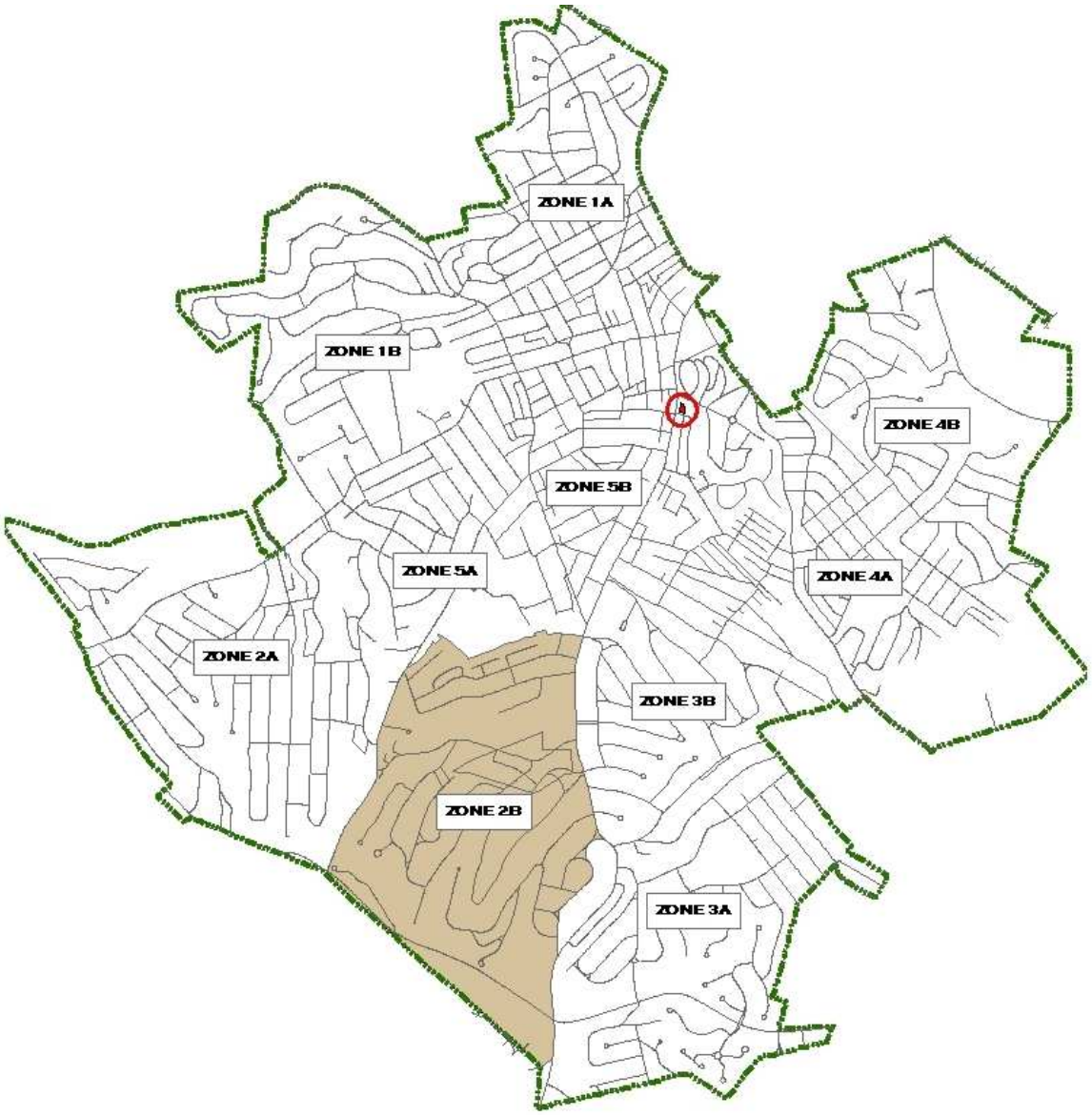
The typical or routine non-fire risks include, hazardous condition calls, service calls, and good intent calls. There is a high frequency of vehicle accidents in this response zone due to the amount of traffic at the Washington Road / Gilkeson Road intersection.

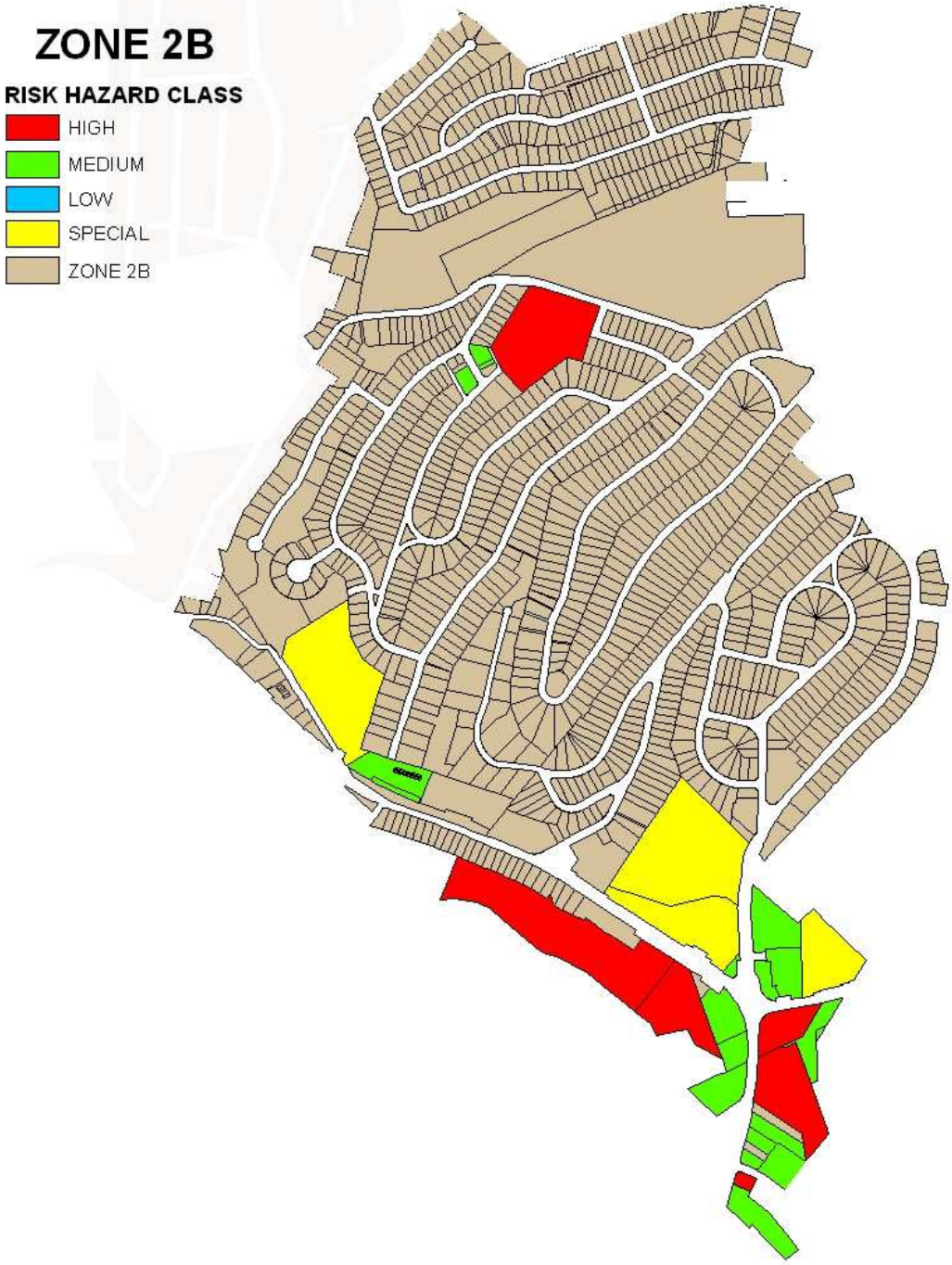
There is an **electrical substation** located in an underground vault in the sidewalk near the Gilkeson Road entrance to the Galleria Mall, 1500 Washington Road.

There are **gas transmission facilities**, a brick gas house, recessed into the hillside adjacent to Gilkeson Road, across from the Gilkeson Road entrance to the Galleria Mall, 1500 Washington Road, and a wooden gas shed at 351 Old Gilkeson Road.

There are no unique or isolated non-fire risks in this response zone.

RESPONSE ZONE 2B




ZONE 2B
RISK HAZARD CLASS
HIGH
MEDIUM
LOW
SPECIAL
ZONE 2B

RESPONSE ZONE 3A

Response Zone 3A is bordered by Washington Road to the West, Bethel Park to the South, and Castle Shannon Borough to the East and North (Figure 6).

Figure 6: Mt. Lebanon Response Zone 3A

There are no (0) special risk, four (4) high risk, four (4) moderate risk, and no (0) low risk commercial occupancies located within the response zone.

Zone	Special Risk	High Risk	Moderate Risk	Low Risk
3A	0	4	4	0

The high risk commercial occupancies include:

Foster Elementary School – 700 Vermont Avenue.
Abbey Woods Apartments – 200 Piper Drive.
Windsor Apartments – 201 Kingsberry Circle.
135 Abbeyville Apartments – 135 Abbeyville Road.

The moderate risk commercial occupancies include three (3) identical Abbeyville apartment buildings (three-story; 4,700 square foot; non-sprinklered; non-combustible; 14-unit) and Joseph A. Bank Clothiers on Connor Road.

There are **948 moderate risk residential dwellings** located in this response zone, including thirty-five (35) three to ten-unit condominiums built in the mid-1980's in the Woodridge Plan. These condominiums are constructed of wood frame with large, open floor plans. Many of the condominiums have no built-in fire protection and house older residents. This area of the Municipality is one of the few areas that the ladder truck responds on a first-due assignment for residential dwellings.

Figure 7: Overhead of Woodridge Plan

Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical include:

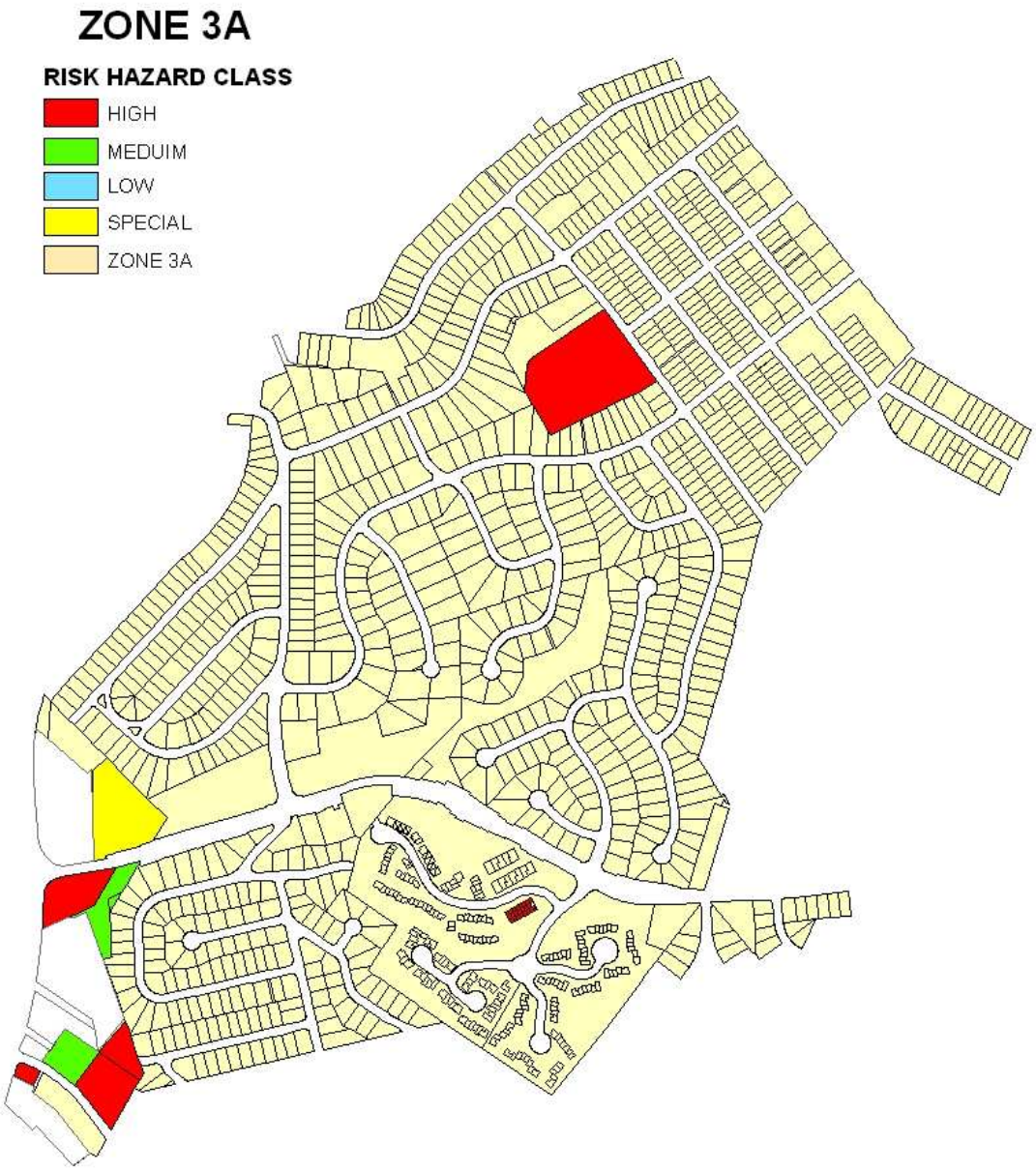
1) Foster Elementary School – 700 Vermont Avenue.
2) Peter Mink House – 811 Rockwood Drive.

The typical or routine non-fire risks include vehicle accidents, hazardous condition calls, service calls, and good intent calls.

There is an **electrical substation**, brick substation, located on Connor Road, between Marshal Drive and Terrace Drive.

There are no unique or isolated non-fire risks in this response zone.

RESPONSE ZONE 3A


ZONE 3A
RISK HAZARD CLASS
HIGH
MEDUIM
LOW
SPECIAL
ZONE 3A

RESPONSE ZONE 3B

Response Zone 3B is bordered by Washington Road to the West, Mt. Lebanon Boulevard to the South and East, and Ashland Avenue to the North (Figure 8).

Figure 8: Mt. Lebanon Response Zone 3B

There are no (0) special risk, five (5) high risk, eight (8) moderate risk, and one (1) low risk commercial occupancies located within the response zone.

Zone	Special Risk	High Risk	Moderate Risk	Low Risk
3B	0	4	8	1

The high risk commercial occupancies include:

Hampshire House Apartments – 195 Mt. Lebanon Boulevard.
Beverly Heights U. P. Church – 1207 Washington Road.
St. Paul's Episcopal Church – 1066 Washington Road.
Unitarian Universalist Church – 1240 Washington Road.

The moderate risk commercial occupancies include a 14,000 square foot Rite Aid Drug Store on Cooke Lane, six (6) three-story apartment buildings on Mt. Lebanon Boulevard, and the First Church of Christ on Washington Road.

There are **779 moderate risk residential dwellings** located in this response zone.

