THE RODGERS GROUP, LLC

One Team, One Mission : Committed to Public Safety Professionalism.

FINAL REPORT

TOWNSHIP OF LAWRENCE FIRE DEPARTMENT

Organizational Review & Recommendations

November 2020

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EXECUTIVE SUMMARY

An examination of the operation and administrative functions of the three fire companies serving Lawrence Township has been completed by the evaluation team from The Rodgers Group, LLC. The examination included a review of the community characteristics of Lawrence Township, analysis of target hazards within the Township, the various demands for service placed on the Fire Department, as well as an evaluation of response times and staffing performance.

The study team interviewed members of the three fire companies and conducted separate interviews with the president and chief of the respective fire companies as well as the career firefighters. In every case, the team was impressed by the level of dedication and commitment by the members to provide fire protection for the Township of Lawrence.

Also included is a review and recommendations regarding the rating from the Insurance Service Office (ISO), EMS, Training and Professional Development, Standard Operating Procedures, Recruitment and Retention Programs, Alternative Staffing Models, and the steps the Township of Lawrence has taken to address staffing needs, specifically:

- Consolidation of the career staff members into the Lawrenceville Fire Company station.
- Creation of the Volunteer Incentive Program (VIP).
- Duty Shift Program

Several specific recommendations have been made and are included in this report. The recommendations have been formulated after a detailed and deliberative assessment process with the goal of providing guidance for the Township in order to continue to provide a high level of service to the community. A major recommendation is the reorganization of the Fire Department into a single entity with one chain of command to better respond to the current and future demands of the Township.

Each recommendation has been developed using nationally recognized standards and best practices, and represents our best expert opinion based on the data and information made available to the team. Each recommendation has also been made while at all times considering the impact that improved policies and procedures may have on member safety and how emergency and administrative operations may be improved.

Recommendations:

A total of 38 specific recommendations are proposed for consideration by Fire Department and Municipal officials. While many recommendations were made, they should not detract from the dedication and commitment of the career firefighters and volunteer members of the Fire Companies serving Lawrence Township. A summary of the recommendations follows with page number references follows:

Recommendation 1: *The agency should appoint a department member to serve as the quality assurance officer for the fire reporting and analysis system. Page 85*

Recommendation 2: *The agency should develop a database capable of analyzing response time performance measures using fractile percentages as recommended by current fire service best practices. Page 86*

Recommendation 3: *The Township should conduct a review of the current protocol of fire, rescue, and EMS dispatching hand-off to County dispatch to ensure that alarm handling times are within NFPA alarm handing time performance standards. Page 87*

Recommendation 4: *The agency should conduct an analysis of station turnout times and overall response times as measured against NFPA standards expressed in fractile percentages. Page 90*

Recommendation 5: *The township should undertake an in-depth study of the current fire station locations and capabilities in regard to overall emergency service demand and response times to determine the feasibility of constructing a new fire station in a central location in the Township. A new fire station should be designed to accommodate the Fire Department, EMS and Emergency Management functions of the Township. Page 108*

Recommendation 6: *The agency should review box alarm run cards annually to assure available resources for both mutual aid and automatic aid are current. Page 109*

Recommendation 7: *The agency should revise training programs to comply with NFPA 1001, NFPA 1002, NFPA 1021, and NFPA 1451. Page 114*

Recommendation 8: *The agency should develop a pre-fire planning inspection program of commercial, industrial, and other similar type buildings to be performed by on-duty members. Page 114*

Recommendation 9: *The agency should continue to evaluate the Volunteer Incentive Program and consider program expansion to work toward meeting NFPA 1720 staffing requirements for structure fires. Page 114*

Recommendation 10: *The agency should consider expanding automatic aid agreements with contiguous communities to work toward meeting NFPA 1720 staffing requirements for structure fires. Page 114*

Recommendation 11: *The agency should review their agreement with the utilities providing fire hydrant services and build in inspection and flow testing schedules that meet American Water Works Association operations manual M-17. Page 114*

Recommendation 12: *A comprehensive, single set of Standard Operating Guidelines should be developed and implemented for the Lawrence Township Fire Division. Page 116*

Recommendation #13: *The SOGs should be organized using the SOG Manual template in Appendix A. Page 117*

Recommendation #14: *The SOGs should be developed using the SOG template in Appendix B. Page 117*

Recommendation #15: *The agency should carefully review the feasibility of an EMS/Career Firefighter consolidation as a method to enhance the delivery of EMS and Fire services. Page 119*

Recommendation #16: *The agency should require all current and future career firefighters to obtain and maintain an EMT certification to enhance the delivery of EMS. Page 119*

Recommendation #17: *The agency should explore the feasibility of adding additional career firefighters to enhance the delivery of EMS transport and Fire services. Page 119*

Recommendation #18: *The agency should explore the feasibility of including EMS – First Responder as part of the VIP for members of the volunteer fire companies to enhance the delivery of EMS. Page 119*

Recommendation 19: *Revise the municipal ordinance to create a single, combination volunteer and career fire division under the authority of a full-time, career fire chief. Page 123*

Recommendation 20: *The agency should develop department-wide training programs to comply with NFPA 1001, NFPA 1002, NFPA 1021, and NFPA 1451, NJ PEOSHA and NJAC N.J.A.C. 5:73-1.6. Page 126*

Recommendation 21: *The agency should consider using only NJDFS-trained Level One or Level Two Fire Instructors for program development and delivery. Page 126*

Recommendation 22: *The agency should include leadership and supervisory training as a requirement for all company and chief officers. Page 126*

Recommendation 23: *A formalized mentoring program should be developed to support and guide new members of the fire department. Page 128*

Recommendation 24: *Develop a formalized exit interview program to provide insights into improving the department's retention program. Page 127*

Recommendation 25: *Consider establishing a one-week, youth fire academy program. Page 129*

Recommendation 26: *Update the Slackwood Fire Company website and feature the information from the existing recruitment brochure. Page 131*

Recommendation 27: *Update the Lawrenceville Fire Company website and feature recruitment information on the homepage. Page 131*

Recommendation 28*: Reactivate and update Lawrence Road Fire Company website. Include recruitment information on the homepage. Page 131*

Recommendation 29*: Include firefighter recruitment information on the municipal website. Page 131*

Recommendation 30 *– The use of social media should be enhanced as part of the Lawrence Fire Division community outreach efforts and as a component of a comprehensive recruitment and retention program. A social media policy should be adopted to assure appropriate usage of social media by all members. Page 133*

Recommendation 31: *The agency should take steps to ensure that active firefighting members are nominated for annual recognition. In addition to any recognition at a Fire Company level, the governing body should recognize the award recipients at a Municipal Council meeting. Page 135*

Recommendation 32: *Create a single department-wide application, approval, and on-boarding process for firefighter candidates that includes a rapid background investigation. Page 148*

Recommendation # 33 *– The Fire Department should apply for a SAFER grant to fund various initiatives and programs related to enhancing the recruitment and retention efforts. Page 148*

Recommendation # 34*: -- The Fire Department should consider engaging a recruiter to assist with the development and delivery of a volunteer firefighter recruitment program. Page 148*

Recommendation 35: *Lawrence Township should evaluate the effectiveness of the LOSAP and the Volunteer Incentive Programs (VIP) to determine which program best meets the recruitment and retention needs of the Fire Department. Page 149*

Recommendation 36: *To assure sufficient and immediate firefighting response, the duty crew program should be expanded to cover the periods when career staffing is not available. Page 150*

Recommendation 37: *Explore the creation of a student live-in program that will work in partnership with Rider University. Page 151*

Recommendation 38: *Expand the career staffing to provide daytime coverage during holidays and weekends. Grant funding to support the cost of adding career staffing should be applied for through the Staffing for Adequate Fire and Emergency Response (SAFER) program. Page 154*

INTRODUCTION

"The safety of the people shall be the highest law.."
- Marcus Tullius Cicero

Professional public safety organizations monitor their successes and failures. They plan and provision for the ever-changing environment that they are responsible for protecting. They forecast potential obstacles to the delivery of their critical services and the most professional of these entities do these things in a proactive and transparent manner.

This report represents just that. It is the purposeful assessment of, and projection for, the public safety resources required to adequately protect the citizens of the Township of Lawrence. It is, in fact, a proactive action by the leadership of the community and its public safety executives to purposefully contemplate their current fire protection needs and initiate the planning required to address any potential adjustments needed to maintain the quality of life that the residents expect. The benchmarks for the review of the community's fire protection resources were the best practices promulgated by the recognized professional organizations, standard making bodies, and accrediting organizations for the fire service. The personnel conducting this review and the development of this report are recognized public safety and municipal management subject matter experts.

Throughout this project our team members have routinely expressed appreciation for the cooperation we received from all who participated in this endeavor. It is appropriate to formally reiterate that appreciation and memorialize it here in this report. The interest and enthusiasm demonstrated by the leaders responsible for the safety of the citizens of the Township of Lawrence was simply nothing short of professional in every regard. The desire to foster a philosophy that respects the tenets of self-evaluation and planning for the future represents a sincere commitment to maintaining the level of service the community deserves, and a means of identifying emerging risks that can undermine that goal.

COMMUNITY CHARACTERISTICS

Community Risk Profile

An objective analysis of the fire protection needs of a municipality would not be complete without examining the major factors that drive the fire suppression, emergency medical services, and specialized rescue requirements of a fire agency. These include the physical and demographic characteristics of the area, the service demand levels, and resulting emergency incident history of the fire department. An examination of these key factors will assist in making specific observations about the scope and complexity of the fire, EMS and rescue challenges faced daily by the fire department in a given community. Such an examination will result in a community risk profile that the governing body can use to make informed and objective decisions regarding fire department staffing and organization, as well as fire apparatus, equipment, and facilities purchases. We will begin our community risk profile with an examination of the demographic and physical characteristics of the municipality.

Community Characteristics – Township of Lawrence

The Township of Lawrence is situated in the central portion of New Jersey in Mercer County. It is located approximately equidistant from New York City and Philadelphia and is considered a suburban community. According to the 2010 United States Census, the municipality is part of the New York metropolitan area but also directly borders the Philadelphia metropolitan area. It has a total land area of 22.063 square miles, of which 21.808 square miles are land and 0.255 square miles are water. The township ranks 4th of 12 municipalities in the area rank in the county, and 124th of 565 municipalities in the state.

Originally formed by early Quaker settlers as Maidenhead Township in 1697, the town became part of the newly created Hunterdon County in 1714. The township was renamed Lawrence Township in 1816 in honor of Captain James Lawrence, commander of the frigate USS Chesapeake and one of the naval heroes of the War of 1812. Lawrence is best known for his dying command of “Don’t Give Up the Ship.” Lawrence Township became part of Mercer County at its creation in 1838. Portions of the township were taken to form Millham Township in 1882, which was annexed six years later by the City of Trenton.

Geography

The township borders the Mercer County municipalities of Hamilton Township and the City of Trenton to the south, Ewing Township and Hopewell Township to the west, the Municipality of Princeton to the north and West Windsor Township to the east. Lawrence Township lies in the geographic center of the county. The historic village of Lawrenceville, with a population of 3,887, is a census-designated place and unincorporated community located within the township. The village features the Main Street Historic District that preserves a number of historic buildings along US Route 206, formerly known as the King's Highway, which was the main route between New York and Philadelphia in colonial times. Many area residents often refer to all of Lawrence Township as Lawrenceville as a significant majority of township residents use a Lawrenceville mailing address, while other residents have a mailing address in either Princeton or Trenton. The route of the Delaware and Raritan Canal runs north-south through the township. Once a major freight route between Philadelphia and New York City in the 19th century, the canal has been preserved as a linear park with 70-miles of multi-use paths along the historic canal as it traces its former route northward to New Brunswick. In the township, the canal links several township parks and open spaces.

Besides the route traced north through the township along the eastern border by the Raritan and Delaware Canal, other bodies of water in the community are limited to: Colonial Lake, a 25-acre man-made lake maintained and operated by the township as a community park; a 15-acre lake on the grounds of the Bristol Myers Squibb Lawrenceville campus; and a small retention pond on the grounds of the Educational Testing Services Corporate Headquarters. Several small streams drain across the broad flatlands of the central and southern portions of the community while feeding the Shabakunk Creek and Assunpink Creek watersheds. Both waterways merge and drain into the Delaware River in the City of Trenton to the south. The Stony Brook flows from west to east through the extreme northern portion of the township before heading to the northeast to join the Millstone River which ultimately drains into the Raritan River.

Transportation

As of May 2010, the township has a total of 132.33 miles of roadways, of which 102.37 miles were maintained by the municipality, 11.48 miles by Mercer County, and 18.48 miles by the NJDOT. The township is bisected by several major north-south thoroughfares including US Route 206, Princeton Pike, and US Route 1. Interstate 295 runs roughly east-west across the center of the township and is a major feeder road between Interstate 195 and the Pennsylvania border.

Public transportation options are limited in the township, however, the busy Northeast Corridor rail line (carrying Amtrak and NJ Transit trains) runs along the eastern edge of the township. The nearest stations are located at Hamilton, Trenton, Princeton, and Princeton Junction. NJ Transit provides regular bus service to Trenton. The nearest commercial airport is Trenton-Mercer Airport in Ewing Township with non-stop service to 10 major cities in the eastern half of the United States. Lawrence Township is nearly equidistant to the other two nearby commercial airports, Philadelphia International Airport (47 miles) and Newark Liberty International Airport (46 miles).

Climate

Like most of the Northeastern United States, Lawrence Township has a humid continental climate, and generally sees cold winters and hot, humid summers. According to the Köppen climate classification system, the community can expect episodes of extreme heat and humidity with heat index values above 100 degrees Fahrenheit. On average, the wettest month of the year is July which corresponds to the annual peak of thunderstorm activity. During the winter months, episodes of extreme cold and wind with wind chill factors of less than 0 degrees Fahrenheit can be expected. The average seasonal snowfall total is 24 to 30 inches while the average snowiest month is February.

Demographics

As of the 2010 United States Census, there were 33,472 people, 12,524 households, and 8,115 families living in the township. The population density was 1,535 persons per square mile. There were 13,239 housing units at an average density of 607 per square mile. The racial makeup of the township was 69.68% (23,322) White, 10.76% (3,602) Black or African American, 0.20% (66) Native American, 14.10% (4,721) Asian, 0.09% (29) Pacific Islander, 2.73% (913) from other races, and 2.45% (819) from two or more races. Hispanic or Latino of any race were 7.48% (2,503) of the population.

There were 12,524 households out of which 29.2% had children under the age of 18 living with them, 51.1% were married couples living together, 10.5% had a female householder with no husband present, and 35.2% were non-families. 29.2% of all households were made up of individuals, and 11.3% had someone living alone who was 65 years of age or older. The average household size was 2.45 and the average family size was 3.07.

In the township, the population was spread out with 20.0% under the age of 18, 13.5% from 18 to 24, 26.0% from 25 to 44, 26.7% from 45 to 64, and 13.8% who were 65 years of age or older. The median age was 38.3 years. For every 100 females there were 86.8 males. For every 100 females ages 18 and older there were 82.7 males.

The Census Bureau's 2006–2010 American Community Survey showed that (in 2010 inflation-adjusted dollars) median household income was $88,693 (with a margin of error of +/- $5,442) and the median family income was $108,743 (+/- $4,377). Males had a median income of $68,305 (+/- $6,890) versus $50,103 (+/- $5,345) for females. The per capita income for the borough was $43,136 (+/- $3,030). About 4.4% of families and 5.8% of the population were below the poverty line, including 7.8% of those under age 18 and 6.2% of those age 65 or over.

Population growth has shown a steady increase in the past 30 years with 25,787 persons counted in 1990 (plus 6,063 persons – a 30.7% increase), 29,159 persons in 2000 (plus 3,372 persons – a 13.1% increase), and 33,472 persons in 2010 (plus 4,313 persons – a 14.8 % increase). The estimated 2018 population is 32,668 persons representing a slight decrease of 2.4%. This represents an overall population increase of 6,881 persons from 1990 to 2018 (an increase of 21%).

Land Use

The municipality is located along the Route 1 corridor in the central part of the state. The local topography can be described as wooded hills in the extreme northern portion of the community giving way to broad flatlands as the community stretches southward towards Trenton. The northern half of the town features broad open flat plains with large lot single family dwellings dispersed among several areas of preserved open space. Two large corporate centers which are located on very large acreages with plenty of dedicated open space are also featured in the northern half of the community. Moving southward to the central portion of the township, land use and development becomes more concentrated with large tracts of single family and multi-family residential developments. The southern portion of the town features older single-family residences on smaller lot sizes. Land use development is concentrated in the western and southern quadrants of the community with several areas appearing to be totally built out. There are multiple large multi-unit residential townhouse and apartment complexes scattered throughout the central and southern portions of the township.

Commercial development is concentrated along the north and south corridors of Route 1, Route 206, and Princeton Pike. Two large research and development centers, Bristol Myers Squibb and Educational Testing Service, are located in the northern portion of the township. The Quaker Bridge Mall, a large enclosed shopping mall, and the Mercer Mall, a traditional strip mall shopping center, are located near the intersection of Route 1 and Quaker Bridge Road at the West Windsor border on the eastern edge of the town. Clusters of light commercial and retail establishments lie along the north and south corridors of Route 1, Route 206, and Princeton Pike. Several areas of commercial and

light industrial occupancies are also located in the southern portion of the community near the border with the City of Trenton and Hamilton Township.

The Lawrenceville School, a private college preparatory boarding school, is located on a 700-acre campus along Route 206 in the historic Lawrenceville section of the community. Rider University, a private university occupying a 300-acre campus serving 6,000 graduate and post-graduate students, is located in the central portion of the township. Cobblestone Creek Country Club -- which offers a redesigned 18-hole golf course, clubhouse with dining facility, and tennis and pool areas -- sits near the intersection of Route 206 and Route 295.

Public schools

The Lawrence Township Public Schools serve students in pre-kindergarten through twelfth grade. As of the 2017–18 school year, the district and its seven schools had an enrollment of 3,907 students and 325.1 classroom teachers (on an FTE basis), for a student–teacher ratio of 12:1. Based on 2017-18 enrollment data from the National Center for Educations Statistics, schools in the district are Eldridge Park Elementary School (239 students; in grades K-3), Ben Franklin Elementary School (391; PreK-3), Lawrenceville Elementary School (307; PreK-3), Slackwood Elementary School (267; K-3), Lawrence Intermediate School (899; grades 4-6), Lawrence Middle School (596; grades 7-8) and Lawrence High School (1,157; grades 9-12).

Eighth grade students from all of Mercer County are eligible to apply to attend the high school programs offered by the Mercer County Technical Schools. These are a county-wide vocational school district that offers full-time career and technical education at its Health Sciences Academy, STEM Academy, and Academy of Culinary Arts with no tuition charged to students for attendance.

Private schools

Lawrence Township is home to two parochial schools operated by the Roman Catholic Diocese of Trenton: Notre Dame High School is a coeducational, Roman Catholic, college preparatory school serving 1,022 students in grades 9-12; and Saint Ann School, which serves 341 students in preK-3 through eighth grade.

Lawrenceville is home to the historic Lawrenceville School, a coeducational, independent boarding school for ninth through twelfth grades, founded in 1810. 817 students were enrolled in the 2018-2019 school year.

The Chapin School Princeton is a private coeducational day school serving 291 PreK-8 students on a 5-acre site in the extreme northern section of the township near the Princeton border.

Princeton Junior School is a private PreK-5, day school located at 90 Fackler Road serving 95 students on a 7-acre site.

Colleges and universities

Founded in 1865 and granted university status in 1992, Rider University is a private university with its main campus just south of Lawrenceville at 2083 Lawrenceville Road. It served 4,825 undergraduate and graduate students in 2019. The campus facilities are clustered and within easy walking distance of one another on the large park-like campus. There is a man-made lake with a bridge that allows students to cross easily. A total of 7 academic buildings, 18 residence halls, a large library, and numerous support buildings surround the quad-like campus. The university has invested more than $130 million since 2004 for construction of new buildings and renovations of older facilities, including academic buildings, residence halls, and dining facilities.

Residential Development

Residential development is varied throughout the town with large tracts of single-family homes interspersed with cluster-style rental apartments, townhomes and condominium complexes. Modest sized single-family homes on small lots dominate the Slackwood neighborhood located in the southern area of the town near the Trenton and Hamilton borders. The area was originally developed to house workers within easy walking distance to nearby factories in Trenton. Most of the structures in Slackwood are small bungalows with some low-rise businesses located along Princeton Pike, Business Route 1 and Route 206. As the residential areas fan out to the north and west side of the township, the homes become much larger on more generously sized lots. In the central area of the township west of the Route 206 corridor, residential development is concentrated near the historic Lawrenceville section. Housing development in this area is characterized by larger single-family homes on large lots and several garden-style apartment complexes and townhouse developments. Homes in the northern section of the community are characterized as larger sized single-family homes on spacious lots. There are no multi-family developments in the northern section of the township.

Multi-Family Developments

There are 32 major multi-family housing complexes serving all incomes levels scattered across the southern and central portions of the township:

- Brookshire Senior Apartments – *100 Forest Ridge Drive*
  - 107-unit 4-story wood frame low income senior 1 and 2-bedroom apartment complex featuring a community room and fitness center near the Senior Center and County Library.
- Berkshire Stewarts Crossing – *1000 Stewards Crossing Way*
  - 240-unit rental apartment homes on a compact site off of Bunker Hill Road featuring 12 10-unit 3-story wood frame buildings featuring 1, 2, and 3-bedroom flats with a clubhouse, pool, tennis courts and fitness center built in 2000.
- Carriage Park at Lawrence – *2000 Colts Circle*
  - 210-unit 4-story wood frame 55, plus 1 and 2-bedroom rental apartment complex built in 2008 and 2018 situated on a compact site in 2 buildings with a clubhouse and outdoor swimming pool.
- Eagles Chase – *Eagles Chase Drive*
  - 204-unit 2-story wood frame 2-bedroom condominium complex contained in 13 buildings built in 1990 near Route 1.
- Eaves Lawrenceville – *1000 Town Court South*
  - Large 632-unit 3-story wood frame 1 to 3-bedroom rental apartment complex featuring an outdoor swimming pool, tennis courts, and fitness center on a compact sire near the Quaker Bridge Mall.
- Eggert's Crossing Village – *175 Johnson Avenue*
  - 100-unit residential apartment complex consisting of attached 1 to 5-bedroom townhouses and garden apartments built in 1974 on 25-acres. 40 of the units are HUD subsidized housing and the remainder are market rate rental units.
- Franklin Arms Apartments – *161 Franklin Corner Road*
  - 120-unit 2-story wood frame 1 and 2-bedroom garden-style apartment complex built in 1968 near Route 1.
- Gatherings of Lawrenceville – *1000 Princess Road*
  - Upscale 102-unit 55 plus 2-story 2 and 3- bedroom wood frame attached townhouse community built in 2006 featuring a clubhouse, fitness center, and outdoor swimming pool on a wooded site with walking trails and a pond.
- Heritage Village – *1970 Brunswick Avenue*
  - 63-unit 3-story age-restricted 55 plus income restricted rental apartment complex featuring a limited number of retail commercial stores on the first floor fronting Brunswick Avenue (Business Route 1), an on-site fitness center and a community room.
- Lawrence Plaza Senior Apartments – *2350 Princeton Pike*
  - 160-unit, 4-story non-combustible 1 and 2-bedroom low income senior apartment building laid out in four wings connected to a central hub.