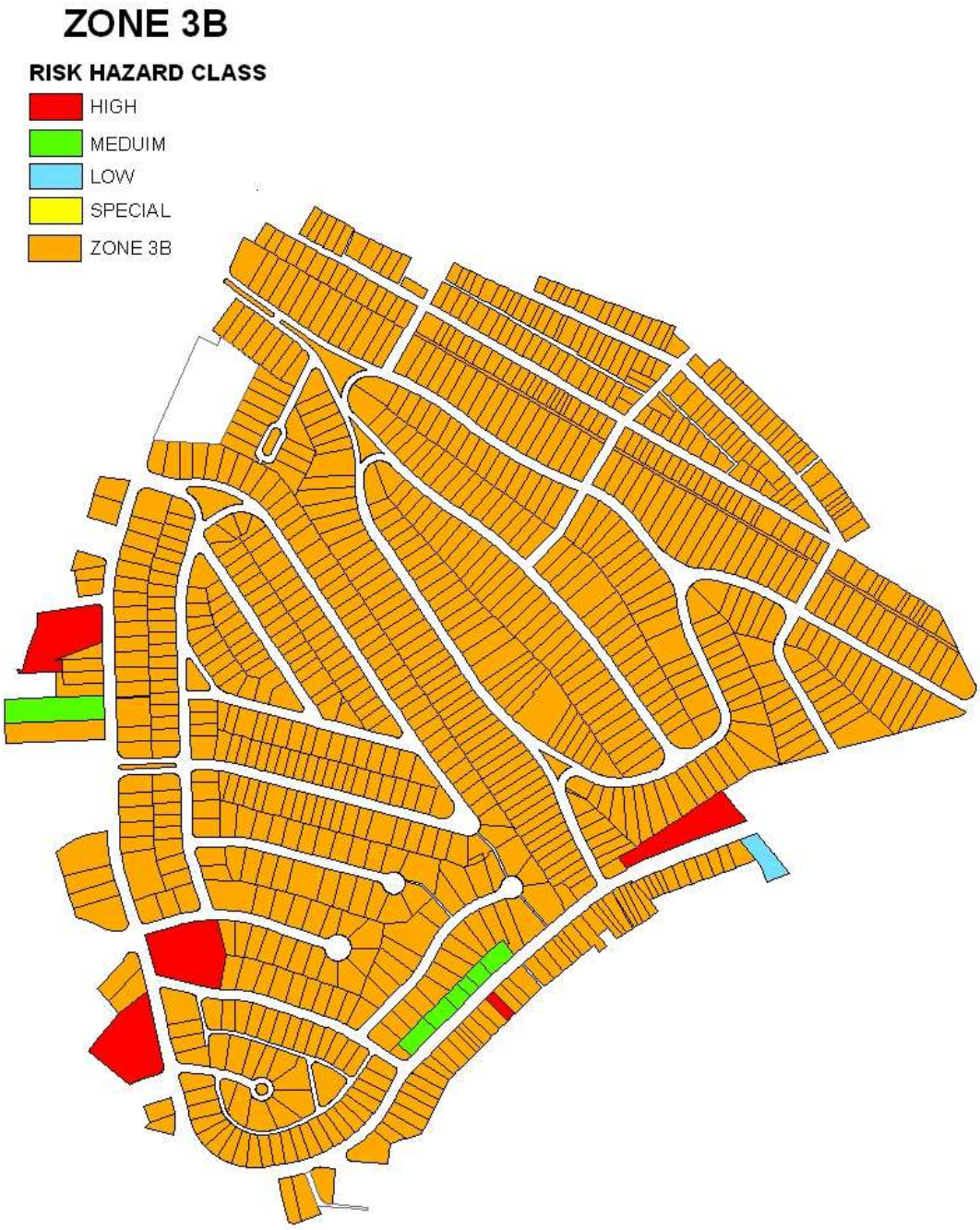
Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical include:

1) Mt. Lebanon Library – 16 Castle Shannon Boulevard.

The typical or routine non-fire risks include vehicle accidents, hazardous condition calls, service calls, and good intent calls.

There are no unique or isolated non-fire risks in this response zone.

RESPONSE ZONE 3B


ZONE 3B
RISK HAZARD CLASS
HIGH
MEDUIM
LOW
SPECIAL
ZONE 3B

RESPONSE ZONE 4A

Response Zone 4A is bordered by Castle Shannon Borough to the West, Ashland Avenue to the South, Mt. Lebanon Cemetery and the Central Business District to the East, and Sleepy Hollow Road to the North (Figure 9).

Figure 9: Mt. Lebanon Response Zone 4A

There are two (2) special risks, seven (7) high risk, forty-one (41) moderate risk, and six (6) low risk commercial occupancies located within the response zone.

Zone	Special Risk	High Risk	Moderate Risk	Low Risk
4A	2	7	41	6

The special risk commercial occupancies include:

Baptist Home – 489 Castle Shannon Boulevard.
Baptist Manor – 493 Castle Shannon Boulevard.

The high risk commercial occupancies include:

Howe Elementary School – 400 Broadmoor Avenue.
Chartiers Group Home – 233 / 235 Castle Shannon Boulevard.
Masterworks Paint Company – 316 Castle Shannon Boulevard.
❖ **Medical Rescue Team South** – 315 Cypress Avenue.
Sunset Hills U.P. Church – 900 Country Club Drive.
Schaffer Interiors – 320 Castle Shannon Boulevard.
Stout Carpeting – 490 Castle Shannon Boulevard.

The moderate risk commercial occupancies include the Mt. Lebanon Library, a two-story, 33,200 square foot, fully-sprinklered library; a 56,550 square foot supermarket; eleven (11) smaller apartment buildings; and twelve small restaurant, business and office buildings primarily located along the Castle Shannon Boulevard corridor.

There are **1,238 moderate risk residential dwellings** located in this response zone.

Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical include:

1) Howe Elementary School – 400 Broadmoor Avenue
2) Medical Rescue Team South – 315 Cypress Avenue

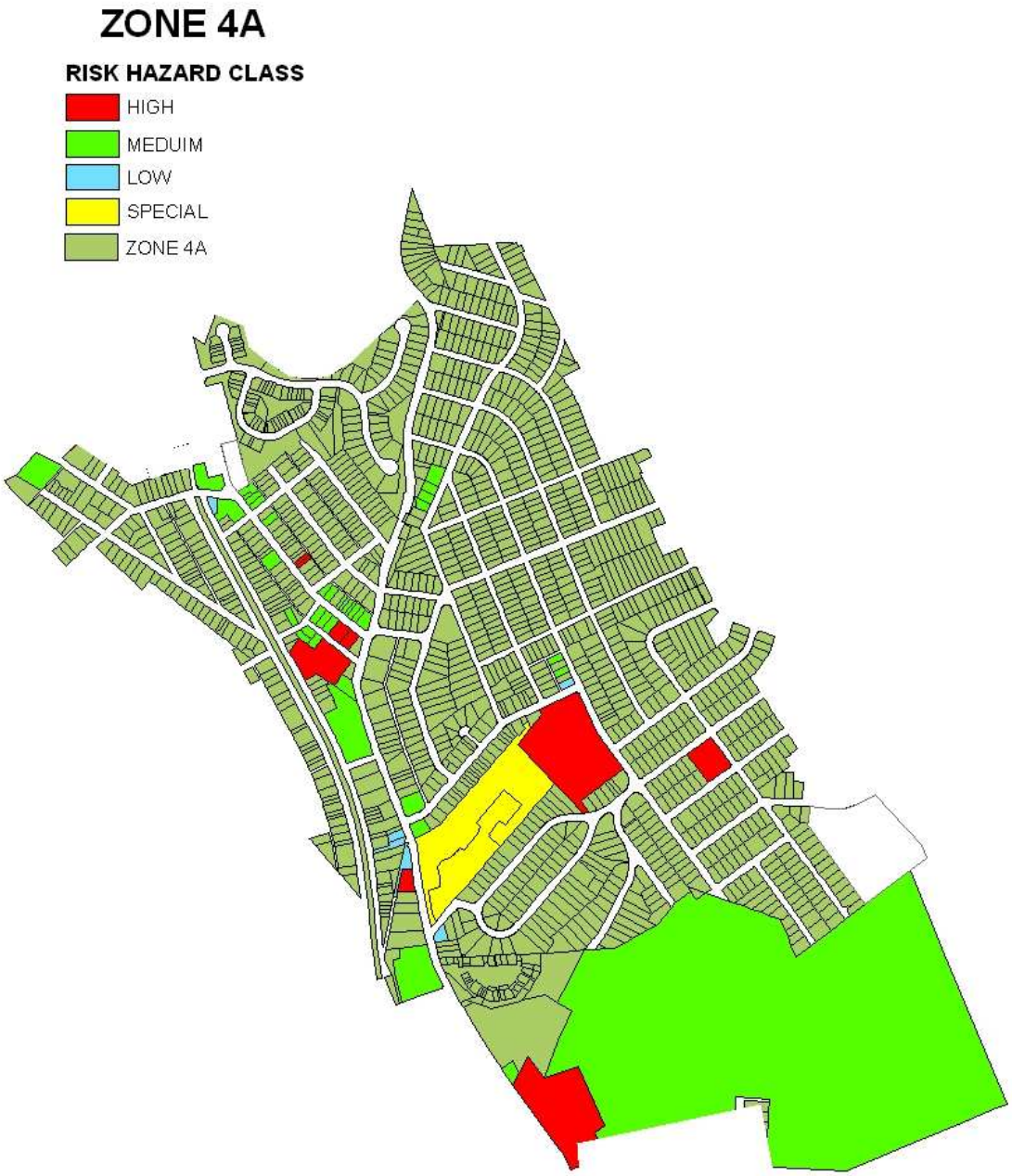
The typical or routine non-fire risks include vehicle accidents, hazardous condition calls, service calls, and good intent calls. There is a moderate frequency of rescue calls at the Golf Course during the winter due to sledding accidents.

There is an **electrical substation**, brick substation, located in the rear of 410 Cooke Lane.

There are **gas transmission facilities**, a wood-frame gas house, located in the ball field at Howe Elementary School, 400 Broadmoor Avenue, and a regulator station enclosed by a chain link fence off the Crystal Drive Entrance to the Baptist Homes, 489 Castle Shannon Boulevard.

There are no unique or isolated non-fire risks in this response zone.

RESPONSE ZONE 4A


ZONE 4A
RISK HAZARD CLASS
HIGH
MEDUIM
LOW
SPECIAL
ZONE 4A

RESPONSE ZONE 4B

Response Zone 4B is bordered by Dormont Borough to the West, Sleepy Hollow Road to the South, Baldwin Township to the East, and the City of Pittsburgh to the North (Figure 10).

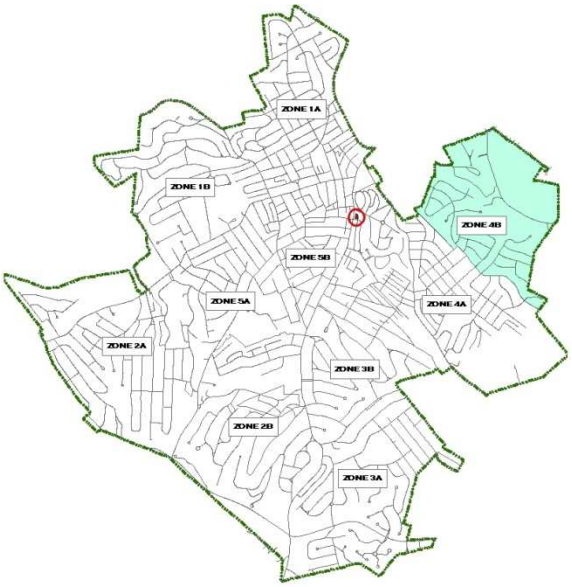


Figure 10: Mt. Lebanon Response Zone 4B

There is one (1) special risk, four (4) high risk, six (6) moderate risk, and no (0) low risk commercial occupancies located within the response zone.

Zone	Special Risk	High Risk	Moderate Risk	Low Risk
4B	1	4	6	0

The special risk commercial occupancies include:

Brookdale of Mt. Lebanon – 1050 McNeilly Road.

The high risk commercial occupancies include:

Mississippi Avenue Group Home – 1068 Mississippi Avenue.
Keystone Oaks Middle / High School – 1000 Kelton Avenue.
Seton LaSalle High School – 1000 McNeilly Road.
St. Winifred's Church / Montessori School – 550 Sleepy Hollow Road.

The moderate risk commercial occupancies include a service station; Our Savior Lutheran Church located at 900 Country Club Drive; the Salvation Army; a two-story, 10,625 square foot office space; Michael Facchiano Contracting; The Salvation Army, and the vacant Depaul Institute Property.

There are **676 moderate risk residential dwellings** located in this response zone.

Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical include:

1) Keystone Oaks High School / Middle School – 1000 Kelton Avenue
2) Seton LaSalle High School – 1000 McNeilly Road
3) Salvation Army Building – 1020 McNeilly Road

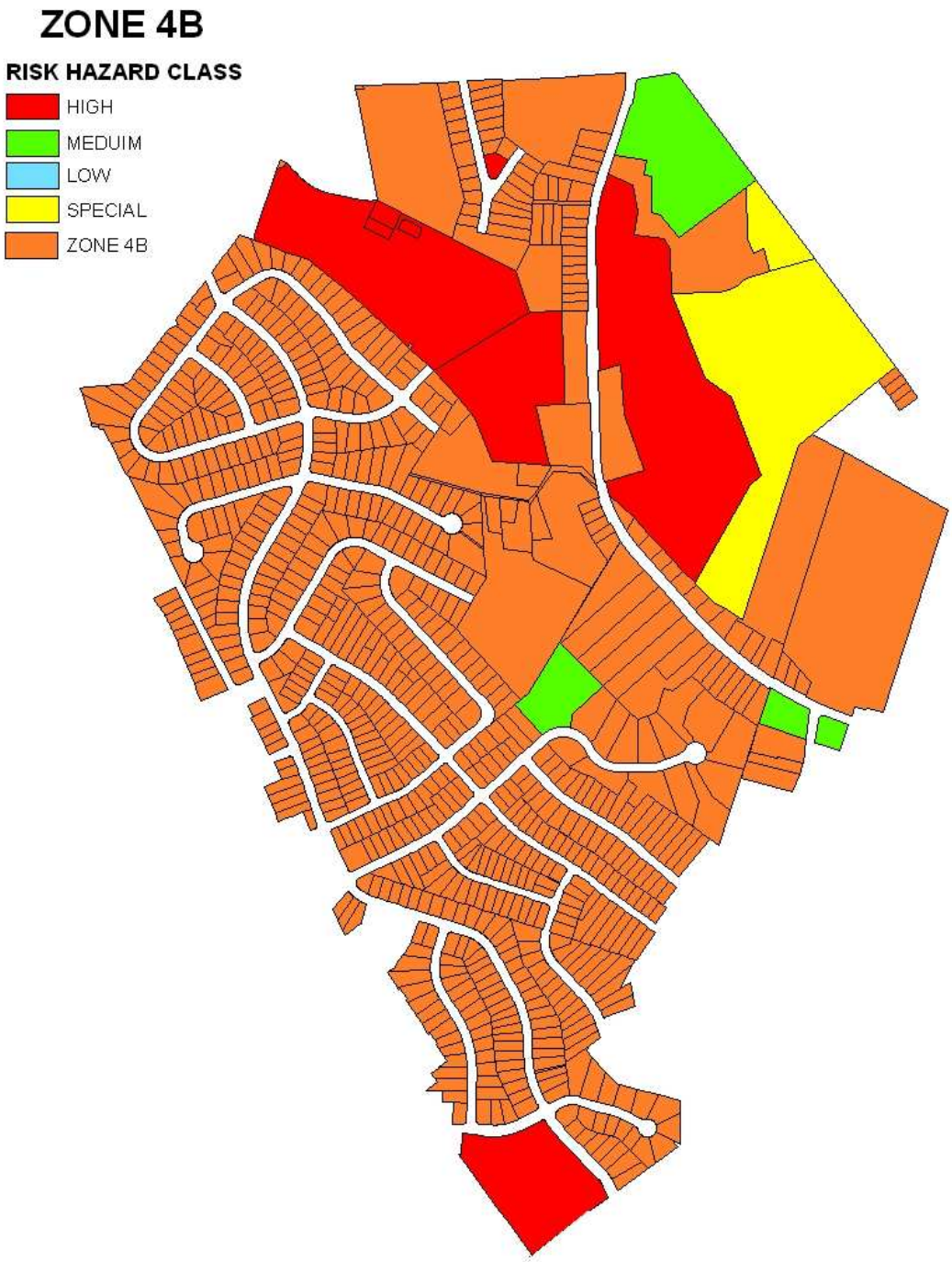
The typical or routine non-fire risks include vehicle accidents, hazardous condition calls, service calls, and good intent calls.