- Lawrenceville Point – *Point Boulevard*
  - Age restricted 55 plus community built in 2000 with 88 attached quad-unit wood frame single story homes with a clubhouse, fitness center and walking trails on a compact site located off of Bunker Hill Road.
- Lawrence Square Village – *1 Simonelli Court*
  - 820-unit mixed housing community with 280 2-story wood frame 2 and 3-bedroom townhouses and 540 3-story 2-bedroom condominium rental flats on a large site with a clubhouse, tennis courts, and 2 outdoor swimming pools built in 1988.
- Lawrenceville Gardens Apartments – *180 Franklin Corner Road*
  - 174-unit, 2-story wood frame 1 and 2-bedroom garden-style apartment complex built in 1964 near Route 1.
- Liberty Green – *Fountayne Lane*
  - 302-unit mixed community of 184 2-story duplex townhomes and 118 detached single-family homes built in 2002 featuring a community pool and playground.
- The Manors at Lawrenceville – *Manor Boulevard*
  - Large mixed housing subdivision including 112, 2-story wood frame 2 and 3-bedroom apartment-style condominiums, and 172, 2-story townhouses built in 1987 off Lawrenceville-Pennington Road. Site features a clubhouse, pool and tennis courts with access to an adjacent strip mall shopping center.
- Meadow Woods at Lawrence – *Meadow Woods Lane*
  - 140-unit, 2-story wood frame condominium complex with 35, 4-unit buildings on a wooded site with an outdoor swimming pool and tennis courts in the Slackwood section of the township.
- The Mercer at Lawrence Station – *100 Avalon Way*
  - Upscale 312-unit, 3 and 4-story wood frame 1 to 3-bedroom rental apartment complex featuring an outdoor swimming pool and fitness center. Complex offers a number of furnished short-term lease units and is near the Quaker Bridge Mall.
- Project Freedom at Lawrence – *1 Freedom Boulevard*
  - 54 handicap accessible 1 and 2-bedroom Section 8 subsidized attached apartments scattered in 9 single story wood frame buildings on a 10-acre site located off Princeton Avenue in the southern section of the township.
- Society Hill at Lawrenceville – *Wittenborn Drive*
  - 440-unit, 2-story wood frame condominium townhome community on 75 acres featuring a clubhouse, outdoor swimming pool and tennis courts located in the Slackwood section of the township built in 1985.
- Society Hill at Cold Stone Road – *Society Way*

  - 440-unit, 2-story 2-bedroom wood frame condominium townhome community built in 1986 located on a large wooded site off Cold Stone Road.
- Stonerise of Lawrenceville – *Stonerise Drive*
  - 66-unit, 2-story wood frame attached townhome community built in 1989 on a compact site Bergen Street and Gordon Avenue.
- Sturwood Hamlet Apartments – *917 Sturwood Way*
  - 141 unit, 2-story wood frame garden-style apartments built in 1972 on a spacious wooded site off Denow Road.
- Tiffany Woods – *Tiffany Woods Road*
  - 64-unit, 2-story wood frame duplex townhouse complex built in 2002 and placed on a compact site near the intersection of Spruce Street and Princeton Avenue near the Ewing Township border.
- Traditions at Federal Point – *Federal Point Boulevard*
  - 140-unit age-restricted 1 to 3-bedroom single level attached homes completed in 2005 on two concentrated areas separated by greenspace and adjacent to Interstate 295 near Federal City Road.
- Ventana at Lawrenceville – *Schindler Court*
  - 52-unit, 2-story townhouse community completed in 2008 on a very compact site near the intersection of Denow Road and Federal City Road.
- Venue at Cobblestone Creek – *1 Dogleg Lane*
  - Upscale 97-unit, 2-story wood frame townhouse community under construction on a compact site adjacent to the Cobblestone Creek Country Club with access to an outdoor swimming pool, fitness center, golf course, tennis, and clubhouse with dining facilities.
- The Villages – *Shirley Lane*
  - 232-unit, 2-story 2 and 3-bedroom townhomes constructed in 1978 with amenities including a swimming pool off Lawrenceville-Pennington Road.
- Yorkshire Senior Plaza – *100 Cole Lane*
  - 100-unit, 4-story wood frame 1 and 2-bedroom 55 plus rental apartment in a single large building featuring a clubhouse, fitness center, and assess to a community outdoor swimming pool and tennis courts. Built in 2005.
- Yorkshire Village – *Cole Lane*
  - 132-unit, 3-story wood frame 1 and 2-bedroom rental apartment complex in 24 buildings featuring an outdoor swimming pool, tennis courts and a fitness center on a compact site near the Mercer Mall shopping center.
- Westgate Apartments – *550 Lawrenceville Road*
  - 72-unit, 2-story wood frame garden-style apartment complex on a compact 9 building site built in 1962 featuring an outdoor pool.
- White Pines Apartments – *1600 White Pine Circle*

  - 207-unit 2-story wood frame mixed apartment and townhomes complex in 14 buildings built in 1975 adjacent to the campus of Rider University.
- Woodmont Townhouses – *Woodmont Drive*
  - 160-unit, 2-story wood frame townhome community in 16 buildings on a very compact site off Franklin Corner Road near Route 295 featuring a community pool and tennis courts.

Skilled Nursing, Assisted Living and Rehabilitation Centers

- Clover Meadows Healthcare and Rehabilitation Center – *112 Franklin Corner Road*
  - 146-bed, 1-story non-combustible sub-acute rehabilitation and long-term care facility at the intersection of Franklin Corner Road and Princeton Pike.

- Morris Hall – Senior Care Community - *1 Bishops Drive*
  - Large elder care community consisting of several levels of care including:
    - St. Mary's Assisted Living – 78 assisted living suites and apartments including 20 memory care units.
    - St. Joseph's Skilled Nursing Center – 120-bed, 2-story non-combustible long-term care nursing home
    - Morris Hall Meadows Elder Care – Personal care unit set in single level attached wood frame homes equipped with 10 suites with shared dining rooms and kitchens.
    - St. Lawrence Rehabilitation and Senior Housing – 6-story fire-resistive, 116-bed sub-acute rehabilitation center and nursing home.
    - Villa Vianney – 16-unit 2-story wood frame retirement housing for retired priests from the Diocese of Trenton

Hotels, Inns and Motels

There are 9 lodging establishments of varying types scattered across the township:

- Chauncey Hotel & Conference Center - *660 Rosedale Road*
  - Located on the campus of the Educational Testing Service, the 2-story complex includes 100 guest rooms and features conference facilities, fitness center, saltwater pool, and a restaurant.
- Hilton Garden Inn – *1300 Lenox Drive*
  - Newly constructed 107-room, 4-story non-combustible/limited combustible hotel featuring an indoor pool, restaurant and large meeting room in the Princeton Pike Corporate Center.
- The Inn at Glen Cairn – *3301 Lawrenceville Road*

  - Bed-and-breakfast inn located in a historic 2½ story wood frame renovated 1736 Georgian manor house with 5 suites located in the northern section of the township near Princeton.
- Laurie House – *660 Rosedale Road*
  - Educational Testing Service maintains a small 7-unit bed-and-breakfast hotel in an historic 2½ story wood frame hunt clubhouse for corporate employees and guests on the grounds of their large campus.
- Motel 6 – *2995 Brunswick Pike*
  - 104-unit, 2-story ordinary construction motel near the intersection of Franklin Corner Road and Route 1.
- Mount's Motel – *2984 Route 1 North*
  - 28-units located in two 1 and 2-story non-combustible buildings near the intersection of Route 1 and Route 295.
- Quality Inn – *3270 Brunswick Pike (Route 1 North)*
  - 4-story, 116-room fire-resistive hotel featuring fitness room, business center, and breakfast area near the Quaker Bridge Mall.
- Red Roof Inn – *3203 Brunswick Pike*
  - 109-unit, 2-story ordinary construction motel in 3 buildings near the Quaker Bridge Mall.
- Sleep-E Hollow Motel – *3000 Brunswick Pike*
  - 50-unit 1-story ordinary construction motel with 5 separate buildings near the intersection of Routes 1 and 295.

School and College Dormitories

The Lawrenceville School – private boarding and day school located in the historic Lawrenceville district offers 18 dormitory buildings to house 564 boarding and 253-day students in 2-story ordinary construction buildings.

Rider University – multiple student housing options with a total capacity of more than 2,400 students:

- Conover Hall – 3-story ordinary construction dormitory housing 207 students.
- Gee Hall – 3-story ordinary construction dormitory housing 124 students.
- Hank and Bonnie Moore Hall – 3-story non-combustible residence halls housing 72 student in suite and apartment style options.
- Hill Hall – 3-story non-combustible dormitory housing 244 students.
- Kroner Hall – 3-story non-combustible dormitory housing 224 students.
- Lake House – 3-story non-combustible dormitory housing 45 students.
- Lincoln Hall – 3-story non-combustible dormitory housing 175 students in suites.

- Olson Hall - 3-story non-combustible dormitory housing 222 students.
- Poyda Hall - 4-story non-combustible dormitory housing 259 students.
- Ridge House - 3-story non-combustible dormitory housing 37 students.
- Steven Beckett and Sharon McDonald Beckett Village – 3-story wood frame 2 building complex housing 152 students in apartments, suites, and premium doubles.
- Switlik Hall – 3-story non-combustible dormitory housing 124 students.
- Ziegler Hall – 3-story non-combustible dormitory housing 143 students.

Child Day Care Centers and Nursery Schools

There are 11 licensed child day care and preschools located in the township:

- Bright Horizons – *222 Federal City Road*
  - 1-story ordinary construction child day care center with a maximum capacity of 165 children located near Lawrenceville-Pennington Road.
- Explorations Childcare & Learning Center – *1805 Princeton Avenue*
  - 1-story non-combustible child day care center with a maximum capacity of 99 children near the border with Trenton.
- Lakeview Child Care – *4 Princess Road*
  - 1-story non-combustible child day care center with a maximum capacity of 120 children located in the Princess Road Office Park.
- Lawrence Day School – *510 Lawrence Square Boulevard*
  - 1-story non-combustible child day care center with a maximum of 129 children adjacent to the Lawrence Square Village apartment complex.
- Lawrence Road Presbyterian Church Nursery School – *1039 Lawrence Road*
  - 1-story non-combustible child day care center with a maximum capacity of 35 children and part of a church complex.
- Lawrenceville Presbyterian Cooperative Nursery – *2688 Main Street*
  - 2-story ordinary construction child nursery school with a maximum capacity of 60 children in the historic Lawrenceville section of the township.
- The Lawrenceville School – Children's Center – *2500 Main Street*
  - Child day care center with a maximum capacity of 45 children on the campus of a private school in the Lawrenceville section of the township.
- The Learning Experience – *129 Denow Road*
  - 1-story ordinary construction child day care center with a maximum of 70 children near the Federal City exit from Route 295.
- The Learning Experience – *4126 Quaker Bridge Road*

  - 1-story ordinary construction child day care center with a maximum capacity of 180 children near the Quaker Bridge Mall.
- Little Kids College – *1558 Brunswick Pike*
  - 1-story non-combustible child day care center with a maximum capacity of 60 children in the Slackwood section near the border with Trenton.
- Tomorrows Child Montessori School – *110 Federal City Road*
  - 2-story wood frame childcare and nursery school with a maximum capacity of 60 children near Route 295.

Commercial Development

Commercial development is scattered thorough the community and is concentrated in areas located along several north-south transportation corridors:

Brunswick Pike (Business Route 1) – Commercial development is extensive along the Brunswick Pike corridor as it heads north from the Trenton to the border with West Windsor Township:

Starting at the Route 206/Brunswick Pike Circle at the Trenton border, mixed commercial occupancies line the route. In the southern Slackwood section, the occupancies are generally smaller individual commercial business, including auto repair shops, gas stations, fast food restaurants, and drugstores. Several small strip mall-type shopping centers which contain a variety of mercantile businesses are located along the route. The Slackwood Volunteer Fire Company station is also located in this area. As the roadway passes the entrance to Colonial Lake Park, more intensive commercial development is evident in the large Lawrence Shopping Center, a 400,000 square foot 1-story strip mall-style shopping center.

Continuing north the route enters an area dominated by two large automobile dealerships, Haldeman Lexus and Route 1 Chrysler Dodge Jeep. Aurohealth LLC occupies a large pharmaceutical packaging and distribution warehouse off Magnetic Drive. Several other large commercial buildings including Worldwide Wholesale Floor Coverings, Mrs. G Appliances, and other smaller mercantile occupancies are scattered along the neighborhood. A post office, public storage facility, restaurants, and a drug store are also located along this area. The Lawrence Headquarters Branch of the Mercer County Library is located north of East Darrah Lane. A strip mall consisting of multiple small mercantile shops completes the Business Route 1 section before it merges with the Trenton Freeway/Route 1 as it continues north.