There is an **electrical substation**, a brick transformer enclosure, located at the rear of Keystone Oaks High School, 1000 Kelton Avenue.

There are **gas transmission facilities**, a brick gas house located across from McCormick Lane on the Seton-LaSalle High School Property on McNeilly Road, and a wood-frame gas shed located at the exit driveway on the west end of the Seton-LaSalle High School Property.

There are no unique or isolated non-fire risks in this response zone.

RESPONSE ZONE 4B


ZONE 4B
RISK HAZARD CLASS
HIGH
MEDUIM
LOW
SPECIAL
ZONE 4B

RESPONSE ZONE 5A

Response Zone 5A is bordered by Lakemont Drive to the West, Upper St. Clair Township to the South, Cedar Boulevard to the East, and Cochran Road to the North (Figure 11).

Figure 11: Mt. Lebanon Response Zone 5A

There are no (0) special risk, two (2) high risk, three (3) moderate risk, and no (0) low risk commercial occupancies located within the response zone.

Zone	Special Risk	High Risk	Moderate Risk	Low Risk
5A	0	2	3	0

The high risk commercial occupancies include:

Mt. Lebanon Senior High School – 155 Cochran Road.
Mainstay Group Home – 417 Serrano Drive.

The moderate risk commercial occupancies include two municipal properties that would have an impact on service delivery and quality of life:

Mt. Lebanon Public Works Facility – 1250 Lindendale Drive.
Mt. Lebanon Recreation Center – 900 Cedar Boulevard.

The remaining moderate risk commercial occupancy is a seven-unit, wood frame apartment building located at 1335 Cedar Boulevard. There are **935 moderate risk residential dwellings** located in this response zone.

Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical include:

1) Mt. Lebanon High School – 155 Cochran Road
2) Mt. Lebanon High School Stadium
3) Mt. Lebanon Recreating Center – 900 Cedar Boulevard
4) Mt. Lebanon Public Works Facility – 1250 Lindendale Drive
5) Hugh Jackson House – 1 Orchid Lane

The typical or routine non-fire risks include vehicle accidents, hazardous condition calls, service calls, and good intent calls. There is a high frequency flooding along Cedar Boulevard between Duquesne Drive and Greenridge Drive.

There are **electrical substations**, a prefabricated substation located at Carnegie Drive near Cedar Boulevard, a large transformer vault located in the basement of C-Wing at the Mt. Lebanon High School, 155 Cochran Road.

There are **gas transmission facilities**, a brick gas house located in the rear of A-Wing near Horsman Drive, and Lebanon Avenue at the Mt. Lebanon High School, and an exposed piping providing service to 900 Cedar Boulevard located behind the "Mt. Lebanon Park Sign" on Cedar Boulevard.

The unique or isolated non-fire risk in this response zone includes:

Cedar Lake – Cedar Lake is a 365' long x 200' wide x approximately 4' deep lake bordered by Lindendale Drive to the East, Lakemont Drive to the West, and Lindendale Lane to the South (Figure 12). The lake is owned by the adjoining property owners.

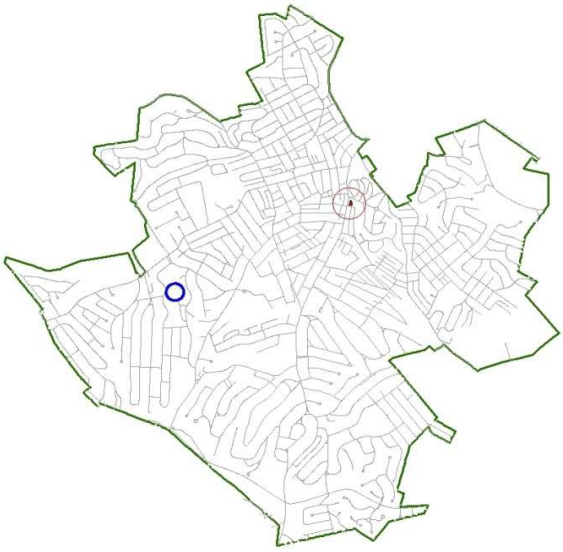


Figure 12: Location of Cedar Lake

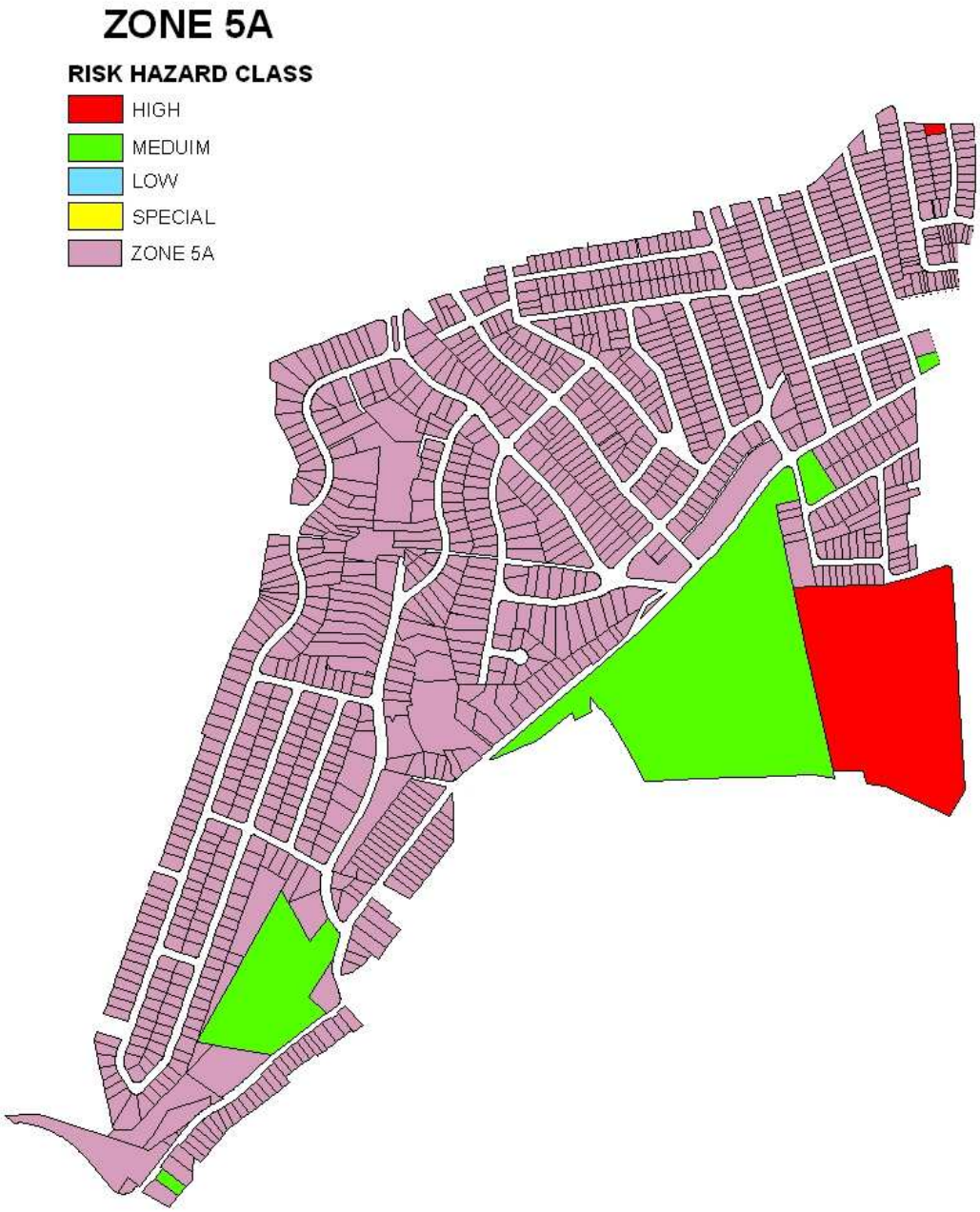
Cedar Lake is a man-made lake, built in the 1930's as a coal washing facility. An underflow damn is located at the southern end of the lake that directs water into the creek leading to the Painters Run Watershed. The lake is fed by two springs on the northern end. The deepest part of the lake is approximately 6' deep in the center. There is also a sealed mine shaft on the lake bottom near the center.

Figure 13: Overhead of Cedar Lake

The probability and consequence of an incident at the lake are low as the lake is private and the adjoining residents do a god job of keeping people from trespassing. There has only been one incident response to the lake over the previous ten-year period which was related to an underflow damn being clogged causing the lake to rise to a potential overflow level. The lake has been inspected by municipal engineers for the threat of flooding or breaking. The engineer's assessment is that there is no threat of such an occurrence.

If there were such a break, the lake's estimated capacity of 2,184,160 gallons would overflow the creek and cause flooding to homes on Lindendale Lane and to the Public Works Facility, prior to emptying into Painters Run. The topography of other structures down creek from the lake should keep them from being damaged.

RESPONSE ZONE 5A


ZONE 5A
RISK HAZARD CLASS
HIGH
MEDUIM
LOW
SPECIAL
ZONE 5A

RESPONSE ZONE 5B

Response Zone 5B is bordered by Cochran to the West, Mt. Lebanon Cemetery and the Central Business District to the East, and Dormont Borough to the North (Figure 14).

Figure 14: Mt. Lebanon Response Zone 5B

There are four (4) special risk, twenty-two (22) high risk, one hundred fifty-four (154) moderate risk, and zero (0) low risk commercial occupancies located within the response zone.

Zone	Special Risk	High Risk	Moderate Risk	Low Risk
5B	4	23	154	0

The special risk commercial occupancies include:

Twin Towers – 314 Washington Road.
Pendale Towers – 460 Washington Road.
Lebanon House – 520 Washington Road.
Washington Square – 750 Washington Road.

The high risk commercial occupancies include:

Washington Elementary School – 735 Washington Road.
Mellon Middle School – 11 Castle Shannon Boulevard.
Mainstay Group Home – 201 Bower Hill Road.
Southwinds Group Home – 40 Academy Avenue.
Three Rivers Youth Group Home – 253/255 Academy Avenue.
Mt. Lebanon Public Safety Building – 555 Washington Road.
Mt. Lebanon Municipal Building – 710 Washington Road.
Mt. Lebanon U. P. Church – 255 Washington Road.
St. Bernard's Church – 311 Washington Road.
Southminster Church – 799 Washington Road.
Finders Keepers – 431 Cochran Road.
Springhill Suites – 608 Washington Road.

Eleven (11) larger apartment buildings with 25 or more living units:

Address	Floors	Area	Units	Construction	NFF
44 Academy Ave.	5	111,575	32	Limited Combustible	3,500
50 Academy Ave.	4	59,080	25	Limited Combustible	3,000
100 Academy Ave.	5	28,500	48	Limited Combustible	2,000
15 Bower Hill Rd.	10	150,120	57	Non-combustible	3,500
200 Buchannan	4	59,080	37	Limited Combustible	2,250
400 Cochran Rd.	8	75,390	71	Non-combustible	2,500
440 Cochran Rd.	4	32,120	33	Non-combustible	1,250
1425 McFarland	6	30,240	51	Non-combustible	1,750
300 Washington	7	43,820	51	Fire Resistive	1,500
318 Washington	4	26,790	43	Non-combustible	2,000
900 Washington	4	121,660	61	Fire Resistive	2,500

The moderate risk commercial occupancies include seventy apartment buildings, a hotel and fifty-eight commercial properties, mainly located in the Central and Cochran Road business districts.

There are **1,028 moderate risk residential dwellings** located in this response zone.

Critical assets, which if destroyed, would be a critical or essential economic loss to the community, including cultural, environmental, or historical include:

1) Mt. Lebanon Municipal Building – 710 Washington Road
2) Mt. Lebanon Public Safety Center – 555 Washington Road
3) Central Business District – 600 to 740 Washington Road
4) Mt. Lebanon U.P. Church – 255 Washington Road
5) St. Bernard's Church – 311 Washington Road
6) Washington Elementary School – 735 Washington Road
7) Southminster Church – 799 Washington Road
8) Mellon Middle School – 11 Castle Shannon Boulevard
9) Cemetery Gatehouse – 509 Washington Road
10) McCormick House – 424 Kenmont Drive

The typical or routine non-fire risks include vehicle accidents, hazardous condition calls, service calls, and good intent calls.

There are **electrical substations**, underground vaults located in the sidewalk at the corner of Florida Avenue and Cedar Boulevard for 615 Washington Road, and at 712 Washington Road.

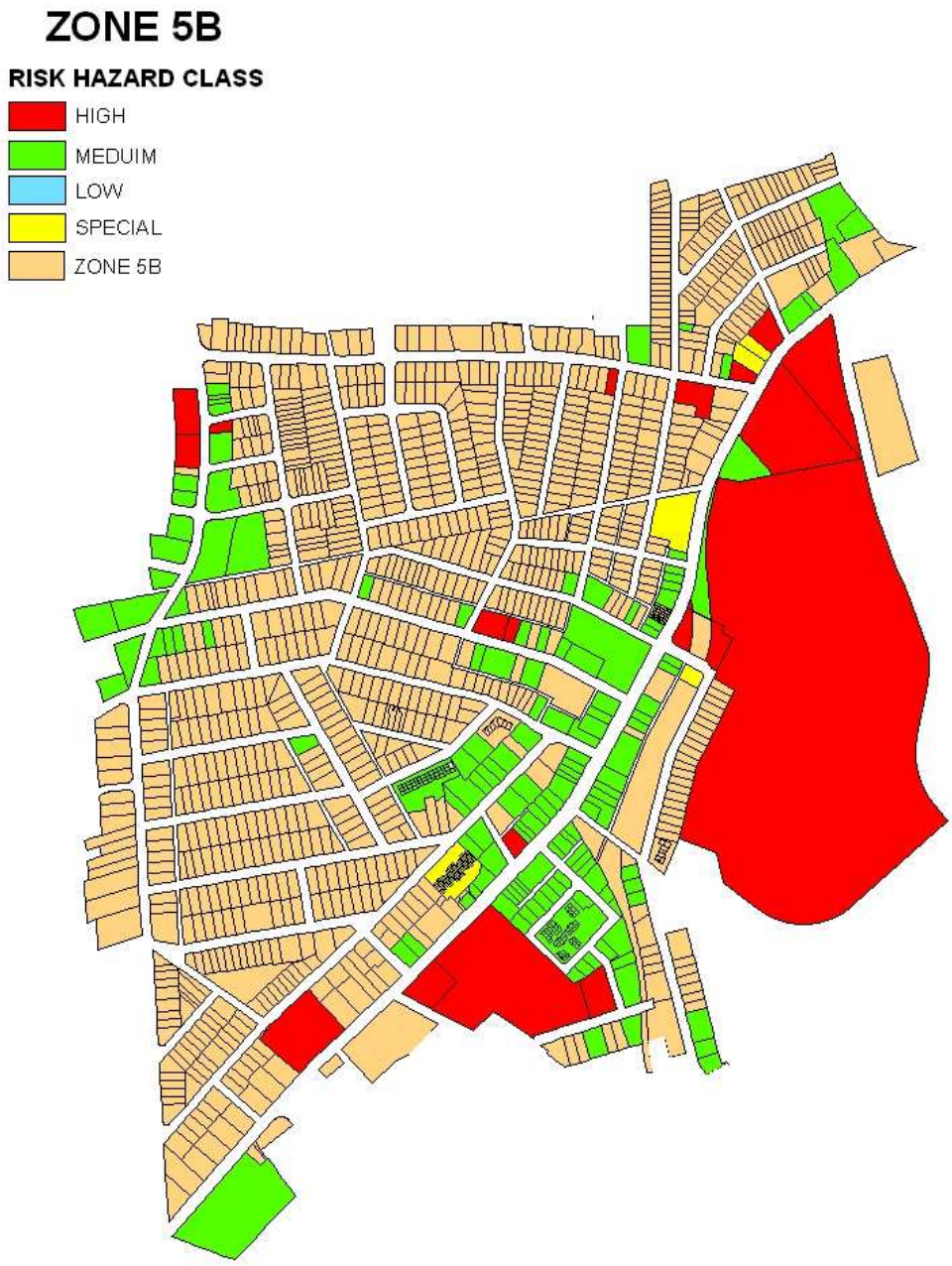
There is a **gas transmission facility**, an underground vault beneath the ball field, located at Mellon School, 11 Castle Shannon Boulevard.