This area is dominated by several automobile dealerships including Mercedes Benz, Toyota, Ford, and Volvo franchises along with several used car lots. A large storage

facility along with a fitness center, truck rental shop, fast food, tire dealership, car wash, and gas stations line the route. A large packaging plant, Bway Corporation, is located on Litho Road. The area north of the intersection of Bakers Basin Road includes three motels, an Acura automobile dealership, a restaurant, and car repair shops before meeting with Interstate Route 295.

North of Route 295 are car repair shops, two motels, a NJ Motor Vehicle Commission inspection station, Buick GMC, Cadillac and Chevrolet automobile dealerships, and numerous fast food restaurants and small mercantile shops.

The Quaker Bridge Mall, a two-level one million square foot regional shopping mall with anchor stores JC Penney, Macy's and Lord & Taylor, is located near the intersection of Route 1 and Interstate Route 295. Located across Route 1 is the Mercer Mall, a 1-story, 50-store, 500,000 square-foot strip mall-style shopping center. Brunswick Pike crosses Interstate Route 295 while continuing north into West Windsor.

Princeton Pike (County Route 583) – Commercial development along Princeton Pike is varied as it makes its way north from the shared border to the south with Ewing Township and the City of Trenton:

Starting at the intersection with Spruce Street, the route is dotted with small commercial occupancies including fast food restaurants, gas stations, auto repair shops, banks, and small strip stores until the intersection with Route 206. Continuing north, the route enters a more residential area where it passes the Slackwood Elementary School until it reaches the secondary entrance to the Lawrence Shopping Center. Heading north, the pike passes the large combined campuses of Lawrence Middle School and Lawrence High School.

Continuing north through a densely populated area of modest single-family homes, the roadway passes the Benjamin Franklin Elementary School. A concentrated number of commercial properties are clustered around the intersection of Franklin Corner Road. The Executive Plaza Office Park, a nursing home, and the Princess Road office park area are located just to the south of the intersection with Interstate Route 295.

North of Route 295, the route passes the large campus of Bristol-Myers Squibb Princeton Pike Biopharmaceutical Research and Development Center. Across the street, the Princeton Pike Corporate Center features several large office buildings in an office campus setting.

North of Meadow Road, the route passes through a sparsely populated area that includes an organic vegetable farm before entering an area dominated by large estate-style homes

on very large lots before crossing into Princeton, north of Province Line Road. The campus of The Chapin School, a private elementary school, is located just south of the township border.

Lawrenceville Road (Route 206) – commercial development is concentrated in the southern portion of the township along Lawrenceville Road:

Beginning at the traffic circle at the Ewing/Trenton border, the road heads north while passing through an area of mixed residential and commercial development containing mercantile and office buildings. Several of these structures have been converted to commercial space from previous residential use. A large condominium townhome community, Society Hill at Lawrenceville on Wittenborn Drive, fronts the roadway.

Crossing Princeton Pike, the route continues through a small residential area that includes a garden apartment complex before passing by the campus of Notre Dame High School and several small commercial occupancies. Continuing north, the road enters an area of single-family residences mixed with small commercial occupancies. The Lawrence Road Fire Company station, the Church of St Ann complex, and St. Ann elementary school are also located in this area.

As the route curves to the northeast, it passes the entrance to a large military complex on Eggert Crossing Road that contains a New Jersey National Guard Armory, New Jersey Department of Military and Veterans Headquarters office, and a military museum. The Lawrence Intermediate School is also located nearby. Continuing north, the roadway passes through a residential area of older homes and the Adath Israel Congregation Synagogue.

Continuing north, the large campus of Rider University dominates the area along with the Cobblestone Creek Country Club golf course, and the Lawrence Township municipal complex. A new townhouse development is under construction near the entrance to the country club. The road then meets Interstate Route 295 and heads north.

The large elder care campus of Morris Hall is located immediately north of Route 295. On the opposite side of the road, a large complex of newly constructed elder care shared residences called Morris Meadows at Lawrenceville is located near the intersection with Franklin Corner Road. There is also a bank, gas station, and convenience store at this intersection.

Heading north, the route enters another area of residential homes before entering the Lawrenceville Main Street Historic District, a collection of 18th and 19th century structures including a tavern, farmhouses, and a church. The portions of spacious campus of The

Lawrenceville School are also part of the district. Several small restaurants and stores dot the street in this area as it continues northward. The Lawrenceville Fire Company station is also located near this area.

The roadway continues northward through an area of modest residential homes before giving way to two farming fields: Village Farms, a vegetable grower; and Cherry Grove Farm, a dairy farm and creamery producing farmstead cheeses. North of Carter Road, the route passes the campus of the private Princeton Junior School before entering an area of large estate-style single family homes set on large lots. The Lawrenceville Campus of Bristol-Myers Squibb dominates the area, and is set on a 280-acre site which features 1.67 million square feet of building space. The facility includes research and development laboratories, offices, a training center, and a childcare center set around a 15-acre lake. The route passes through an area occupied by a landscape nursey and a farm stand before crossing into Princeton shortly after passing north of Province Line Road.

Large Commercial Developments

Quaker Bridge Mall is a two-level non-combustible super-regional shopping mall located in the Clarksville section of the township. The upscale complex is located south of the intersection of Quaker Bridge Road and Brunswick Pike (Route 1) and a short distance north of Interstate Route 295. Built in 1975, the facility offers more than 1 million square feet of retail space making it one of the largest shopping malls in the state. It currently has 116 retail establishments. Managed by the Simon Property Group, one of the leading mall management firms in the United States, the complex is anchored by several large department stores including Lord & Taylor, Macy's, and JCPenney. A fourth anchor store, Sears, closed in 2018.

The enclosed arcade-style mall is arranged on two levels with stores fronting a wide main concourse on the lower level and elevated walkways serving stores on the upper level that overlook the lower level. Several smaller two-level open corridors radiating from two central atriums lead to additional retail spaces and the anchor stores. The facility offers a wide variety of mercantile, service and restaurant occupancies. The complex is surrounded by a large surface parking lot offering more than 6,500 parking spaces. The building received a major renovation completed in 2012 upgrading the interior finishes and adding several new elevators and escalators. A food court was also added to the upper level. The management firm projects that the space formerly occupied by the closed Sears department store will be demolished and a new addition will be built in its place to provide additional retail space.

Mercer Mall is a large one-story non-combustible open strip-style shopping mall located west of the intersection of Quaker Bridge Road and Brunswick Pike (Route 1) and a short distance north of Interstate Route 295. The 50-acre complex was opened in 1975 and offers more than 500,000 square feet of retail space. The facility features more than 50 mercantile, service and restaurant occupancies including several anchor stores including a ShopRite supermarket, Raymour & Flanigan furniture store, Bed, Bath & Beyond homeware, and Nordstrom Rack clothing stores. Detached mercantile occupancies are also located scattered across the large 2,300 space surface parking area including DSW shoes, several restaurants, and a Tesla automobile showroom. The complex underwent several expansions and renovations in 2014 and additional renovations are taking place as new tenant stores are added.

Lawrence Shopping Center is a large 1 story, non-combustible open strip-style shopping center located at 2495 Brunswick Pike (Business Route 1) in the southern section of the township. The almost 400,000 square foot complex on the 47-acre site was built in the 1960's and is current undergoing renovations including a facelift of the front façade of the main building. About half of the tenant spaces are open and operating with the remaining spaces under renovation. Anchor occupancies include a Burlington clothing store, a Staples office supplies store, and multiple other smaller mercantile occupancies. One of the lager retail spaces formerly housing an Acme supermarket is expected to be occupied this year by new supermarket tenant. Six standalone one-story non-combustible retail spaces are scattered across the parking area from the main building and include a former furniture store that will demolished and replaced with a newly constructed LA Fitness Center equipped with an indoor swimming pool. The site also features a large parking area with more than 1,000 surface parking spaces.

Educational Testing Service (ETS), the world's largest private nonprofit educational testing and assessment organization, is located on a spacious 376-acre campus at 660 Rosedale Road in the extreme northern corner of the township. The site is the corporate headquarters for the company that develops various standardized tests for K-12 and higher education including the SAT for college undergraduate applicants and the GRE for post-graduate admissions.

The complex consists of multiple low-rise office buildings of non-combustible construction in 10 research halls arranged around a retention pond. The company is sensitive to the environmental issues of its site and has opened walking and bike paths to the public for recreational use. The site was initially developed with several office buildings on a wooded site in the northern half of the site. Three additional non-combustible office buildings were added around a retention pond in 1995 along with an internal loop access road. The site also features a hotel and conference center. Additional office construction on the site is under consideration.

Bristol-Myers Squibb Lawrenceville Campus occupies a large 280-acre site at near the Princeton border along Lawrenceville Road and Province Line Road that opened in 1971. The complex includes 1.67 million square feet of building space consisting of 13 major biopharmaceutical research and development laboratories and office buildings, and several support buildings occupied by more than 2,000 employees. Access to an on-site childcare center is offered to company employees. Surface parking areas are arranged around the buildings. A helipad is also located on the property. The facilities are situated on a partially wooded site with walking trails and a 15-acre lake. The company is committed as a good neighbor to the community and is a founding sponsor of the Lawrence Hopewell Trail, two segments of which pass the campus and are open to the public.

Bristol-Myers Squibb Princeton Pike Campus occupies a 650,000 square foot 4-story glass and steel fire-resistive building situated north of Interstate 295 at 3401 Princeton Pike in the central portion of the township. The new complex opened in November 2016 and houses more than 2,500 employees working in global product development and supply. The building features four large 4-story office wings connected to a central open atrium. The structure is surrounded by surface parking lots encircled by an interior loop access road. The location also features a network of walking trails that is open to the public. The company has also committed to preserving the Brearley Oak, a 275-year old black oak tree located on the property near the complex entrance on Princeton Pike. The site is also the southern terminus of the Lawrence Hopewell Trail, a 22-mile hiking and biking loop trail that connects the BMS Princeton Campus with several area town and county parks and the sister BMS Lawrenceville Campus to the north.

Utilities – Water, Electric, Natural Gas, Wastewater, Communications.

Public Water Service is provided to township residents and businesses by two major local water utilities:

- Trenton Water Works services the southern half of the township including the Slackwood and central township areas generally south of Interstate Route 295.
- New Jersey American Water services the northern area of the township north of Interstate Route 295.
- A number of properties along the Hopewell border in the northern portion of the township are served by individual private wells.

Electric Service is provided to township residents and businesses by Public Service Electric and Gas (PSE&G).

Natural Gas Service is provided to most areas of the township by (PSE&G). Certain areas of the northern portion of the township do not have natural gas service.

Wastewater Treatment is provided by the Ewing-Lawrence Sewerage Authority plant located at 600 Whitehead Road. The authority operates a 16-million gallon per day advanced secondary wastewater treatment plant that serves both townships. The large office campuses in the northern section of the town provide their own on-site wastewater treatment.

Communication Services in the township are provided by several television and fiberoptic companies including Xfinity Cable TV, Optimum Cable TV, and Verizon Fios fiberoptic service, and Direct TV satellite service.

Parks, Recreational and Open Spaces

The Lawrence community enjoys an extensive array of public parks, trails and greenways that are dispersed across the municipality:

- Carson Road Woods – *48 Carson Road*
  - 183-acre preserved forest and farmland municipal park with over 4 miles of marked hiking trails connecting to the Lawrence Hopewell Trail.
- Central Park – *66 Eggert Crossing Road*
  - Features 3 lighted tennis courts, soccer, football and lacrosse fields; a playground, basketball courts, and several softball and baseball diamonds. The park has access to the adjacent Lawrence Intermediate School.
- Colonial Lake Park – *Brunswick Pike*
  - A 25-acre lake serves as the focal point of this township park that includes 3 tennis courts, jogging paths, and playground equipment. The lake is stocked each spring by the New Jersey Division of Fish and Game. The area is located south of the Lawrence Shopping Center.
- Delaware & Raritan Canal State Park
  - A 5.3-mile portion located in the township that is part of the 77-mile recreational trail that runs along the banks of the former shipping canal that begins at the Delaware River in Trenton and terminates at the Raritan River in New Brunswick. The linear park in the township runs north traversing the west bank of the canal and connects with the Lawrence Hopewell Trail.
- Drexel Woods Park – *Drexel Avenue*
  - 36-acre, wooded site featuring several hiking trails leading to the banks of the Shabakunk Creek and the Lawrence Nature Center. The township park is south of the Eldridge Park School in the southern end of the township.
- Hamnett Park – *Ohio Avenue*

  - A small open space township park with playground equipment in the southern end of the township.
- Johnson Trolley Line North
  - 1-mile rail trail running from Gordon Avenue to Denow Road following the route of the former Johnson “Fast Line” trolley of the Trenton-Princeton Traction Company.
- Laurie Chauncey Trail
  - Located on the grounds of the Educational Testing Service campus in the extreme northern portion of the township, the trial circles around the campus and connects with the Lawrence Hopewell Trail.
- The Lawrence Hopewell Trail
  - A 20-mile multipurpose bicycle and pedestrian path that runs through public and private properties in Lawrence and Hopewell Townships. The trail connects several municipal and county parks in the township as well as the campuses of the Educational Testing Service, Bristol-Myers Squibb Lawrenceville campus, and Bristol-Myers Squibb Princeton Pike campus. The trail also connects with the Delaware & Raritan Canal State Park
- Lawrence Veterans Park – *Oaklyn Terrace*
  - 20-acre heavily wooded municipal park, a picnic area, 3 tennis courts, a lighted bocce court, playground structures and a jogging path connecting to the campus of the Lawrence Middle School.
- Loveless Nature Preserve
  - 45-acre preserved open space of forest, streams and old tree-farm fields directly next to Central Park in the central section of the township.
- Maidenhead Meadows Park – *Princeton Pike*
  - 345-acre park located north of the Princeton Pike Corporate Center. This municipal preserved space is the largest parkland parcel in the township. The park includes the Maidenhead Meadows, the Brearley House, Princessville Cemetery, a former tree nursery, and open fields. The park abuts 82 acres of the Delaware & Raritan Canal State Park and connects with the Lawrence Hopewell Trail.
- The Pole Farm – *Cold Soil Road*
  - 812-acre county park of woods and meadows in the northwestern section of the township with 5.3 miles of hiking trails and picnic areas. The park occupies the site of a former AT&T overseas radio telephone station that featured rows of telephone towers that came to be known as the Pole Farm. The park is the largest component of the Mercer County Park Northwest and connects with the Lawrence Hopewell Trail.
- Shipetauken Woods – *Cold Soil Road*

  - 64-acre wooded preserved municipal space with 1.2 miles of hiking trails adjacent to Terhune Orchards in the northern section of the township
- Turtleback Park –
  - 1-mile nature trail running through old-growth forest in South Lawrence. The trail follows the Five Mile Run stream corridor at the bridge on Balsam Drive and terminates at Route 206 across from the campus of Rider University.
- Village Park – *100 Maidenhead Lane*
  - 60-acre municipal park located in the Lawrenceville section of the township. with extensive recreational opportunities including 2 softball fields, 3 lighted soccer fields, 2 lighted tennis courts, volleyball courts, basketball courts, exercise equipment, playground structures and a dog park. The Hopewell Lawrence Trail also passes through the park.

The community is also served by two golf courses:

- Cobblestone Creek Country Club – *2170 Lawrenceville Road*
  - Private 18-hole golf course near the intersection of Lawrenceville Road and Interstate Route 295. The 6,447-yard, 71 par course was recently redesigned and renovated by Bobby Weed, one of the leading golf course designers in the United States.

- Lawrenceville School Golf Club – *2500 Main Street*
  - Public 9-hole golf course built on the grounds of the Lawrenceville School. The 2,852-yard, 35 par course built in 1925 is located north of the main school campus.

TOWNSHIP OF LAWRENCE FIRE DIVISION

Evaluation of Target Hazard Occupancies

Quaker Bridge Mall – *3320 Brunswick Pike*

Two-level non-combustible enclosed shopping mall located in the Clarksville section of the township. The upscale complex is located south of the intersection of Quaker Bridge Road and Brunswick Pike (Route 1) and a short distance north of Interstate Route 295. Built in 1975, the facility offers more than 1 million square feet of retail space making it one of the largest shopping malls in the state. It currently has 116 retail establishments. Managed by the Simon Property Group, one of the leading mall management firms in the United States, the complex is anchored by several large department stores including Lord & Taylor, Macy's, and JCPenney. A fourth anchor store, Sears, closed in 2018.

The enclosed arcade-style mall is arranged on two levels with stores fronting a wide main concourse on the lower level and elevated walkways serving stores on the upper level that overlooks the lower level. Several smaller two-level open corridors radiating from two central atriums lead to additional retail spaces and the anchor stores. The facility offers a wide variety of mercantile, service, and restaurant occupancies. The complex is

surrounded by a large surface parking lot offering more than 6,500 parking spaces. The building received a major renovation which was completed in 2012, upgrading the interior finishes and adding several new elevators and escalators. A food court was also added to the upper level. The management firm projects that the space formerly occupied by the closed Sears department store will be demolished and a new addition will be built in its place to provide additional retail space.

Fire protection systems include a full sprinkler system arranged in several risers covering all areas of both retail spaces and storage areas and fire standpipe outlet stations strategically placed throughout all areas. The building is covered by a sophisticated zoned fire alarm system that is monitored by a central station alarm monitoring company. The complex is also patrolled by a private security force 24 hours a day. Several of the large anchor stores have HVAC systems that can be utilized to control smoke spread in their individual areas. The open-area atrium style of the building poses difficulties for emergency responders should a fire or hazardous materials incident occur in the open structure. This is due to the potential likelihood of unimpeded smoke or fumes spreading throughout the structure.

Any major fire or hazardous materials release occurring in the structure will quickly overtax the local fire forces and will require the assistance of fire mutual aid resources. These factors, as well as the high value of the occupancy and the potential for high occupant loads (especially during holiday shopping periods) makes the complex a significant target hazard concern for the local fire department.

Lawrence Shopping Center - *2495 Brunswick Pike (Business Route 1)*

Large 1-story non-combustible open strip-style shopping center located in the southern section of the township. The almost 400,000 square foot complex on a 47-acre site was built in the 1960's and is currently undergoing renovations including a facelift of the front façade of the main building. More than half of the tenant spaces are open and operating with the remaining spaces under renovation. Anchor occupancies include a Burlington clothing store, a Staples office supplies store, and MJM Designer Shoes. Additionally, there are multiple other smaller mercantile occupancies completing the center. One of the larger retail spaces formerly housing an Acme supermarket is expected to be occupied this year by a new supermarket tenant. Six standalone 1-story non-combustible retail spaces are scattered across the parking area from the main building and include a former furniture store that has been demolished and will be replaced with a newly constructed 34,000 square foot LA Fitness Center that will feature a hot yoga room. The site is arranged around a large parking area with more than 1,000 surface parking spaces.

Presently, only about half of the occupancies in the complex are covered by a full fire sprinkler system and each occupancy is covered by a fire alarm system. As occupancies change or are renovated, the township is requiring that the fire protection systems be upgraded. During a recent renovation, it was found that the façade was supported by unprotected wood framing that ran the length of the structure at the front parapet wall. Should a fire occur in this unprotected void, it would pose a very difficult extinguishment challenge and could potentially expose the roof steel structure to spreading fire.

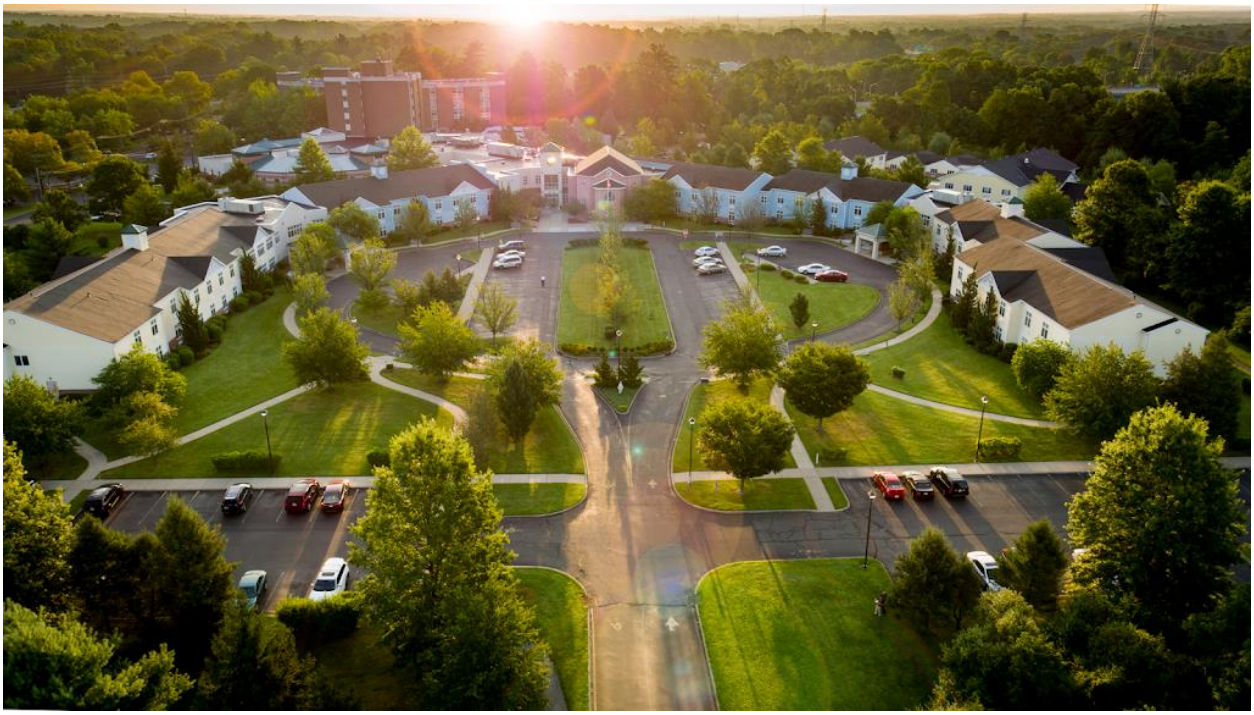
The entire complex is constructed of non-combustible concrete block walls with unprotected lightweight steel columns supporting bar joist roof members and steel roof decking. This type of unprotected steel roof construction poses a risk to the responding fire forces should a fire involving the high fire load expected in certain mercantile occupancies overwhelm the fire sprinkler system. The exposed steel roof support system would be vulnerable to an earlier collapse under such conditions. The large open floor areas featured in these types of occupancies also poses an operational challenge to the local fire forces and would require the assistance of fire mutual aid resources.

Mercer Mall – *3357 Brunswick Pike*

The mall is a large one-story non-combustible open strip-style shopping mall located west of the intersection of Quaker Bridge Road and Brunswick Pike (Route 1) and a short distance north of Interstate Route 295. The 50-acre complex was opened in 1975 and offers more than 500,000 square feet of retail space. The facility features more than 50 mercantile, service, and restaurant occupancies. It includes several anchor stores such as: a ShopRite supermarket; Raymour & Flanigan furniture store; Bed, Bath & Beyond homeware; and Nordstrom Rack clothing stores. Detached mercantile occupancies are also scattered across the large 2,300 space surface parking area including DSW shoes, several restaurants, and a Tesla automobile showroom. The complex underwent several expansions and renovations in 2014 and additional renovations are taking place as new tenant stores are occupied.

The complex is covered by a full fire sprinkler system and most of the larger occupancies are covered by independent fire alarm systems. The entire complex is constructed of non-combustible concrete block walls with unprotected lightweight steel columns supporting bar joist roof members and steel roof decking. This type of unprotected steel construction poses a risk to the responding fire forces should a fire involving the high fire load expected in certain mercantile occupancies overwhelm the fire sprinkler system. The exposed steel roof support system would be vulnerable to earlier collapse under such conditions. The large open floor areas featured in these types of occupancies will also pose an operational

challenge to the local fire forces and will require the assistance of fire mutual aid resources.