The unique or isolated non-fire risk in this response zone includes:

Port Authority LRT Tunnel – 606 Shady Drive East. The Port Authority LRT travels under Mt. Lebanon via a 0.6 mile underground tunnel, exiting in Dormont at the Dormont Junction near McFarland Road (Figure 16). The tunnel is equipped with a smoke evacuation system, a standpipe system, and a methane monitoring system. Approximately 22,000 passengers per day travel through this tunnel to and from the City of Pittsburgh. The fire department has established a specific set of operational guidelines to address incidents that may occur in the tunnel.

Figure 16: Mt. Lebanon LRT Route and Tunnel

RESPONSE ZONE 5B


ZONE 5B
RISK HAZARD CLASS
HIGH
MEDUIM
LOW
SPECIAL
ZONE 5B

Appendix B
Mt. Lebanon
Fire Department
Alarm Assignments

Mt. Lebanon Fire Department
Alarm Assignments
ZONE 1A
Allegheny County 911 Zone 1

Alarm	Residential	Commercial
1st Alarm	Mt. Lebanon (198) –Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Glendale (257) – 1 Engine to Scene	Mt. Lebanon – (198) – Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Glendale (257) - 1 Engine to Scene
2nd Alarm	Castle Shannon (119) - 1 Engine to Scene Bethel Park (110) – Go-Team Bower Hill (255) – Station Fill	Castle Shannon (119) – Truck to Scene Bethel Park (110) – Go-Team Bower Hill – 1 Engine to Scene Upper St. Clair – Station Fill
3rd Alarm	Bower Hill (255) – 1 Engine to Scene East Carnegie (256) – 1 Engine to Scene Green Tree (163) – 1 Engine to Scene Upper St. Clair (284) – Station Fill	Upper St. Clair – 1 Engine to Scene Green Tree (163) – Truck to Scene Kirwin Heights (124) – Go-Team MRTSA (780) - Rehab Whitehall (301) – Station Fill
4th Alarm	Upper St. Clair (284) – 1 Engine to Scene Heidelberg (170) – 1 Engine to Scene Kirwin Heights (124) – 1 Engine to Scene Whitehall (301) – Station Fill	Whitehall – 1 Engine to Scene Heidelberg (170) - 1 Engine to Scene East Carnegie (256) – Rescue to Scene N. Strabane Twp. (378) & Pleasant Hills (232) Command Bridgeville (117) – Station Fill
5th Alarm		Bridgeville (117) – 1 Engine to Scene Brentwood (116) – 1 Engine to Scene County (400) – Command S. Baldwin (104) – Station Fill

Mt. Lebanon Fire Department
Alarm Assignments
ZONE 1B
Allegheny County 911 Zone 6

Alarm	Residential	Commercial
1st Alarm	Mt. Lebanon –Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Bower Hill (255) – 1 Engine to Scene	Mt. Lebanon – Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Bower Hill (255) – 1 Engine to Scene
2nd Alarm	Glendale (257) - 1 Engine to Staging Bethel Park (110) – Go-Team Castle Shannon (119) – Station Fill	Castle Shannon (119) - Truck to Scene Glendale (257) – 1 Engine to Scene Bethel Park (110) – Go Team Upper St. Clair (284) – Station Fill
3rd Alarm	Castle Shannon (119)– 1 Engine to Scene Kirwin Heights (124) – 1 Engine to Scene Upper St. Clair (284) – 1 Engine to Scene Bridgeville (117) – Station Fill	Upper St. Clair (284) – Truck to Scene Heidelberg (170) – 1 Engine to Staging Kirwin Heights (124) – Go-Team MRTSA (780) - Rehab Whitehall (301) – Station Fill
4th Alarm	Bridgeville (117) – 1 Engine to Scene Heidelberg (170) – 1 Engine to Scene East Carnegie (256) – 1 Engine to Scene Whitehall (301) – Station Fill	Bridgeville (117) – Rescue to Scene Whitehall (301) – 1 Engine to Scene Presto (125) – 1 Engine to Scene N. Strabane Twp. (378) & Pleasant Hills (232) Command East Carnegie (256) – Station Fill
5th Alarm		East Carnegie (256) – 1 Engine to Scene Green Tree (163) – Truck to Scene County (400) Command S. Baldwin (104) – Station Fill

Mt. Lebanon Fire Department
Alarm Assignments
ZONE 2A
Allegheny County 911 Zone 2

Alarm	Residential	Commercial
1st Alarm	Mt. Lebanon –Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Bower Hill (255) – 1 Engine to Scene	Mt. Lebanon – Engine, Truck, Deputy Dormont (130) – 1 Engine to Staging Bower Hill (255) – 1 Engine to Scene
2nd Alarm	Upper St. Clair (284) – 1 Engine to Scene Bethel Park (110) – Go-Team Castle Shannon (119) – Station Fill	Castle Shannon (119) – Truck to Scene Bethel Park (110) – Go-Team Upper St. Clair – 1 Engine to Scene Glendale (257) – Station Fill
3rd Alarm	Castle Shannon (119) – 1 Engine to Scene Bridgeville (117) – 1 Engine to Scene Kirwin Heights (124) –1 Engine to Scene Glendale (257) – Station Fill	Glendale (257) –Truck to Scene Kirwin Heights (124) – 1 Engine to Scene Green Tree (163) – Go Team MRTSA (780) – Rehab Whitehall (301) –Station Fill
4th Alarm	Glendale (257) – 1 Engine to Scene Heidelberg (170) – 1 Engine to Scene Presto (125) – 1 Engine to Scene East Carnegie (256) Station Fill	Whitehall (301) – 1 Engine to Scene Bridgeville (117) –Rescue to Scene Heidelberg (170) – 1 Engine to Scene N. Strabane Twp. (378) & Pleasant Hills (232) Command Presto (125) – 1 Station Fill
5th Alarm		Presto (125) – 1 Engine to Scene East Carnegie (256) – 1 Engine to Scene County (400) Command Brentwood (104) – Station Fill

Mt. Lebanon Fire Department
Alarm Assignments
ZONE 2B
Allegheny County 911 Zone 7

Alarm	Residential	Commercial
1st Alarm	Mt. Lebanon – Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Upper St. Clair (284) – 1 Engine to Scene	Mt. Lebanon – Engine, Truck, Deputy Dormont (130) – 1 Engine to Staging Upper St. Clair (284) – 1 Engine to Scene
2nd Alarm	Castle Shannon (119) – 1 Engine to Scene Bethel Park (110) – Go Team Bower Hill (255) – Station Fill	Castle Shannon (119) – Truck to Scene Bethel Park (110) – Go-Team Bower Hill (255) – 1 Engine to Scene Glendale (257) – Station Fill
3rd Alarm	Bower Hill (255) – 1 Engine to Scene Bridgeville (117) – 1 Engine to Scene Kirwin Heights (124) – Go-Team Whitehall (301) – Station Fill	Glendale (257) – 1 Engine to Scene Whitehall (301) – Truck to Scene Kirwin Heights (124) Go Team MRTSA (780) – Rehab E. Carnegie (257) – Station Fill
4th Alarm	Whitehall (301) – 1 Engine to Scene Glendale (257) – 1 Engine to Scene S. Baldwin (104) – Station Fill	E. Carnegie (256) – Engine to Scene Bridgeville (117) – Rescue to Scene Heidelberg (170) – 1 Engine to Scene N. Strabane Twp. (378) & Pleasant Hills (232) Command Presto (125) - Station Fill
5th Alarm		Presto (125) – 1 Engine to Scene S. Baldwin (104) – 1 Engine to Scene County (400) Command Green Tree (163) – Station Fill

Mt. Lebanon Fire Department

Alarm Assignments

Zone 3A

Allegheny County 911 Zone 3

Alarm	Residential	Commercial
1st Alarm	Mt. Lebanon – Truck. Engine, Deputy Dormont (130) – 1 Engine to Scene Castle Shannon (119) – 1 Engine to Scene	Mt. Lebanon –Engine, Truck, Deputy Castle Shannon (119) – 1 Engine to Scene Dormont (130) – 1 Engine to Scene
2nd Alarm	Upper St. Clair (284) – 1 Engine to Scene Bethel Park (110) – Go-Team Bower Hill – Station Fill	Upper St. Clair (284) –Truck to Scene Bethel Park (110) – Go Team Bower Hill – 1 Engine to Scene Whitehall (301) – Station Fill
3rd Alarm	Bower Hill (255) – 1 Engine to Scene Whitehall (301) – 1 Engine to Scene Kirwin Heights (124) – 1 Engine to Scene S. Baldwin (104) – Station Fill	Whitehall (301) – 1 Engine to Scene Castle Shannon (119) – Truck to Scene Kirwin Heights (124) – Go Team MRTSA (780) - Rehab Glendale (257) – Station Fill
4th Alarm	S. Baldwin (104) – 1 Engine to Scene Bridgeville (117) – 1 Engine to Scene Broughton (270) – 1 Engine to Scene Glendale (257) – Station Fill	Glendale (257) – 1 Engine to Scene S. Baldwin (104) – 1 Engine to Scene Bridgeville (117) - Rescue to Scene N. Strabane Twp. (378) & Pleasant Hills (232) Command Green Tree (163) – Station Fill
5th Alarm		Green Tree – 1 Engine to Scene E. Carnegie – 1 Engine to Scene County (400) – Command Presto (125) – Station Fill

Mt. Lebanon Fire Department

Alarm Assignments

Zone 3B

Allegheny County 911 Zone 8

Alarm	Residential	Commercial
1st Alarm	Mt. Lebanon – Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Castle Shannon (119) – 1 Engine to Scene	Mt. Lebanon – Engine, Truck, Deputy Dormont (130) - 1 Engine to Scene Castle Shannon (119) – 1 Engine to Scene
2nd Alarm	Bethel Park (110) – Go Team Upper St. Clair (284) – 1 Engine to Scene Bower Hill (255) – Station Fill	Upper St. Clair (284) – Truck to Scene Bethel Park (110) – Go Team Bower Hill (255) – Station Fill Whitehall (301) – Station Fill
3rd Alarm	Bower Hill (255) – 1 Engine to Scene Whitehall (301) – 1 Engine to Scene Kirwin Heights (124) – 1 Engine to Scene Bridgeville- Station Fill	Whitehall (301) – Truck to Scene Bridgeville (117) - 1 Engine to Scene Kirwin Heights (124) – Go Team MRTSA (780) – Rehab S. Baldwin (104) – Station Fill
4th Alarm	Bridgeville (117) – 1 Engine to Scene Glendale (257) – 1 Engine to Scene Heidelberg (170) – 1 Engine to Scene Presto (125) – Station Fill	S. Baldwin (104) – 1 Engine to Scene Glendale (257) – 1 Engine to Scene Pleasant Hills (232) – Rescue to Scene N. Strabane Twp. (378) & Pleasant Hills (232) Command E. Carnegie (256) – Station Fill
5th Alarm		E. Carnegie (256) – 1 Engine to Scene Heidelberg (170) – 1 Engine to Scene County (400) Command Presto (125) – Station Fill

Mt. Lebanon Fire Department

Alarm Assignments

Zone 4A

Allegheny County 911 Zone 4

Alarm	Residential	Commercial
1st Alarm	Mt. Lebanon –Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Castle Shannon (119) – 1 Engine to Scene	Mt. Lebanon – 3 Engines, Truck, Rescue, Utility, Emergency Mgt. Unit Dormont (130) – 1 Engine to Scene Upper St. Clair (284) – 1 Engine to Scene
2nd Alarm	Upper St. Clair (284) – 1 Engine to Scene Bethel Park (110) – Go-Team Bower Hill (255) – Station Fill	Castle Shannon (119) – Truck to Scene Bethel Park (110) – Go Team Bower Hill (255) – Station Fill
3rd Alarm	Bower Hill (255) – 1 Engine to Scene Whitehall (301) – 1 Engine to Scene Glendale (257) – 1 Engine to Scene Kirwin Heights (124) – Station Fill	Bower Hill (255) – 1 Engine to Scene Whitehall (301) – Truck to Scene Kirwin Heights (124) – Go Team MRTSA (780) – Rehab Glendale (257) – 1 Station Fill
4th Alarm	Kirwin Heights (124) - 1 Engine to Scene Brentwood (116) – 1 Engine to Scene Bridgeville (117) - 1 Engine to Scene East Carnegie (256) – Station Fill	Glendale (257) – 1 Engine to Scene East Carnegie (256) – 1 Engine to Scene Bridgeville (117) – Rescue to Scene N. Strabane Twp. (378) & Pleasant Hills (232) Command S. Baldwin (104) – Station Fill
5th Alarm		S. Baldwin (104) – 1 Engine to Scene Green Tree (163) – 1 Engine to Scene County (400) - Command Presto (125) – Station Fill

Mt. Lebanon Fire Department
Alarm Assignments
Zone 4B
Allegheny County 911 Zone 9

Alarm	Residential	Commercial
1st Alarm	Mt. Lebanon – Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Castle Shannon (119) – 1 Engine to Scene	Mt. Lebanon – Engine, Truck, Rescue Dormont (130) – 1 Engine to Scene Castle Shannon (119) – 1 Engine to Scene
2nd Alarm	Whitehall (301) – 1 Engine to Scene Bethel Park (110) – Go-Team Upper St. Clair (284) – Station Fill	Whitehall (301) – Truck to Scene Bethel Park (110) – Go-Team Upper St. Clair (284) – 1 Engine to Scene Glendale (257) – Station Fill
3rd Alarm	Upper St. Clair (284) – 1 Engine to Scene Green Tree (163) – 1 Engine to Scene Kirwin Heights (124) – 1 Engine to Scene Bower Hill (255) – Station Fill	Glendale (257) – 1 Engine to Scene Green Tree (163) – Truck to Scene Kirwin Heights (124) – Go Team MRTSA (780) – Rehab Bower Hill (255) – Station Fill
4th Alarm	Bower Hill (255) – 1 Engine to Scene Glendale (257) – 1 Engine to Scene East Carnegie (256) – 1 Engine to Scene S. Baldwin (104) – Station Fill	Bower Hill (255) – 1 Engine to Scene E. Carnegie (256) – Rescue to Scene Brentwood (116) – 1 Engine to Scene N. Strabane Twp. (378) & Pleasant Hills (232) Command Heidelberg (170) – Station Fill
5th Alarm		Heidelberg (170) – 1 Engine to Scene Pleasant Hills (232) – Truck to Scene County (400) Command S. Baldwin (104) – Station Fill

Mt. Lebanon Fire Department

Alarm Assignments

Zone 5A

Allegheny County 911 Zone 5

Alarm	Residential	Commercial
1st Alarm	Mt. Lebanon – Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Castle Shannon (119) – 1 Engine to Scene	Mt. Lebanon – Engine, Truck, Deputy Dormont (130) – 1 Engine to Scene Castle Shannon (119) –1 Engine to Scene
2nd Alarm	Upper St. Clair (284) – 1 Engine to Scene Bethel Park (110) – Go-Team Glendale (257) – Station Fill	Upper St. Clair (284) – Truck to Scene Glendale (257) – 1 Engine to Scene Bethel Park (110) – Go-Team Bower Hill (255) – Station Fill
3rd Alarm	Glendale (257) – 1 Engine to Scene Bower Hill (255) – 1 Engine to Scene Kirwin Heights (124) – 1 Engine to Scene Bridgeville (117) – Station Fill	Bower Hill (255) – 1 Engine to Scene Kirwin Heights (124) – Go Team Green Tree (163) – Truck to Scene MRTSA (780) – Rehab Bridgeville (117) – Station Fill
4th Alarm	Bridgeville (117) – 1 Engine to Scene Heidelberg (170) – 1 Engine to Scene Whitehall (301) – 1 Engine to Scene East Carnegie (256) – Station Fill	Bridgeville (117) –1 Engine to Scene Heidelberg (170) – 1 Engine to Scene Whitehall (301) – rescue to Scene N. Strabane Twp. (378) & Pleasant Hills (232) Command East Carnegie (256) – Station Fill
5th Alarm		East Carnegie (256) – 1 Engine to Scene S. Baldwin (104) – 1 Engine to Scene County (400) Command Presto (125) – Station Fill

Mt. Lebanon Fire Department

Alarm Assignments

Zone 5B

Allegheny County 911 Zone 10

Alarm	Residential	Commercial
1st Alarm	Mt. Lebanon – Truck, Engine, Deputy Dormont (130) – 1 Engine to Scene Castle Shannon (119) – 1 Engine to Scene	Mt. Lebanon – Engine, Truck, Deputy Dormont (130) – 1 Engine to Scene Castle Shannon (119) – 1 Engine to Scene
2nd Alarm	Upper St. Clair (284) – 1 Engine to Scene Bethel Park (110) – Go-Team Bower Hill (255) – Station Fill	Upper St. Clair (284) – Truck to Scene Bethel Park (110) – Go-Team Bower Hill (255) – 1 Engine to Scene Glendale (257) – Station Fill
3rd Alarm	Bower Hill (255) – 1 Engine to Scene Glendale (257) – 1 Engine to Scene Whitehall (301) – 1 Engine to Scene Kirwin Heights (124) – Station Fill	Glendale (257) – 1 Engine to Scene Whitehall (301) – Truck to Scene Green Tree (163) – Go Team MRTSA (780) – Rehab Kirwin Heights (124) – Station Fill
4th Alarm	Kirwin Heights (124) – 1 Engine to Scene Bridgeville (117) – 1 Engine to Scene Green Tree (163) – 1 Engine to Scene East Carnegie (256) – Station Fill	Kirwin Heights (124) – 1 Engine to Scene Heidelberg (170) – 1 Engine to Scene East Carnegie (256) – Rescue to Scene N. Strabane Twp. (378) & Pleasant Hills (232) Command S. Baldwin (104) – Station Fill
5th Alarm		S. Baldwin (104) – 1 Engine to Scene Presto (125) – 1 Engine to Scene County (400) - Command Bridgeville (117) – Station Fill

Mt. Lebanon Fire Department

PAT Tunnel

Alarm	Zones 1, 2 & 5
1st Alarm	Mt. Lebanon – 1 Engine, Rescue to MTL Port Castle Shannon (119) – 1 Engine to MTL Port Upper St. Clair (284) – Rescue to MTL Port Bethel Park (110) – Go Team to MTL Port Dormont (130) – 1 Engine to Dormont Port Whitehall (301) – 1 Engine to Dormont Port Kirwin Heights (124) – Go Team to Dormont Port MRTSA (780) - Rehab
2nd Alarm	SHACOG Technical Rescue Team (385) Pleasant Hills (232) – Rescue Peters Twp. (361) – Rescue Bower Hill (255) – 1 Engine Glendale (257) – 1 Engine County (400) Command
3rd Alarm	East Carnegie (256) – Rescue Green Tree (163) – 1 Engine Heidelberg (170) – 1 Engine Bridgeville (117) – Rescue Presto (125) – Station Fill

Technical Rescue Incidents – No Alarms Pre-Set, Units by Request

Alarm	Zones 1, 2 & 5	Zones 3 & 4
Full Alarm	Mt. Lebanon – 1 Engine, Rescue, Truck, Utility	Mt. Lebanon – 1 Engine, Rescue, Truck, Utility
2nd Alarm	SHACOG Technical Rescue Team (385)	SHACOG Technical Rescue Team (385)
3rd Alarm	Dormont (130) – 1 Engine, Squad Upper St. Clair (284) - Rescue Peters Twp. (361) – Rescue Bethel Park (110) – Truck Incident Management Team Castle Shannon – Station Fill	Castle Shannon (119) – 1 Engine, Squad Upper St. Clair (284) – Rescue Peters Twp. (361) – Rescue Bethel Park (110) – Truck Incident Management Team Dormont (130) – Station Fill
4th Alarm	Castle Shannon (119) – 1 Engine to Scene Kirwin Heights (124) – 1 Engine Bridgeville (117) - Rescue Bethel Park (110) – Rescue Whitehall (301) – Station Fill	Dormont (130) – 1 Engine to Scene Whitehall (301) – 1 Engine Bridgeville (117) - Rescue Bethel Park (110) – Rescue Kirwin Heights (124) – Station Fill
As Requested	PA Strike Team – 1	PA Strike Team - 1

Water / Ice / Dive Rescue

Alarm	Zones 1, 2 & 5	Zones 3 & 4
Full Alarm	Mt. Lebanon – 1 Engine, Rescue, Truck, Utility	Mt. Lebanon – 1 Engine, Rescue, Truck, Utility
2nd Alarm	SHACOG Technical Rescue Team (385) Peters Twp. (361) – Rescue / Boat Pittsburgh EMS - Rescue	SHACOG Technical Rescue Team (385) Peters Twp. (361) – Rescue / Boat Pittsburgh EMS - Rescue

Hazardous Materials / WMD

Alarm	Zones 1, 2 & 5	Zones 3 & 4
Full Alarm	Mt. Lebanon – 1 Engine, Rescue, Truck, Utility	Mt. Lebanon – 1 Engine, Rescue, Truck, Utility
2nd Alarm	Allegheny County Hazardous Materials Team	Allegheny County Hazardous Materials Team
3rd Alarm	PA – Strike Team 1	PA – Strike Team - 1

Mt. Lebanon Fire Department
Incident Management Team

The Incident Management Team will be activated automatically upon striking a third alarm on a commercial structure or at the request of the Incident Commander. The Incident Management Team will consist of senior officers (Captain rank or above) that will respond directly to the incident to support the Mt. Lebanon Incident Management Structure and to fill incident management and support roles.

3rd Alarm - Incident Management Team Activation

N. Strabane Township (Washington County) Fire Department
Pleasant Hills Fire Department

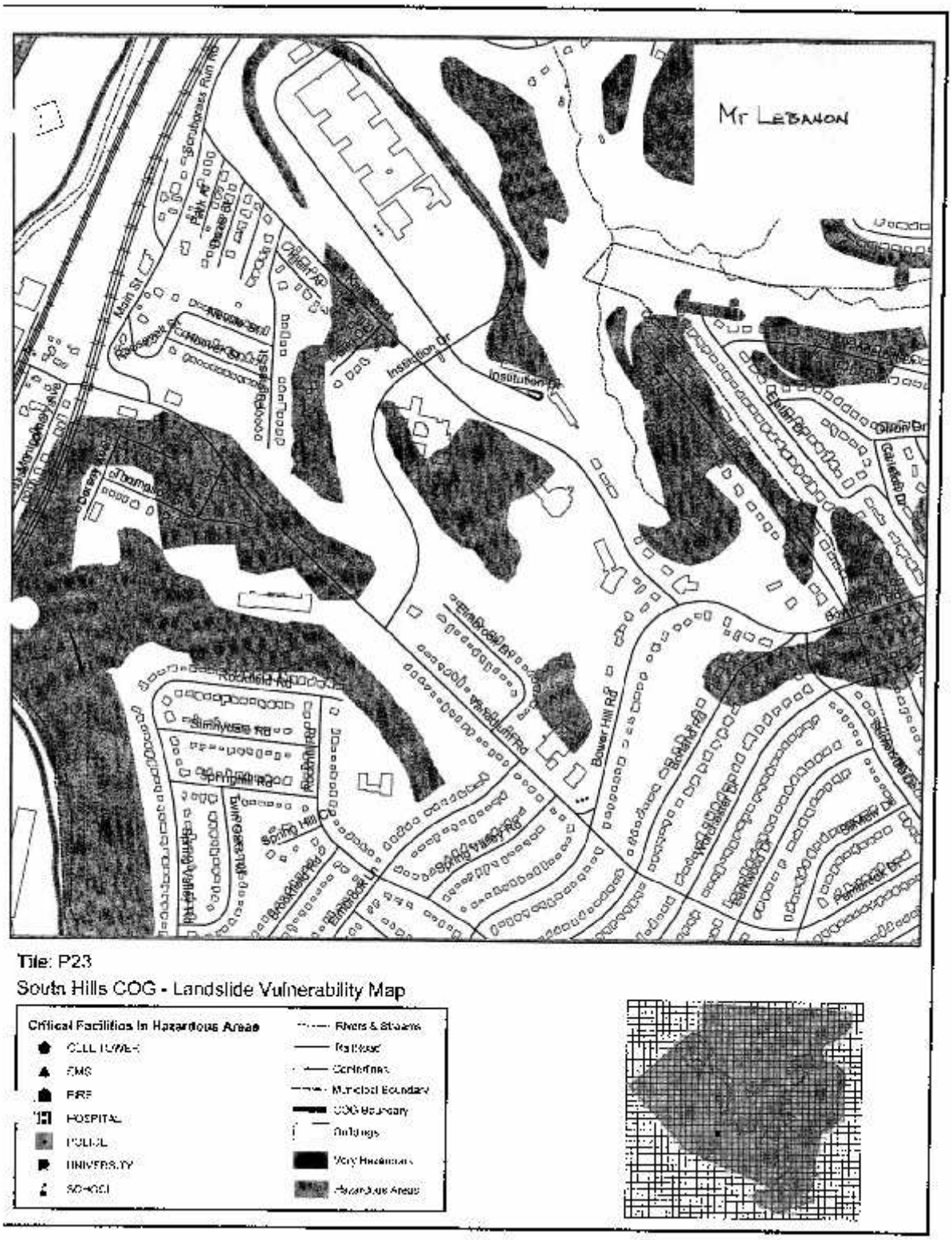
4th Alarm- Upgrade Incident Management Team to include:

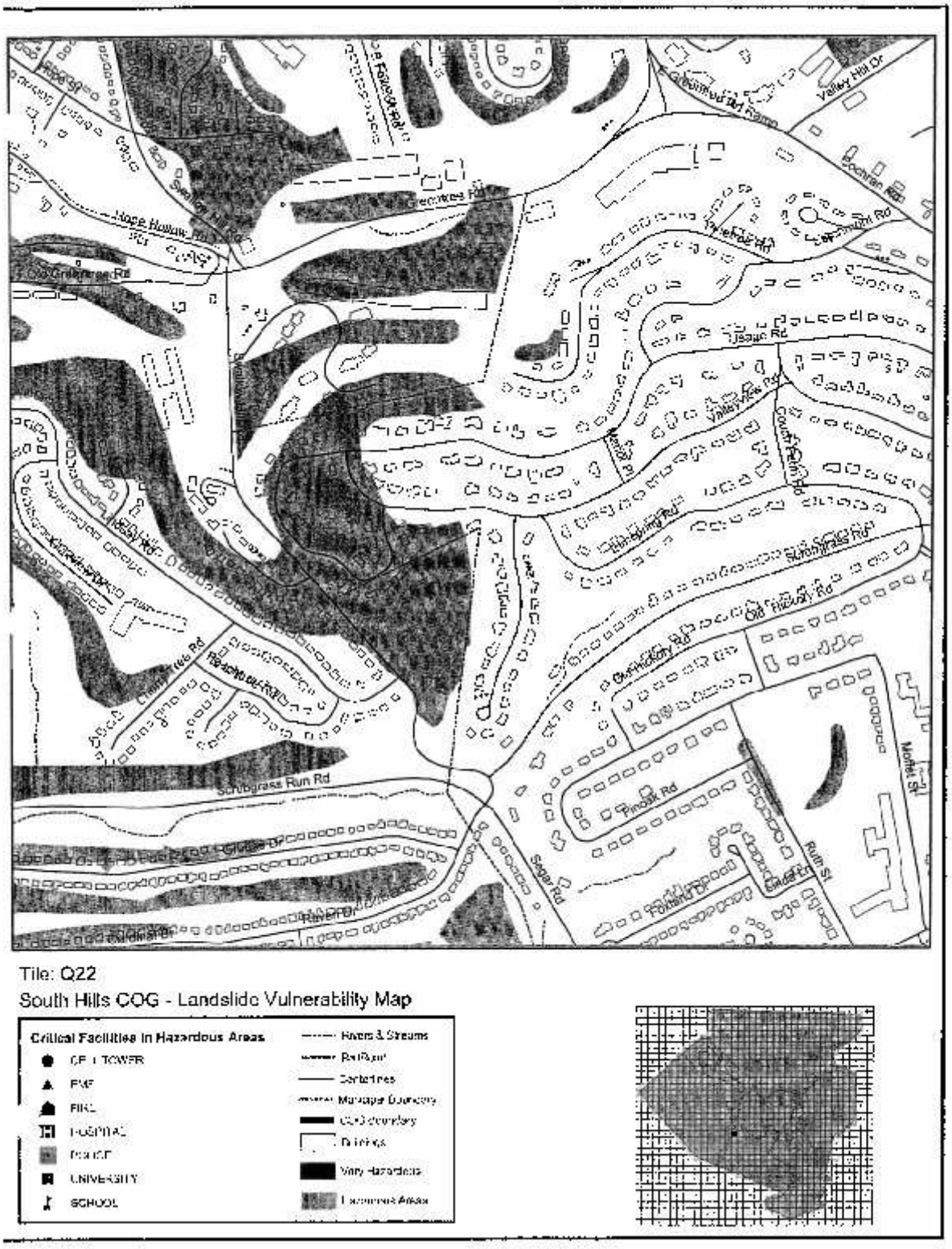
Allegheny County Emergency Management Agency