Morris Hall Senior Care Community – *1 Bishops Drive*

Large elder care complex consisting of several levels of care provided in multiple interconnected buildings of mixed construction types on a large campus near the intersection of Lawrenceville Road (Route 1) and Interstate 295 including:

- St. Mary's Assisted Living
  - 78 lightweight wood frame assisted living suites and apartments including 20 memory care units. The building has full fire alarm and fire sprinkler coverage including a dry pipe system covering the attic spaces.
- St. Joseph's Skilled Nursing Center
  - 120-bed 2-story non-combustible long-term care nursing home. This section has full fire alarm and fire sprinkler coverage.
- St. Lawrence Rehabilitation and Senior Housing
  - 116-bed 6-story fire-resistive sub-acute rehabilitation center. This mid-rise building has full fire alarm and fire sprinkler coverage and features a fire pump. Fire standpipe outlets are located at each level in the stairwells.

- Villa Vianney
  - 16-unit 2-story lightweight wood frame residence for retired clergy from the Diocese of Trenton. The building has full fire alarm and fire sprinkler coverage including a dry pipe system covering the attic spaces.

Located a short distance away on Franklin Corner Road on a separate site:

- Morris Hall Meadows Elder Care
  - Nursing care unit set in 6 single level detached homes each equipped with 10 suites with shared dining rooms and kitchens. The recently completed complex is of lightweight steel frame construction and each structure is covered by independent fire alarm and fire sprinklers systems.

A serious fire or hazardous materials release in any of the patient care sections of the complex would pose serious challenges to the local fire forces as they will be severely taxed should a large number of limited mobility patients need to be evacuated from the site. A serious fire in an assisted living/nursing home complex in West Chester PA in 2017 resulted in the deaths of four residents and the evacuation of over one hundred patients. More than 300 emergency responders were required to contain the fire and carry out the evacuation of the large number of residents in freezing weather. A coordinated response of county and regional fire and EMS agencies would be expected should an incident occur in this occupancy.

Lawrence Industrial Park – *TLV Part Export – 40 North Enterprise Avenue*

Large, mostly vacant, 2-story ordinary construction factory building complex located on a cramped site wedged between the Trenton Freeway, the Delaware & Raritan Canal, and the Assunpink Creek on the border with Hamilton Township. The facility was once the site of an auto brake parts manufacturer and appears to have been neglected and vandalized as evidenced by numerous unsecured openings. An auto salvage operation that exports auto parts to Europe and Asia is operating in the rear of the main building. However, the company was facing an April 2020 eviction order. The site has very limited access, available only from the Enterprise Avenue side of the complex. Fire officials report that the fire sprinkler systems are operational but are presently dry pipe systems. The fire alarm system is in full service.

The building has been marked by fire officials with unsafe building signage indicating that interior conditions for firefighting are extremely hazardous. Fire officials also report that the roof in several areas is decaying. The site reportedly has environmental hazards due to a long history of heavy industrial manufacturing on the site. The cleanup of the site was deemed complete by NJDEP recently. The current auto salvage operation appears to be storing large amounts of salvaged vehicles and auto parts outdoors in the rear yard of the site, prompting concerns that motor fluids and fuel may be leaching into the soil of

the unpaved area. Fire operations would be challenging for the local fire forces and would require the use of extensive fire mutual aid due to the hazards present, the limited access to the site and the current condition of the buildings. While immediate exposures are few -- with the notable except of a large recycling business to the immediate south of the complex -- a residential neighborhood is located across the creek in Hamilton Township to the east.

Hydrocarbon Technology & Innovations LLC – *1501 New York Avenue*

This site is a chemical research and development company that specializes in the production of clean energy products, mainly from the conversion of heavy crude oil and coal into high quality specialty distillate fuels. The company operates a 2-story mixed non-combustible and mill construction laboratory building that is located in an industrial zone along the banks of the Delaware & Raritan Canal in the southern portion of the township. The site also features a 10-story industrial catalytic reactor in the rear of the property that has not been in use for years. Fire officials report that the site stores limited amounts of hazardous materials in the laboratory, however, an outside trailer that stores up to 5000 lbs. of extremely flammable compressed liquid hydrogen is located in the rear of the complex.

Due to the nature of the chemical processes onsite, the complex poses a high risk to first responders should a fire or hazardous materials release occur on the site. Control and suppression of such events would be a challenge for local first responders and would

require the assistance of fire and HazMat mutual aid resources. The site is also located next to the canal which is a raw water source for public drinking water in numerous central New Jersey communities. Runoff from fire suppression operations would have to be controlled and contained utilizing containment resources available onsite. The site is also adjacent to a residential area in the township less than 600 feet to the west.

New Jersey Lottery Division Headquarters – *1333 Brunswick Avenue*

A large office building located at the Business Route 1/Route 206 traffic circle in the southern portion of the township. The multi-tenant 2-story non-combustible building features a steel bowstring roof over the section of the building occupied by the offices of the Lottery Commission. The building is covered by full fire sprinkler and fire alarm systems. Due to high value and security issues, the building would be considered a moderate risk to responding fire forces.

The presence of a steel bowstring truss supported roof in one section of the building poses a special risk to firefighters should an advanced fire overwhelm the fire sprinkler system. These types of roof supports are prone to early collapse. Other sections of the roof are covered with solar panels, which pose another special risk to firefighters.

Shred-it – *649 Whitehead Road*

1-story ordinary construction masonry warehouse with a heavy wood bowstring truss roof housing a document shredding and paper recycling plant. The 30,000 square foot building houses a transfer station where document shredding collection trucks access the structure to transfer their contents into paper shredding and baling machinery. The building has a full fire sprinkler and monitored fire alarm systems.

The building has a history of suffering fires in the paper shedding process machinery that have required the response of local fire forces. Fire officials report that the company tries to limit the amount of baled waste paper stored in the building before being transferred into trailer trucks.

Should a fire occur in the stock of baled waste paper, the fire sprinkler system may be overwhelmed, allowing the fire to extend to the heavy bowstring truss roof support system. Such roof systems have a well-documented history of causing a sudden collapse of the roof during a fire. Therefore, they pose an extreme hazard to firefighters operating in the interior of the building and on the roof.

Yorkshire Village Seniors – *100 Cole Lane*

100-unit 120,000 square foot 4-story limited-combustible lightweight wood frame 1 and 2-bedroom 55 plus rental apartment complex in a single large L-shaped building featuring a clubhouse, fitness center, and assess to a community outdoor swimming pool, and tennis courts. Built in 2005 adjacent to the Mercer Mall, the building has a full fire sprinkler system, a central fire alarm system, and fire resistive stair and elevator towers. It also features a lightweight wood truss roof with dry pipe sprinkler coverage in the attic space.

Large-area wood-frame truss-roofed buildings of this nature have had a poor track record for fire resistance. This type of construction contains void space created by the wood open-web truss support systems used in the structural components. This type of lightweight wood truss-framed building also has a history of early localized collapse of roof and floor assemblies causing an extreme hazard to entering firefighters.

A serious fire incident occurring in this building will quickly overtax the local fire forces and will require extensive fire mutual aid resources.

Bristol Myers Squibb Princeton Pike – *3401 Princeton Pike*

650,000 square foot 4-story glass and steel fire-resistive office building situated on an open campus encircled by a perimeter access road north of Interstate Route 295 in the central portion of the township. The large complex opened in November of 2016 and houses more than 2,500 employees working in global product development and supply. The building features four large 4-story office wings connected to a central open atrium. The structure is surrounded by surface parking lots encircled by an interior loop access road. The building also has a large basement containing multiple mechanical rooms.

The complex is covered by a full fire sprinkler system with a fire pump and has fire standpipe outlets located in each stairwell. It is also equipped with an advanced fire alarm system that includes a smoke detection and removal system, which covers the 4-story open central atrium. The building is looped by a water supply fire main system with hydrants spaced around the building. The complex has a private security force on duty at all times that is responsible for monitoring and responding to all alarms.

Due to the high occupancy load, the large open atrium that leads to all floor areas, and the high value of the complex, the building would be considered a special hazard occupancy.

Bristol Myers Squibb Lawrenceville - *3551 Lawrenceville Road*

A large 280-acre campus near the Princeton border along Lawrenceville Road and Province Line Road that opened in 1971. The complex includes 1.67 million square feet of building space consisting of 13 major biopharmaceutical research and development laboratories and office buildings, and several support buildings occupied by more than 2,000 employees. Access to an on-site childcare center is offered to company employees. Surface parking areas are arranged around the buildings. A helipad is also located on the property. The facilities are situated on a partially wooded site with walking trails and a 15-acre lake.

All major buildings in the complex are covered by full fire sprinkler systems with a fire pump and have fire standpipe outlets located in each stairwell. The site is also equipped with an advanced fire alarm system that is monitored by a private security force on duty at all times. The complex is looped by a water supply fire main system with hydrants spaced around the site. Each major building has a large basement and is interconnected via a system of underground tunnels. Several buildings contain special hazard areas including radiological sources and a high-energy magnetic resonance imaging room. The corporate wide shared computer server system is also located at the site in the basement level. Several of these special hazard areas are covered by advanced extinguishing agent systems.

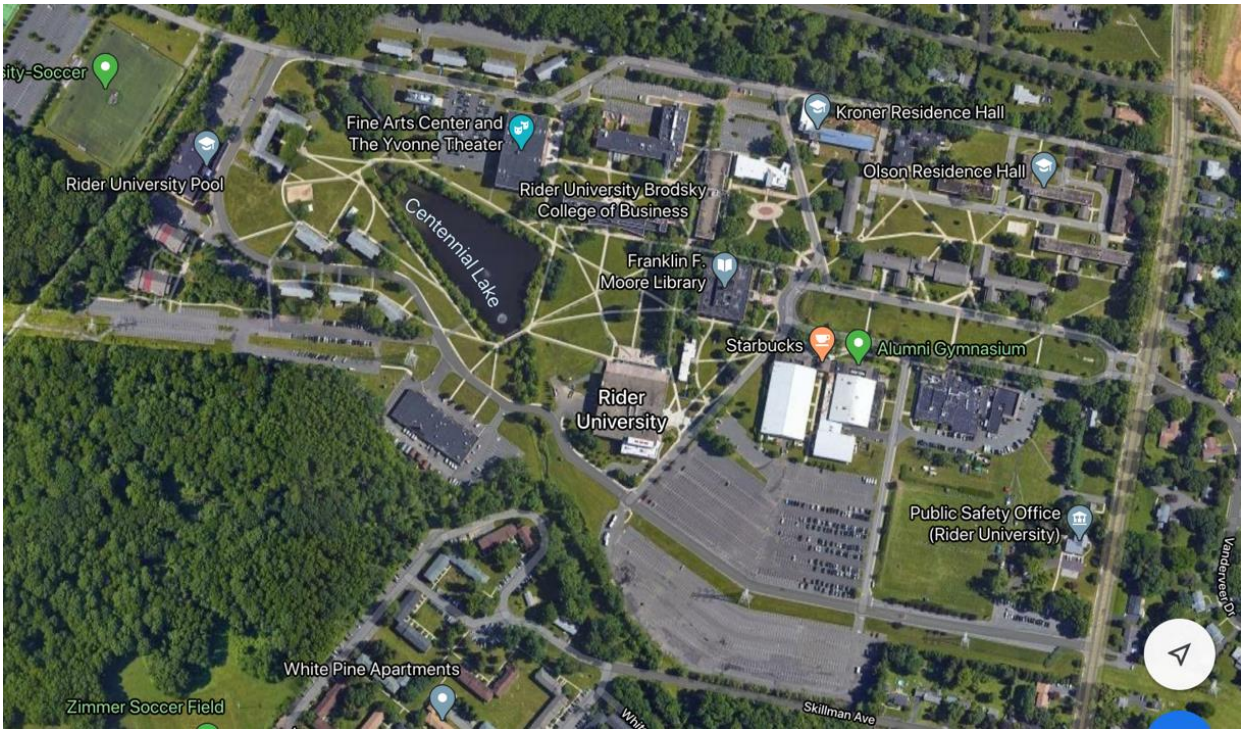
Due to the high occupancy load and the high value of the complex, the building would be considered a special hazard occupancy.