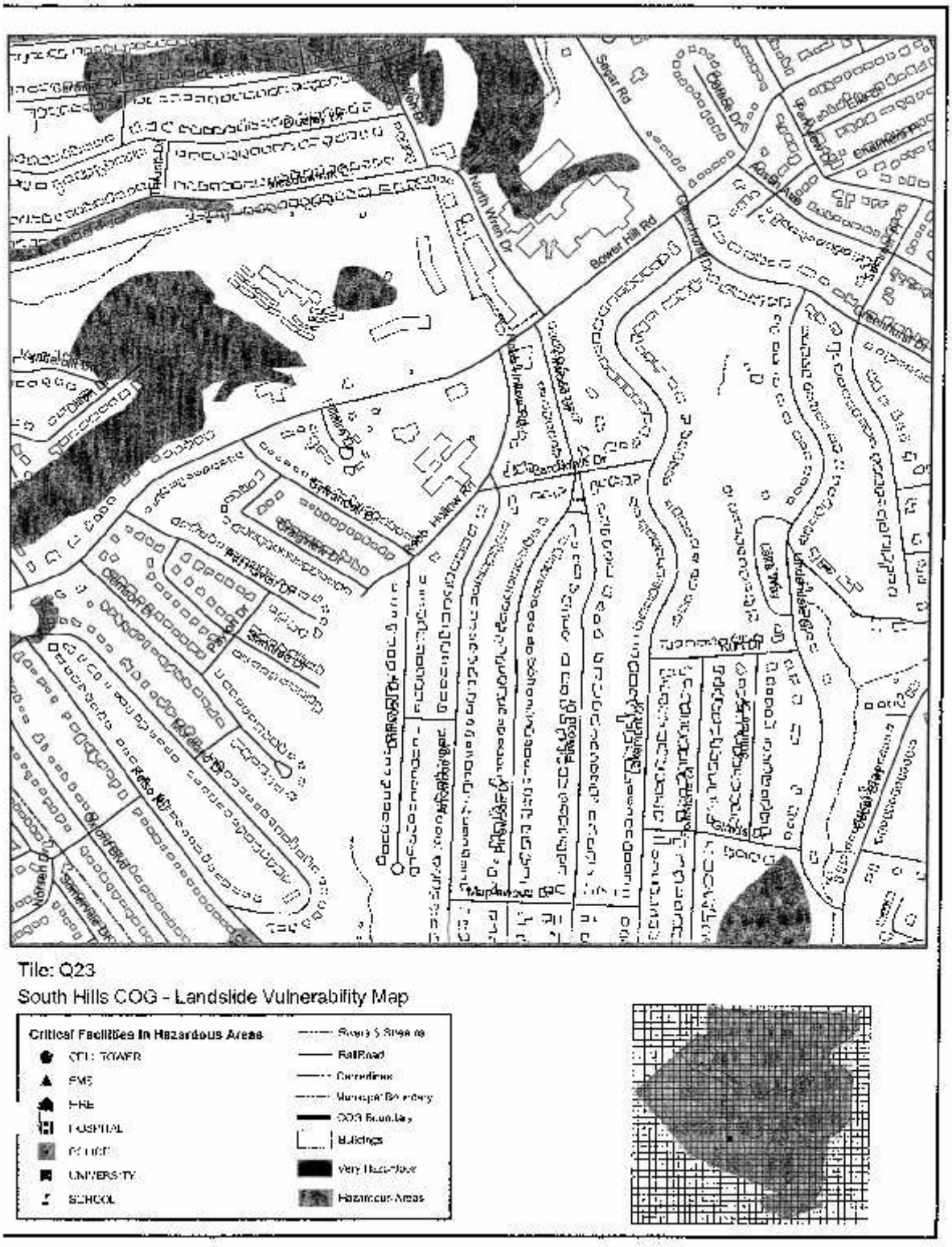
Fill-in Incident Management Team to include:

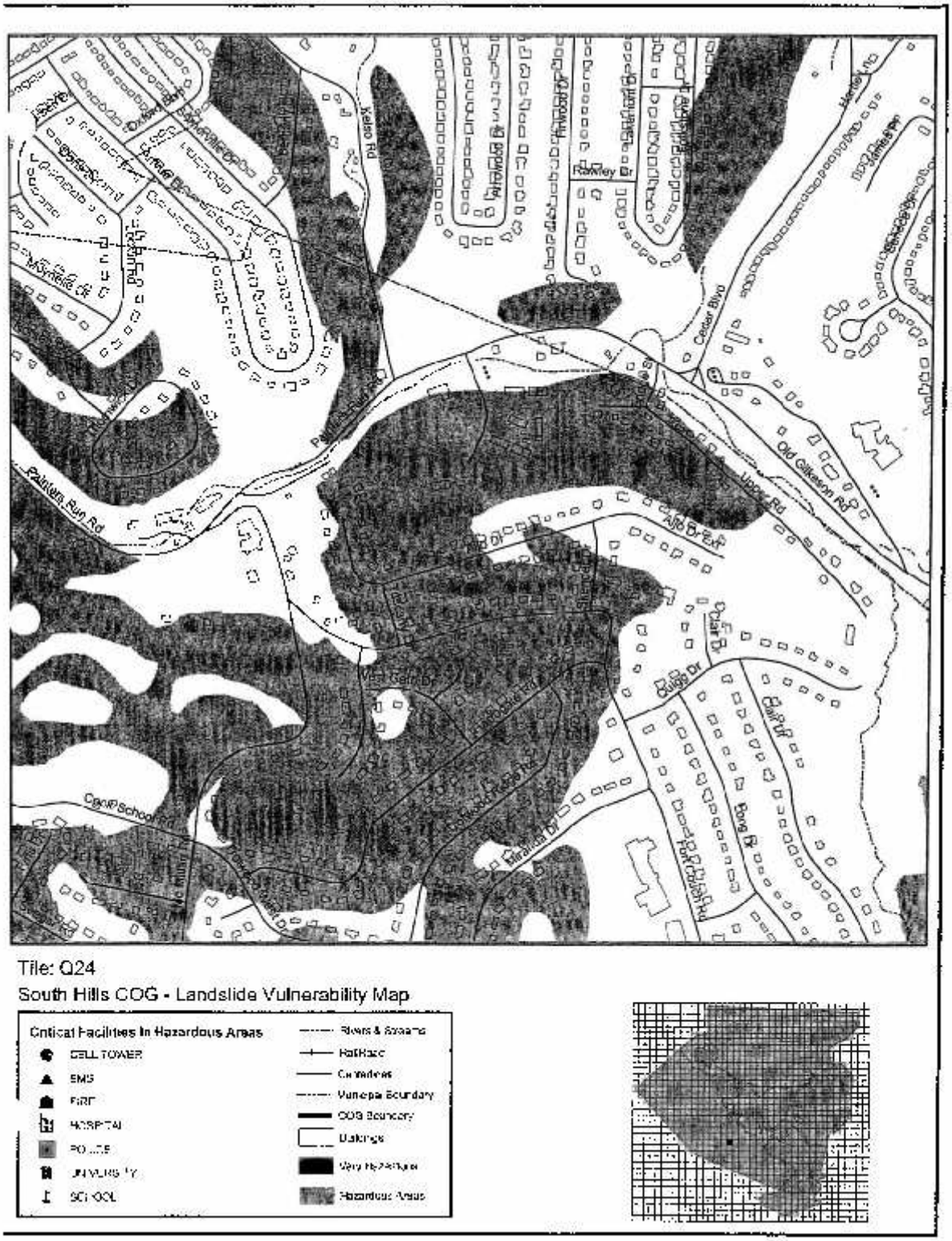
Peters Twp. (Washington County)

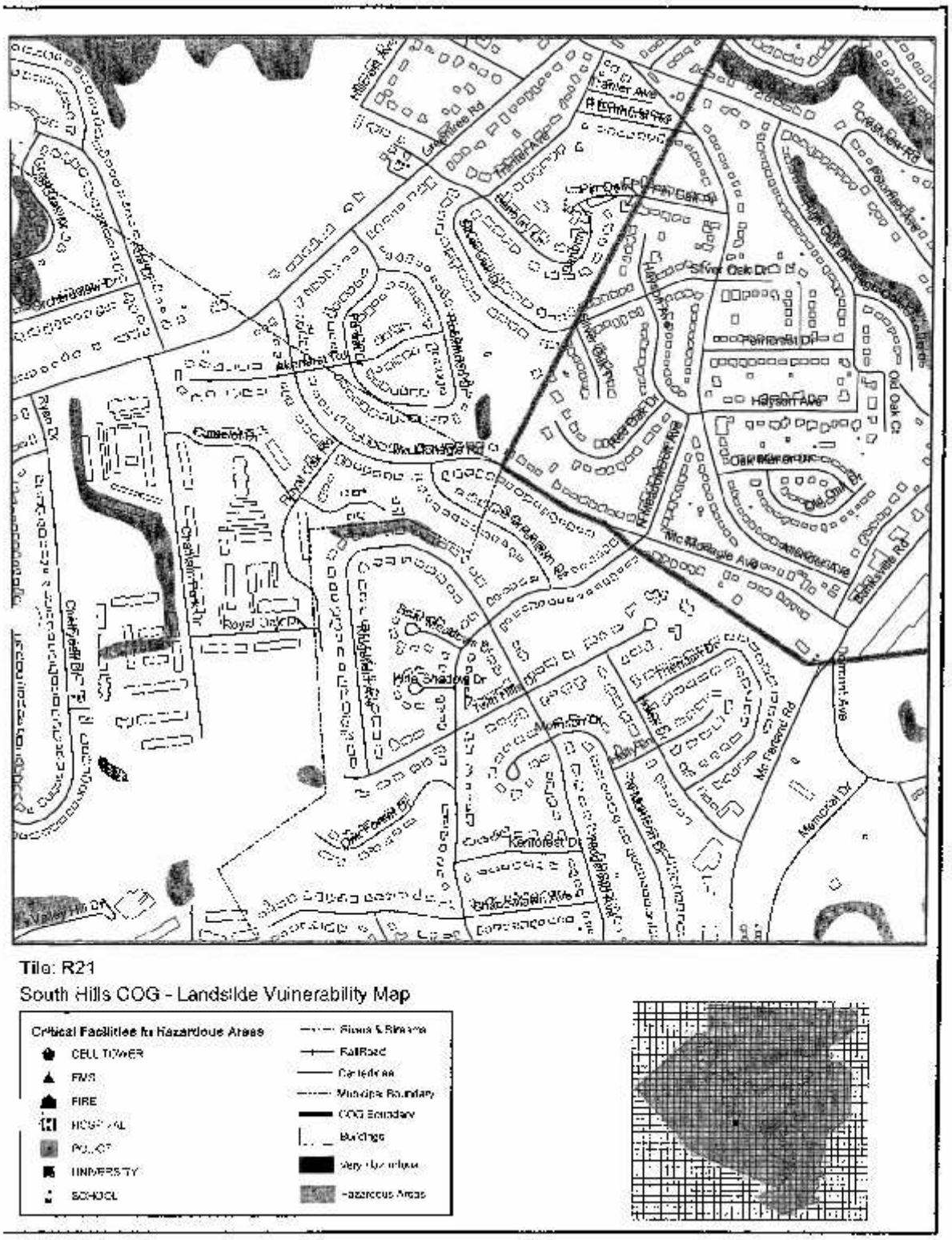
Appendix C – Landslide Vulnerability Maps


Mt Lebanon
Main St
Institution Dr
Bower Hill Rd
Rockfield Rd
Sunnyside Rd
Spring Hill Rd
Spring Valley Rd
Gilson Dr
Garfield Dr
Title: P23
South Hills COG - Landslide Vulnerability Map
Critical Facilities In Hazardous Areas
CELL TOWER
EMS
FIRE
HOSPITAL
POLICE
UNIVERSITY
SCHOOL
Rivers & Streams
Railroad
Centerlines
Municipal Boundary
COG Boundary
Buildings
Very Hazardous
Hazardous Areas


Tile: Q22
South Hills COG - Landslide Vulnerability Map
Critical Facilities in Hazardous Areas
CELL TOWER
EMS
FIRE
HOSPITAL
POLICE
UNIVERSITY
SCHOOL
Rivers & Streams
Railroad
Centerlines
Municipal Boundary
COG Boundary
Parcels
Very Hazardous
Hazardous Areas
Valley Hill Dr
Greenlee Rd
Hope Hollow Rd
Old Greenlee Rd
Tyssue Rd
Valley View Rd
Country Run Rd
Old Hickory Rd
Schubgrass Run Rd
Pinoak Rd
Sage Rd
Run St
Morlet St
Cherry Tree Rd
Fairway Dr


Tile: Q23
South Hills COG - Landslide Vulnerability Map
Critical Facilities In Hazardous Areas
CELL TOWER
EMS
FIRE
HOSPITAL
POLICE
UNIVERSITY
SCHOOL
Railroad
Buildings
Hazardous Areas
Bower Hill Rd
North Wren Dr
Sapar Rd


Kelso Rd
Rawley Dr
Cedar Blvd
Old Gilkeson Rd
Upper Rd
Ajo Dr Ext
Palmer Run Rd
Clair Dr
Bovg Dr
Fort Couch Rd
Group School Rd
Tile: Q24
South Hills COG - Landslide Vulnerability Map
Critical Facilities In Hazardous Areas
CELL TOWER
EMS
FIRE
HOSPITAL
POLICE
JEWELRY
SCHOOL
Rivers & Streams
Railroad
Carriageway
Municipal Boundary
COG Boundary
Buildings
Hazardous Areas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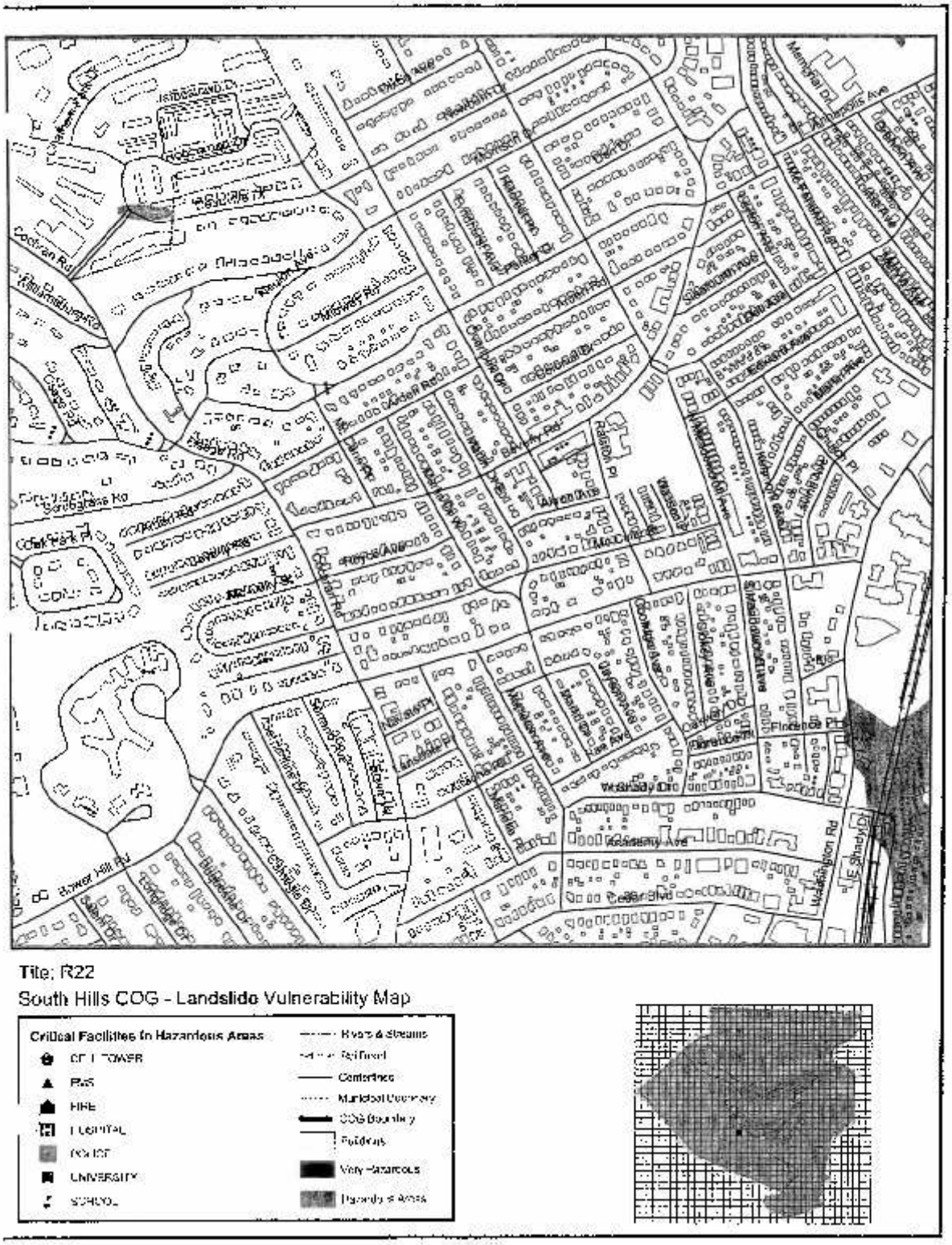
South Hills COG - Landslide Vulnerability Map
Critical Facilities in Hazardous Areas
CELL TOWER
FIRE
SCHOOL
Railroad
COG Boundary
Buildings
Hazardous Areas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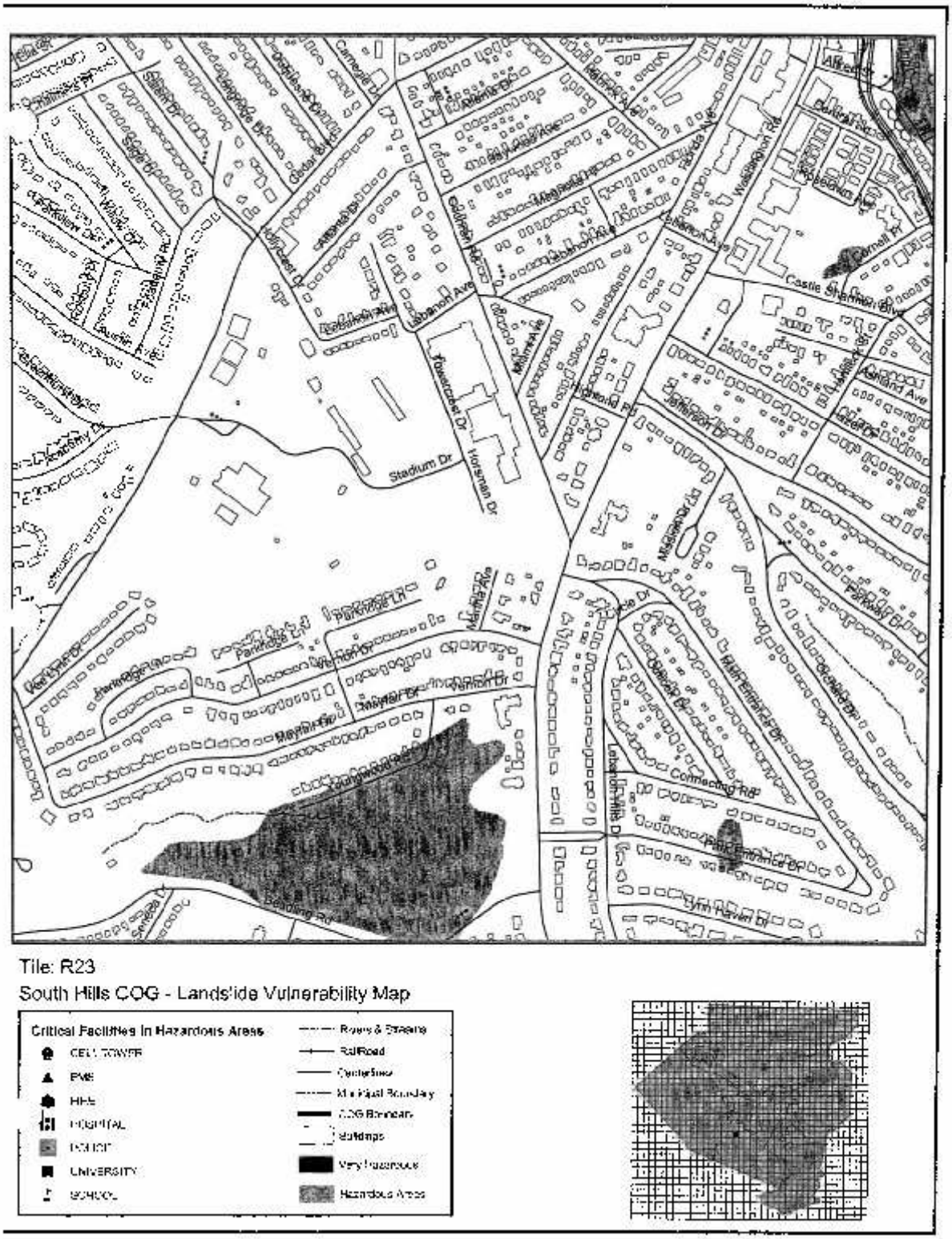
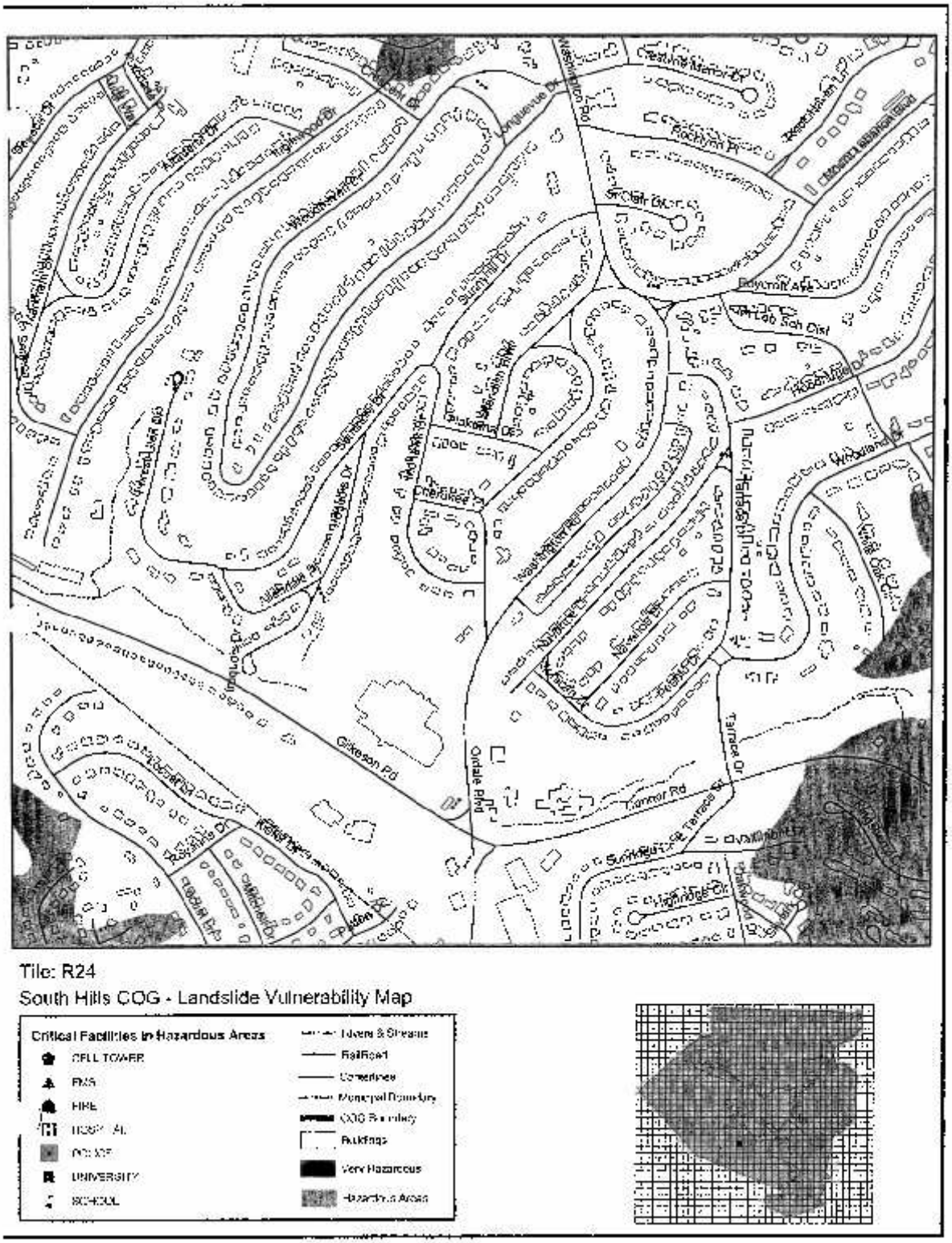
South Hills COG - Landslide Vulnerability Map
Critical Facilities in Hazardous Areas
Rivers & Streams
Railroad
Centerlines
Municipal Boundary
COG Boundary
Parcels
Very Hazardous
Hazardous Areas
FIRE
HOSPITAL
UNIVERSITY
SCHOOL


Stadium Dr
Horsman Dr
Lebanon Ave
Parkridge Dr
Vernon Dr
Connecting Rd
Castle Shannon Blvd
Tile: R23
South Hills COG - Landslide Vulnerability Map
Critical Facilities in Hazardous Areas
CELL TOWER
EMS
FIRE
HOSPITAL
POLICE
UNIVERSITY
SCHOOL
Rivers & Streams
RailRoad
Centerlines
Municipal Boundary
COG Boundary
Buildings
Very Hazardous
Hazardous Areas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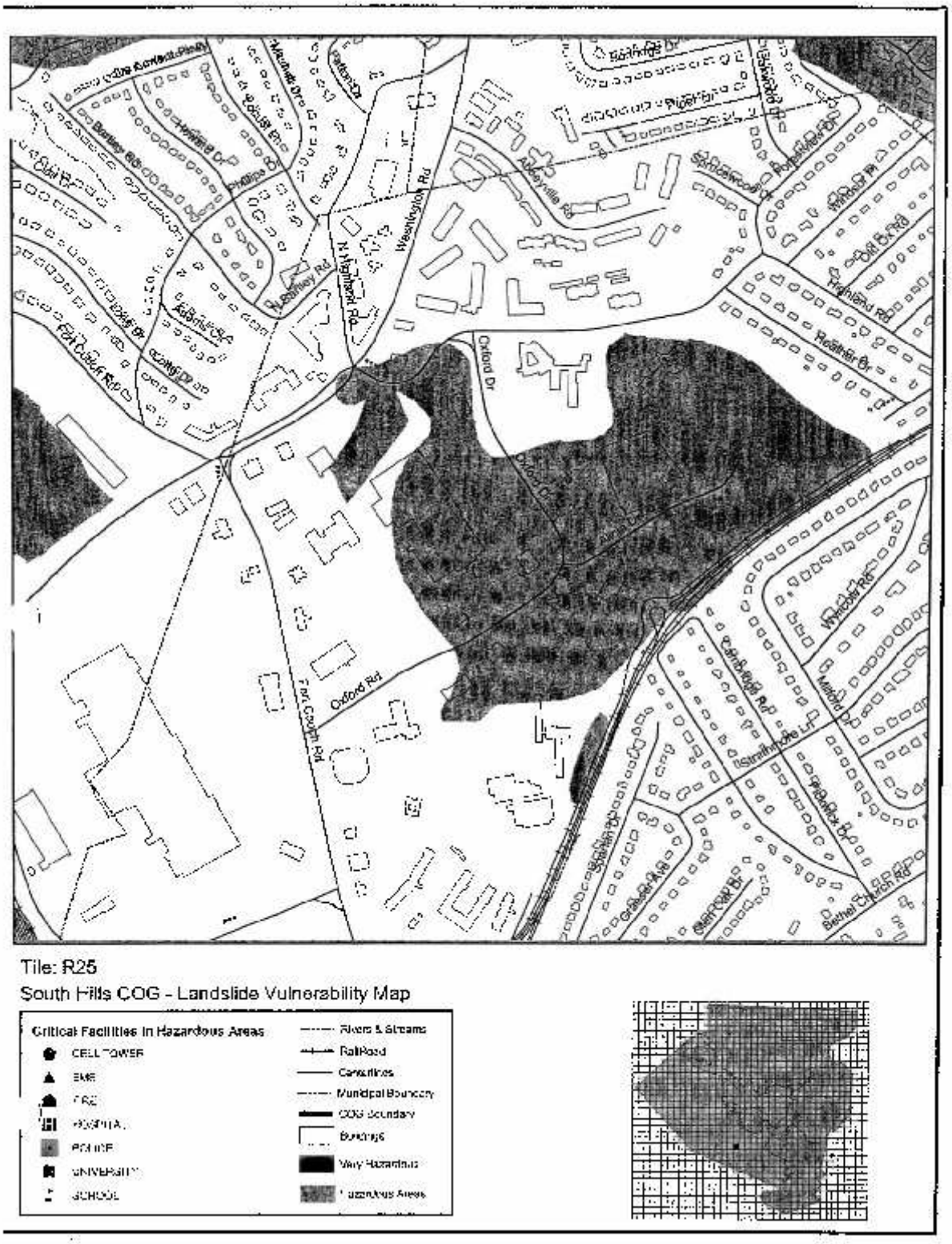
South Hills COG - Landslide Vulnerability Map
Critical Facilities in Hazardous Areas
CELL TOWER
EMS
FIRE
UNIVERSITY
SCHOOL
Rivers & Streams
Railroad
Centerlines
Municipal Boundary
COG Boundary
Buildings
Very Hazardous
Hazardous Areas
Gilkeson Rd
Oakdale Blvd
Terrace Dr
Tanner Rd
Washington Rd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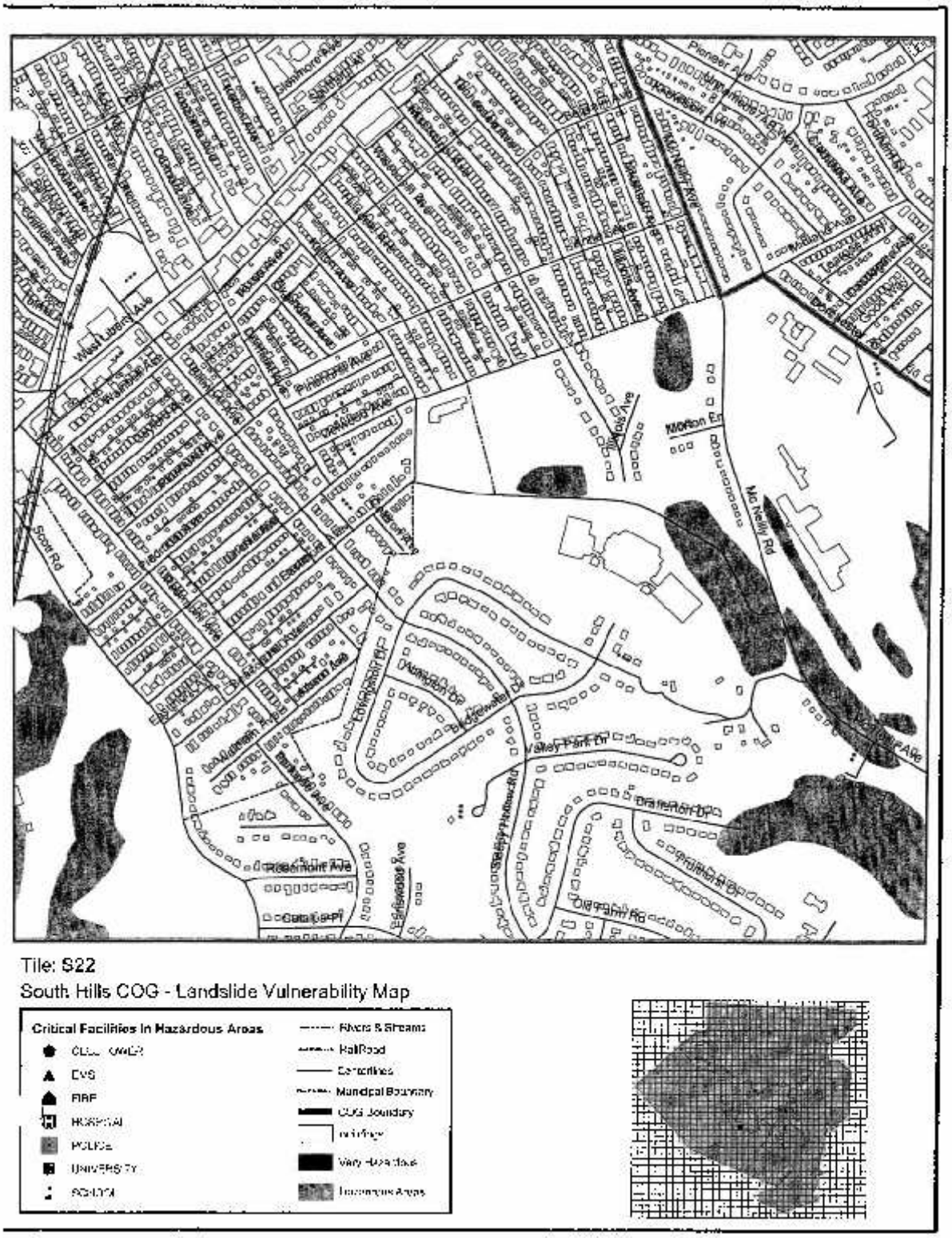
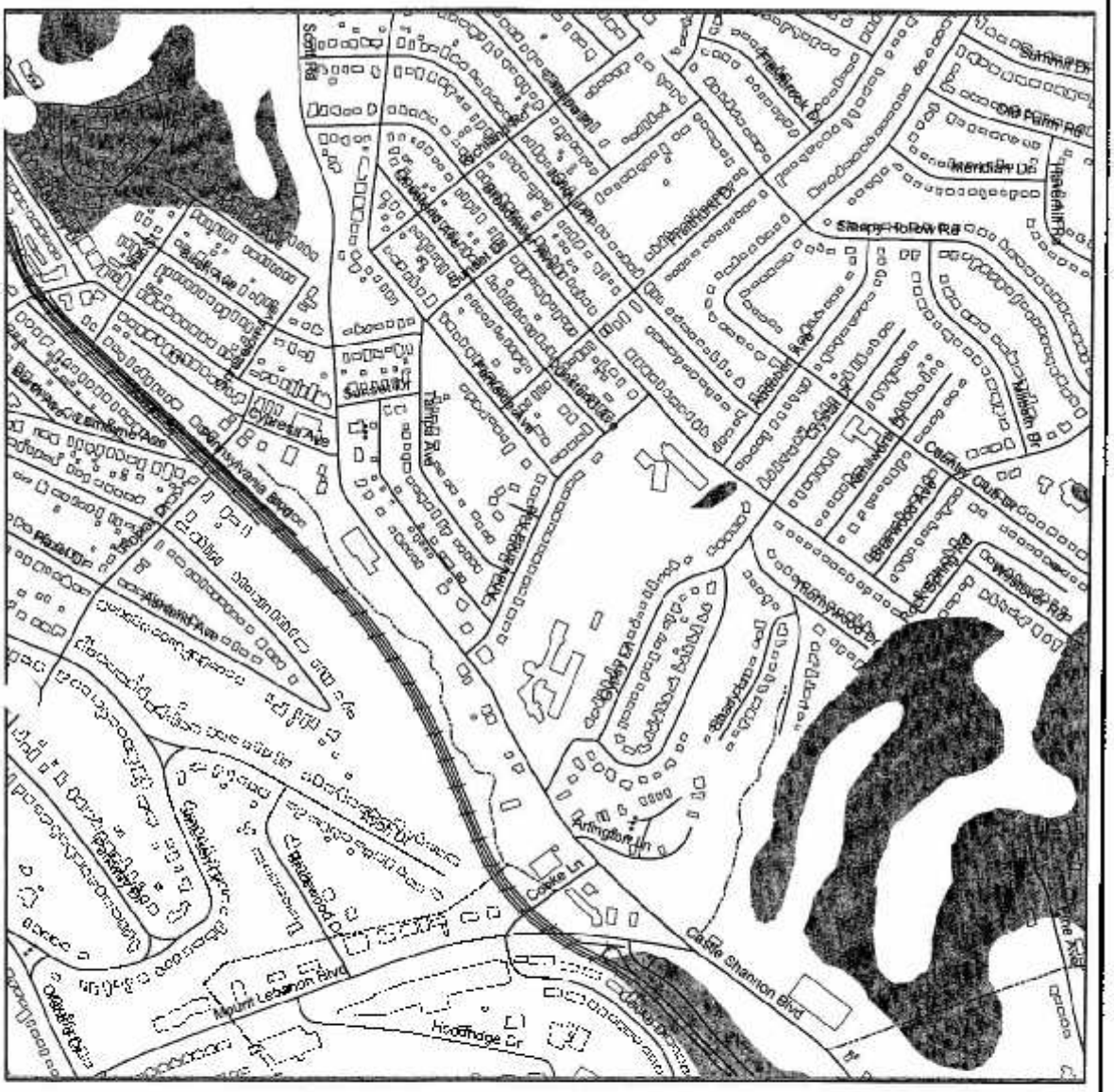
South Hills COG - Landslide Vulnerability Map
Critical Facilities In Hazardous Areas
CELL TOWER
EMS
FIRE
HOSPITAL
POLICE
UNIVERSITY
SCHOOL
Rivers & Streams
RailRoad
Centerlines
Municipal Boundary
COG Boundary
Buildings
Very Hazardous
Hazardous Areas
Washington Rd
N Highland Rd
Oxford Dr
Oxford Rd
Fort Couch Rd
Alberyville Rd
Highland Rd
Heather Dr
Wheeler Rd
Milford Dr
Rothbury Rd
Strathmore Ln
Bethel Church Rd