Educational Testing Service – *660 Rosedale Road*

Located on a spacious 376-acre campus at 660 Rosedale Road in the extreme northern corner of the township, the site is the corporate headquarters for the company that develops various standardized tests for K-12 grades and higher education including the SAT for college undergraduate applicants and the GRE for post-graduate admissions. The complex consists of multiple low-rise office buildings of mixed ordinary and non-combustible construction in 10 research halls arranged around a retention pond. The site was initially developed with several office buildings on a wooded setting in the northern half of the site. Three additional non-combustible office buildings were added around a retention pond in 1995 along with an internal loop access road. The site also features a 100-room 2-story non-combustible hotel and conference center.

All major buildings on the campus have full fire sprinkler systems and are covered by a fire alarm system that is monitored by a private security force 24 hours per day. The complex is looped by a water supply fire main system with hydrants spaced around the site.

Due to the high occupancy load and the high value of the complex, the building would be considered a special hazard occupancy.



Rider University – *2083 Lawrenceville Road*

Private university with its main campus just south of Lawrenceville near Interstate Route 295 that served 4,825 undergraduate and graduate students in 2019. The university facilities are clustered around a 300-acre park-like site. A total of 7 academic buildings, 18 residence halls, a large library, and numerous support buildings of varying types of construction surround the quad-like campus. The university has invested more than $130 million since 2004 for construction of new buildings and renovations of older facilities, including academic buildings, residence halls, and dining facilities.

All major academic and resident halls are equipped with full fire sprinkler systems with fire pumps and fire alarm systems that are monitored by a private security force 24 hours a day. The campus has a looped water main system with fire hydrants. Two new residential buildings constructed in 2009 comprising Beckett Village are of lightweight wood truss construction.

Because of the presence of numerous residential dormitory halls, the site presents a special hazard for the local fire forces due to the large number of students housed at the site.

Lawrenceville School – *2500 Main Street*

Coeducational, independent boarding school for ninth through twelfth grades, founded in 1810 that occupies a 700-acre wooded site along Route 206 in the historic Lawrenceville section of the community. The campus served an enrollment of 817 students in the 2018-2019 school year. The site features 38 2-story ordinary construction and non-combustible buildings including academic buildings, athletics facilities and 18 dormitories housing 564 boarding students. All of the major buildings and dormitories have fire sprinkler systems and additional buildings are being upgraded with sprinklers as the they are renovated. All buildings feature a fire alarm system that is monitored by a private site security force. Many of the older buildings date back to the school's relocation to the site in the 1880's and are part of the Lawrenceville Main Street Historic District.

Due to the high occupancy load of boarding students in the dormitory halls, the age of many of the buildings which have been subject to multiple renovations, and the high historic value of the campus, the site would be considered a special risk for the local fire forces.

Motel 6 – *2995 Brunswick Pike*

104-unit 2-story ordinary construction motel located near the intersection of Route 1 and Franklin Corner Road. The building consists of three sections each constructed at various times. One section is comprised of older wood joist construction. The recently updated 30,000 square foot complex lacks a fire sprinkler system.

Due to the lack of a sprinkler system and the possible high life hazard occupancy load, the building would be considered a special hazard.

10 Princess Logistics Center – *10 Princess Road*

Very large distribution warehouse under construction and due for completion in the spring of 2020. The building is constructed of tilt-up concrete walls with lightweight steel interior columns and roof. The 340,000 square foot structure has 40-foot tall ceilings and numerous trailer loading docks. The building will be equipped with a full fire sprinkler system and fire alarm system. Additional fire hydrants will be installed around the perimeter loop access road. The building will not be equipped with a smoke evacuation system. The tenant is as of yet unknown.

This type of mega-warehouse poses significant challenges to the local fire forces due to the sheer size of the structure. While the fire sprinkler system should be able to contain a fire occurring in the contents of the warehouse, responding firefighters will be met with a large volume of cold smoke accumulating in the high-ceiling building that will be difficult to ventilate. Long interior hose stretches will be necessary to complete extinguishment and will place firefighters in a hazardous position. Also, this type of construction is dependent upon the roof structure to provide stability to the concrete exterior tilt-up walls.

Should an uncontrolled fire occur in the interior of the warehouse, the unprotected lightweight steel roof supports may become damaged resulting in localized collapse of the exterior walls and roof. A massive fire destroyed a similarly constructed warehouse in North Brunswick NJ on July 22, 2015. Any type of fire occurring in this building will pose a significant challenge to the local fire forces and will require extensive fire mutual aid

resources. Reference: https://www.tapinto.net/sections/police-and-fire/articles/almost-1k-firefighters-battled-north-brunswick-wa.

Brookshire Senior Apartments – 100 Forest Ridge Drive - 107-unit 4-story lightweight wood frame low income senior 1 and 2-bedroom apartment complex built in 1997 featuring a community room and fitness center near the township Senior Center and Mercer County Library. The 130,000 square foot building is age restricted to senior citizens and a number of apartments are reserved for low income residents and physically challenged seniors. The building is equipped with a fire sprinkler system, standpipe outlets in the stairwells and a fire alarm system. The complex is located on a compact wooded site with only one driveway entrance from East Darrah Lane,

This type of lightweight open web truss wood frame construction has a poor history of fire resistance should a fire occur or extend into the many concealed voids inherent in the design. The roof design also uses an open web lightweight wood truss that presents a large undivided attic space that invites rapid unchecked fire spread over the length of the structure. The attic is covered by a dry pipe sprinkler system.

Coupled with the occupancy of many seniors that may have limited mobility issues, the complex poses a significant risk to the local fire forces and will require extensive fire

mutual aid to combat a fire incident. Reference: https://www.fox2detroit.com/news/6-injured-in-4-alarm-fire-that-destroyed-senior-apartment-building

Carriage Park at Lawrence – *Colts Circle*

210-unit 4-story lightweight wood frame 55 plus 1 and 2-bedroom rental apartment complex built in 2008 and 2018 situated on a compact site in 2 buildings with a clubhouse and outdoor swimming pool. Both buildings feature an open-web lightweight wood truss roof and floor system. Both buildings are equipped with full fire alarm and full fire sprinkler systems, including dry pipe sprinkler systems which cover the large attics.

This type of lightweight open-web truss wood-frame construction has a poor history of fire resistance should a fire occur or extend into the many concealed voids inherent in this type of design.

Coupled with the occupancy of many seniors that may have mobility issues, the complex poses a significant risk to the local fire forces and will require extensive fire mutual aid to combat a fire incident.

Eaves Lawrenceville – *1000 Town Court South*

Large 632-unit 3-story lightweight wood frame 1 to 3-bedroom rental apartment complex built in 1995 featuring an outdoor swimming pool, tennis courts, and fitness center on a very compact site near the Quaker Bridge Mall. Each building is equipped with an individual NFPA 13R residential fire sprinkler system and a fire alarm system but do not have fire standpipes. The 20 building sections in the complex are closely spaced together and will require long hose line stretches to access many of the apartments placed facing the interior courtyard green spaces. The stairwells are open and unprotected at all levels which can allow for rapid fire spread.

This type of lightweight open-web truss wood-frame construction has a poor history of fire resistance should a fire occur or extend into the many concealed voids inherent in the design. The roof design also uses an open-web lightweight wood truss system which presents a large undivided attic space that invites rapid unchecked fire spread over the length of the structure.

While the building sprinkler system is designed to control a fire in the tenant spaces while allowing for the egress of occupants, the system is not designed to protect the building or firefighters who will be required to enter the structure to complete extinguishment. This type of construction is also prone to early structural failure and collapse during a fire. The closely spaced buildings present an exposure hazard to adjoining structures.

This complex is similar in design to the Avalon apartment complex in Edgewater NJ on January 21, 2015 that suffered a catastrophic fire that displaced more than 1000 residents and left 500 tenants homeless. Due to these multiple issues, the complex poses a significant risk to the local fire forces and will require extensive fire mutual aid to combat a fire incident. Reference: https://www.nbcnews.com/video/massive-fire-at-edgewater-s-avalon-apartments-strands-hundreds-387909187921

Lawrence Plaza Senior Apartments – *2350 Princeton Pike*

160-unit 4-story fire-resistant 1 and 2-bedroom low-income senior apartment building laid out in four wings connected to a central hub located near the Lawrence Shopping Center. The building is equipped with a full fire sprinkler system, fire standpipes in the stairwells, fire resistive enclosed stairwells and a central fire alarm system.

The height of the building at 4-stories will complicate efforts to evacuate senior residents with mobility issues. Due to these factors, the complex will pose a significant hazard to the local fire forces and will require extensive fire and EMS mutual aid.

The Mercer at Lawrence Station – *100 Avalon Way*

An upscale 312-unit 3 and 4-story wood frame 1 to 3-bedroom rental apartment complex built in 1994 featuring an outdoor swimming pool and fitness center. Complex offers a number of furnished short-term lease rental units and is near the Quaker Bridge Mall. The buildings are equipped with individual residential NFPA 13R fire sprinkler systems and a fire alarm system, but do not have fire standpipes. The buildings are spaced closely together and will require long hose line stretches to access many of the apartments placed facing the interior courtyard green spaces. The building stairwells are open and unprotected at all levels which can allow for rapid fire spread. Some units feature a second-floor loft floor plan that may pose a challenge to firefighters searching for occupants during a fire in one of these apartment layouts.

This type of lightweight open-web truss wood-frame construction has a poor history of fire resistance should a fire occur or extend into the many concealed voids inherent in the design. The roof design also uses an open-web lightweight wood truss system that presents a large undivided attic space which invites rapid unchecked fire spread over the length of the structure.

While the building sprinkler system is designed to control a fire in the tenant spaces which allows for the egress of occupants, the system is not designed to protect the building or firefighters who will be required to enter the structure to complete extinguishment. This type of construction is also prone to early structural failure and collapse during a fire. The

closely spaced buildings present an exposure hazard to adjoining structures. Due to these multiple issues, the complex poses a significant risk to the local fire forces and will require extensive fire mutual aid to combat a fire incident.

Costco Wholesale – *4100 Quaker Bridge Road*

1-story non-combustible 156,000 square foot retail warehouse store located south of the Quaker Bridge Road. The store includes bulk food items, clothing, furnishings, a liquor store, a pharmacy, an optical services section, a tire and installation center, and a 16-pump gas station on a separate lot near the front of the site. The large area building is constructed of concrete block and steel with an open web bar joist metal roof and was completed in 2016.

This type of large open area occupancy presents several challenges to responding fire forces. While the building is equipped with all required fire protection features, fire operations in these types of occupancies require specialized training and equipment to effectively suppress fires. While the fire sprinkler system -- assuming that it has been properly designed -- installed and maintained by the building owner, is intended to contain a fire within the structure, it still falls to local firefighters to enter the structure to complete

final extinguishment of the fire and conduct searches for any occupants that may be still in the building. This operation entails the use of long hose line stretches and safety search lines, and multiple thermal imaging devices by the fire suppression forces. Because the fire sprinkler system will ideally subdue the spread of the flames, vast amounts of smoke will be generated from the partially extinguished and now smoldering combustible contents. The smoke and other toxic products of combustion will tend to accumulate in the structure due to the relatively high and open ceiling. Should the structure not be equipped with an automatic smoke evacuation system, it falls to the fire department to remove this smoke, either by forcing the smoke out of the structure using portable ventilation fans or manually opening any ventilation points on the roof of the structure.

Should the sprinkler system fail to effectively control the fire, the high heat and flame generated by the large amount of combustible stock in the store will weaken the exposed unprotected steel roof support structure. Such conditions will pose a collapse hazard to firefighters operating both inside the store or on the roof. Due to the sheer size of the structure, any significant fire occurring in the building will require the use of extensive fire mutual aid resources. Because of these conditions, the building poses a special hazard to the local fire forces.

Williams-Transco Gas Pipeline Compressor Station – *Cold Soil Road*

High pressure natural gas pipeline transmission valve station located on the northern border of the township near Stony Brook Creek. The site is part of an interstate petroleum products transmission line that runs from the Marcellus Shale natural gas fracking fields in north central Pennsylvania to multiple distribution sites along the Mid-Atlantic and Gulf Coasts of the United States. The site is located in an isolated area; however, it is within 500 feet of the Poe Road residential area. It is also adjacent to the Stony Creek which is a tributary of the Millstone River which ultimately drains into the Raritan River. The area is also zoned for environmental protection

Should an uncontrolled leak or spill occur at the site, control of the escaping flammable product would be a challenge for the local fire forces.