Pioneer Ave
Morton Dr
Mc Nelly Rd
Scott Rd
Valley Park Dr
Rosemont Ave
Old Farm Rd
Tile: S22
South Hills COG - Landslide Vulnerability Map
Critical Facilities In Hazardous Areas
EMS
FIRE
HOSPITAL
POLICE
UNIVERSITY
SCHOOL
Rivers & Streams
RailRoad
Municipal Boundary
COG Boundary
Very Hazardous
Hazardous Areas



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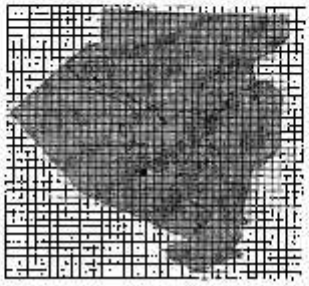
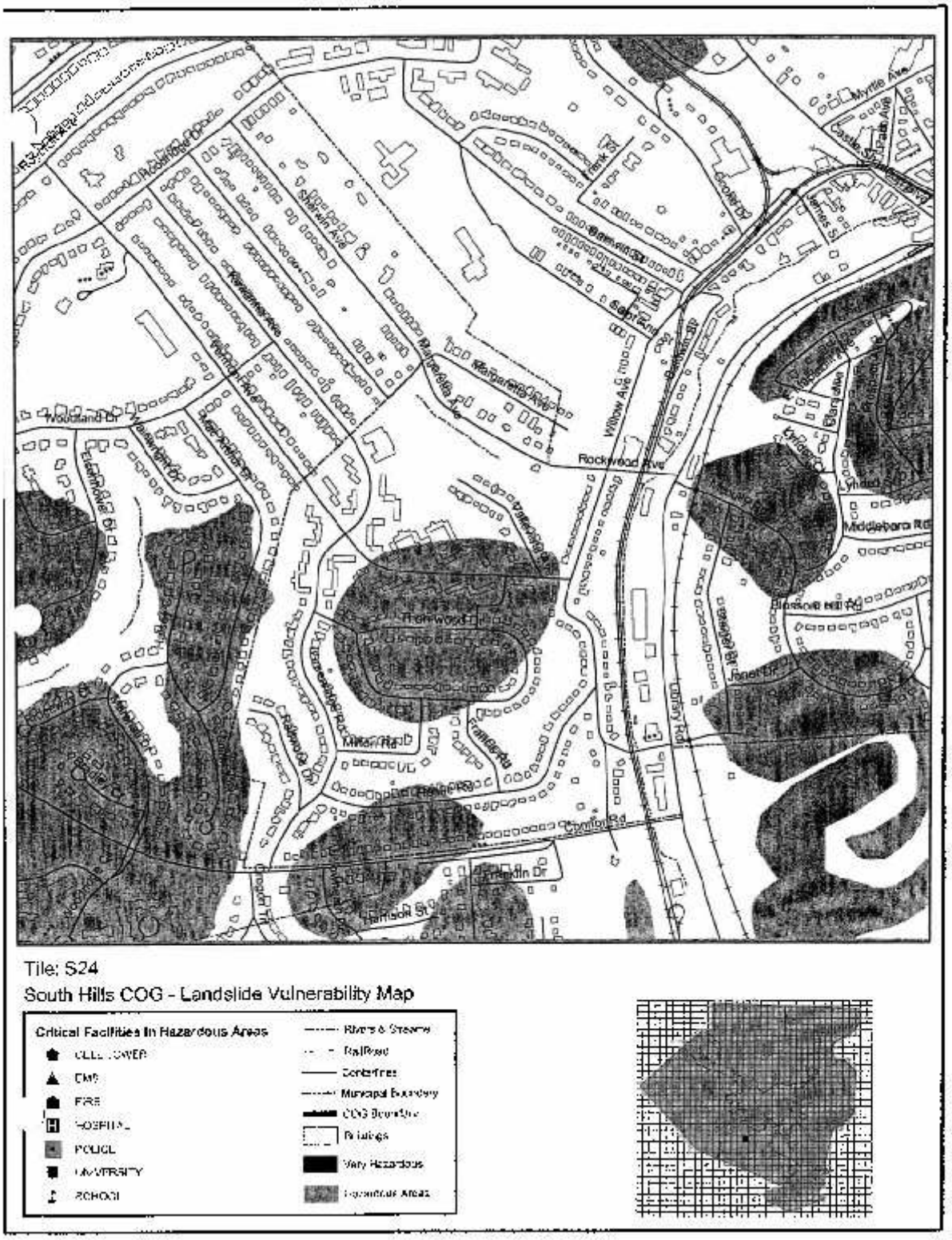
South Hills COG - Landslide Vulnerability Map

Critical Facilities In Hazardous Areas

- CELL TOWER
- EMS
- FIRE
- HOSPITAL
- POLICE
- UNIVERSITY
- SCHOOL

- Rivers & Streams
- Railroad
- Centerlines
- Municipal Boundary
- COG Boundary
- Buildings
- Very Hazardous
- Hazardous Areas

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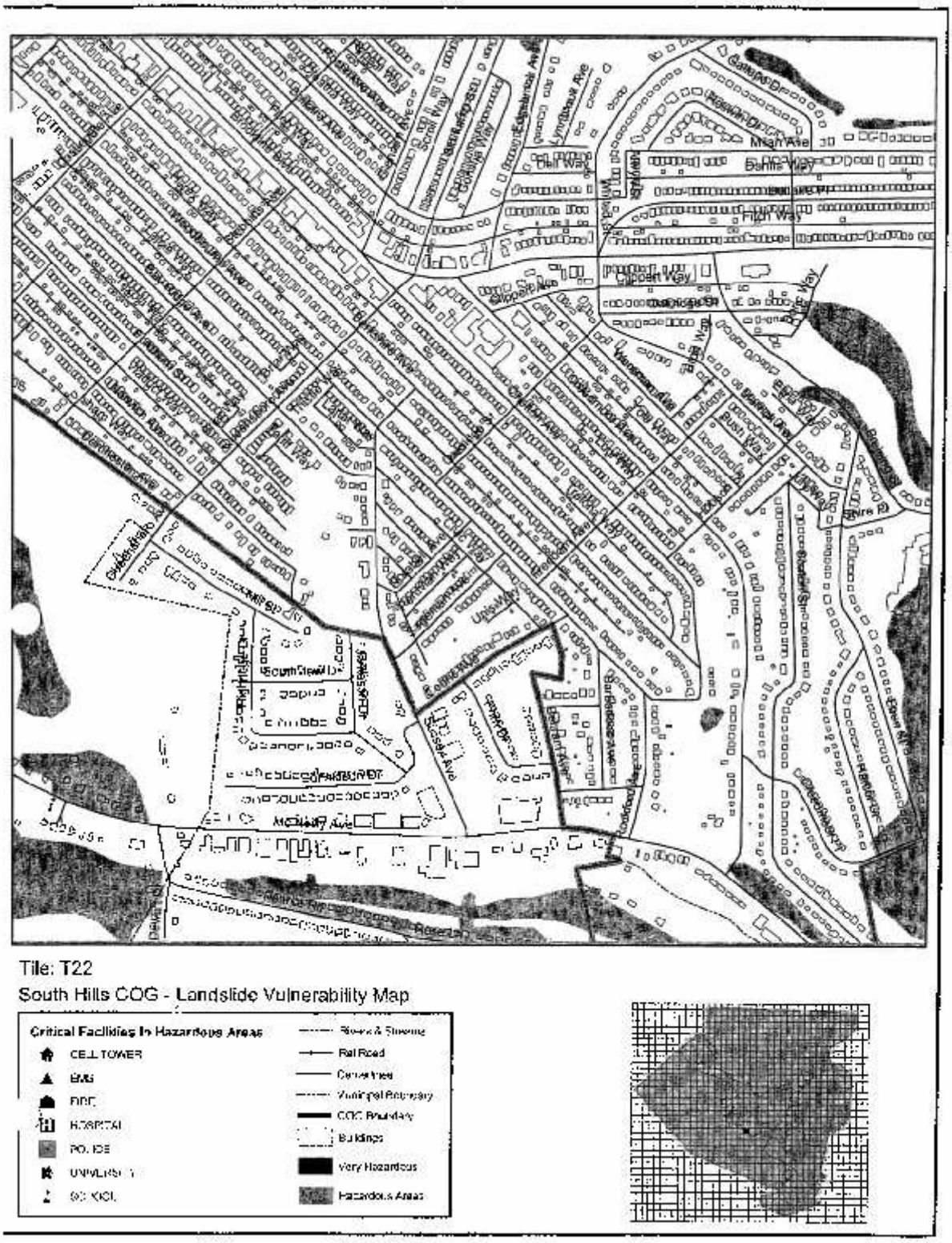
South Hills COG - Landslide Vulnerability Map
Critical Facilities In Hazardous Areas
Rivers & Streams
Railroad
Centerlines
Municipal Boundary
Buildings
Very Hazardous
Hazardous Areas
Woodland Dr
Rockwood Ave
Willow Ave
Myrtle Ave
Middleboro Rd
Cedar Rd
Cranton Rd
Franklin Dr
Harrison St


Tile: T22
South Hills COG - Landslide Vulnerability Map
Critical Facilities In Hazardous Areas
CELL TOWER
Rail Road
Municipal Boundary
COG Boundary
Buildings
Very Hazardous
Hazardous Areas

Appendix D – Undermined Areas Map

Mount Lebanon Twp, Allegheny County

Legend

▢ Municipality Boundary

▨ Undermined Area

This map was prepared using information considered to be the best historical data available.

The Department cannot verify the accuracy or completeness of this information.

Prepared by: Pennsylvania Department of Environmental Protection, Mine Subsidence Section, 11/15/2005
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