Projected Development in the Township

Review of Township Master Land Use Plan

Part of the process for determining the emergency services needs of a community is examining the likelihood and probability of additional land use development of vacant parcels and the redevelopment of existing parcels in the municipality. Additional development and/or redevelopment of existing land use should be recognized as a major determining factor in the projected workload of an emergency services agency. Governing bodies need to consider the pressure that additional occupancies and populations place on local fire, rescue, EMS and law enforcement. Additional funding needed for staffing, equipment, and facilities should be an integral part of the consideration process when municipal officials are reviewing planning and zoning applications within their borders.

The Township had an estimated 2018 residential population of 32,794 according to US census data. The median age was 40.4 years with 52% female and 48% male. Per capita income was $47,192 and median income was $103,327. 5% of the population was below the poverty line. The average commute time to work for residents was 26.8 minutes with 74% driving alone. There were 12,282 households in the Township with the average household size of 2.5 persons. There were 13,175 housing units with 67% owner occupied and 32% renter occupied. 68% of the housing units were single family dwellings with the balance of 32% multi-family dwellings. The median value of owner-occupied housing units was $312,500.

Lawrence Township has long supported responsible planning to shape and focus the economic forces leading to the development and redevelopment of the municipality. The Township has a history of adopting land use policy that stretches back into the 1980s.

The adoption of a Master Land Use Plan is a requirement in New Jersey under state statutes that govern municipal land use law. The study team was provided with a copy of the Township Master Plan document covering the time period from 1995 through 2013 that included the initial report as well as periodic reexaminations of the plan to assist in this assessment.

Following the adoption of a comprehensive Master Plan in 1995, the municipality re-visited the plan periodically and made revisions and adjustments as needed. The 1998 reexamination report included recommendations to amend several parcels previously zoned for residential development to Environmental Protection 1 and 2 zoning which required a less dense concentration of homes in residential developments. The report also recommended that several parcels be designated as open space.

Revisions made between 1999 and 2005 provided for several development sites to be included as part of the township's affordable housing obligations (COAH). These amendments added the Yorkshire Village senior apartments and the Project Freedom apartment complexes, as well as adding numerous housing units in existing and planned apartment complexes located throughout the community. Several of these amendments were made as part of an agreement with the City of Trenton to transfer some of the Township's COAH obligations to the city.

Amendments in 2005 included the rezoning of a large parcel along the south side of Quakerbridge Road near the West Windsor border that was previously zoned as Office Industrial to Planned Residential Development. This parcel change allowed for the construction of the high-density Yorkshire Village mixed townhome and single-family housing development in this area.

In 2006, the Planning Board adopted amendments that allowed for increased intensity of floor area use ratio in the Regional Commercial land use designation which predominately affected the Quaker Bridge Mall. The amendments were made to reinforce the board's desire to support a rapid-transit bus station on mall property. Further amendments allowed for a right-of-way through the mall property to connect with the Lawrence Hopewell Trail bike/pedestrian path system and the Delaware & Raritan Canal State Park. In 2008 and 2009, additional COAH units were approved for several apartment complexes in the township including the Brookshire Senior Apartments, Eagle Chase Apartments, Lawrence Square Village, Berkshire Stewards Crossing, Carriage Park, Tiffany Woods, Traditions at Federal Point, Avalon Run (Eaves Lawrenceville), Avalon Run East (Mercer at Lawrence Station), Liberty Green, and Stonerise.

In 2009, Lawrence Township became one of the first municipalities in the state to adopt a Green Buildings and Environmental Sustainability Element as part of their Master Plan. The element guides land use decisions by the township including land use patterns, circulation system, energy conservation and renewable energy production, green building design, water resources, waste reduction, and recycling.

In 2012, a parcel previously zoned as Planned Village Development-3, allowing for age-restricted high-density housing, was changed to Highway Commercial to encourage development of retail uses to complete the 1995 Master Plan's vision for a mixture of residential, retail and uses in the area. The Costco Wholesale 156,000 square foot retail warehouse store was subsequently developed on this parcel adjacent to the Eaves Lawrenceville and the Mercer at Lawrence Station high-density apartment complexes.

Redevelopment Initiatives

The Lawrence Township Growth & Redevelopment Committee consults with the Township Council on matters pertaining to economic development and redevelopment in the community. The committee consists of nineteen members appointed at-large from the community. Representatives from the Planning Board, Zoning Board, Trails, Open Space and Stewardship Committee, and the Environmental Resources and Sustainability Green Advisory Committee are appointed annually by the chairs of these boards and committees. The Committee works closely with liaisons from the Board of Education and the Township Council.

In 1998, the area fronting on Brunswick Pike between Mayflower Avenue and the Brunswick Circle and an adjoining segment of Whitehead Avenue in the southern portion of the township was designated for study as an improvement district known as the Brunswick Pike Redevelopment Area. In subsequent years, the Township worked closely with the NJDOT to plan for transforming Brunswick Pike into a mixed-use boulevard. A draft redevelopment plan for this area was prepared in 2004 that recognized three distinct improvement districts within the larger Brunswick Pike Redevelopment Area: The Whitehead Road Extension Redevelopment District, the Brunswick Pike North Redevelopment District, and the Brunswick Circle Redevelopment District.

In the following years the plan was further refined and in 2012 the Planning Board adopted the Brunswick Pike Redevelopment & Form-Based Codes Study. This document explores the application of a form-based development code along Brunswick Pike to assess what opportunities it may offer in encouraging alternative land use patterns in the study area and permitting increased development intensity. It offers potential remedies to difficult challenges shared by many aging suburban corridors. These include the questions of how to integrate suburban commercial corridors with surrounding residential

neighborhoods and how to restore a road oriented exclusively to vehicle traffic to one that accommodates vehicles while also encouraging pedestrian activity.

Roadwork design plans for the southern section of the project were completed in 2015 and NJDOT moved ahead with the construction of the Whitehead Road roundabout and also constructed a grass median on Brunswick Pike between the roundabout and the Brunswick Circle. Concept plans for a section of Brunswick Pike between Lake Drive and the Brunswick Circle have been completed and are out for public comment.

In 2006, the management firm of the Quaker Bridge Mall was granted approval to add a large expansion of the current enclosed shopping mall that would include two additional large department stores along with small concourse stores and parking garages. The recession prevented the expansion; however, approval of the proposal remains in place. The existing mall underwent an extensive interior and gateway renovation project that also added two restaurants to the northwest façade. Whether the Mall proceeds with the major expansion depends upon economic issues that are beyond the Township's control. In 2007, amendments to the Master Plan included an innovative approach to preserving neighborhood architectural context by regulating floor areas of new houses on infill lots within established neighborhoods. The initiative has successfully prevented the overdevelopment of existing infill lots with outsized residences, a problem which has occurred in other areas of the state.

A commercial strip along Route 206 in the area of the Lawrence Road Fire Company was identified as an area in need of redevelopment. After a series of visioning sessions with area stakeholders, upgrades to the streetscape to improve pedestrian safety and access to the Lawrence Road fire station were completed. A parcel currently occupied by a former service station has been targeted for redevelopment as a mixed-use building fronting on Route 206 with parking located in the rear.

The Township has cooperated with the County Planning office in examining the land use constraints and opportunities in the area where Lawrence, Ewing, and Trenton intersect locally known as Mercer Crossings. The Trenton Farmer's Market occupies a large parcel on Spruce Street in the area that has been targeted for redevelopment.

The Township has also undertaken various open space, greenway, and infrastructure improvements in the Eggerts Crossing neighborhood that has generated interest in infill housing in the area. Several single-family detached houses have been constructed on vacant infill lots in the district.

The Township continues its support for the Lawrenceville Main Street National Historic District by enacting amendments to the Master Plan that supports preserving this important area of the community. Amendments to the Township Master Plan also support the redevelopment of existing small commercial parcels along the major transportation corridors into mixed-use convenience and gasoline sales facilities. A new Wawa convenience store and fuel station located near the intersection of Brunswick Pike and Bakers Basin Road was opened in 2015.

Several recent revisions to the Township Land Use Ordinance were made in 2017 including changes to Section 409 – Apartment and Townhouse District, Section 421 – Regional Commercial District, and Section 423 – Mixed Use District. All address permitted uses, minimum lot coverage and building height and density. The Regional Commercial District outlines provisions for the construction of high-density residential development townhouses and apartments with as many as 350 dwelling units on lots of less than 20 acres in an area adjacent to the Quaker Bridge Mall. The ordinance also allows for such developments at maximum building heights of 60 feet (or 4-stories for non-residential buildings), 80 feet (or 4 residential stories over buildings with residential floors over non-residential uses), and 75 feet (or 4 residential stories over buildings with residential floors over parking areas). Such mixed-use residential buildings may be built with 4 stores of lightweight wood frame residential spaces over up to two levels of fire-resistive concrete or protected steel base or podium floors. This may result in such buildings rising to a height of six stories total.

While not located within the Township borders, a very large mixed-use “Village Center” style redevelopment plan with nearly 2,000 residential units and more than 1.3 million square feet of commercial space was proposed for a 650-acre site directly across from the Quaker Bridge Mall in neighboring West Windsor Township. A portion of the site includes a large vacant property formerly occupied by American Cyanamid with the balance of the parcel currently under agricultural use. The site is bordered by Brunswick Pike to the north, Quakerbridge Road to the west and the Northeast Corridor Amtrak rail line to the south. Such a large residential and commercial development located just to the east of the township border may place an additional load on township emergency services in the form of frequent fire & EMS mutual aid requests should the neighboring municipality fail to adequately plan for the additional expected load on their own emergency services assets. The site has recently been sold to a new developer who has proposed a similar sized project, however, the developer and West Windsor Township are in litigation over the zoning of the property which is zoned for commercial use only.

Open Space Initiatives

The Lawrence Township Environmental Resources Committee reviews and makes recommendations to the zoning and planning boards on all site plans for developments in the Township. The committee also succeeded in securing the assistance of the Delaware Valley Regional Planning Commission to prepare an environmental resource inventory for the municipality. This initiative helps to support the existing inventory of parks, trails and open spaces in the community and identifies additional parcels targeted for preservation and development as recreational areas. The Township has been also been a partner in the Mercer County Sustainability Coalition, a group of neighboring municipalities working together to promote the preservation of open space in the region. The Township also has been actively working with private groups such as the Lawrence Township Conservation Group to identify and preserve available tracts of open land in the community.

Overall Assessment of Land Use in the Township

The Township has made a very good effort to maintain a balance between residential, commercial, and recreational land uses. This is evident in the impressive number of parks, recreation areas, and preserved open spaces available in the community. Especially noted is the municipal support for the Lawrence Hopewell Trail, an 18.7-mile route that links multiple parks and open spaces in the Township through a system of bike and pedestrian paths.

The southern portion of the township is characterized by older small lot residential and commercial uses along with a small section zoned limited industrial along the border with the City of Trenton and Hamilton Township. There are few open parcels available for development in this area. Commercial uses are clustered along Princeton Avenue and Spruce Street. Changes to land use in this section of the Township will most likely involve the redevelopment of existing uses along these corridors. The Trenton Farmer's Market site on Spruce Street has been targeted for possible redevelopment. The partially vacant Lawrence Industrial Park site on Enterprise Avenue would be a prime candidate for redevelopment. The Brunswick Pike South Redevelopment Area is also an area targeted for redevelopment. The Heritage Village mixed-use residential over commercial building recently constructed at 1970 Brunswick Pike is a good example of the kind of repurposing of properties envisioned for this area.

New development activity has been concentrated in the central portion of the Township with multiple high-density apartment and townhouse complexes being constructed along the major transportation corridors within the last twenty years. Development of several office parks and other large commercial developments have been clustered along the Route 1 corridor and in the area of the Quaker Bridge Mall. Expansion of current

commercial uses are most likely the type of land use changes that can be expected in this area. The balance of the area includes vast neighborhoods of single-family homes of moderate lot sizes ranging from one-half to two and one-half acres.

The northern stretches of the Township are zoned in larger parcels than the rest of the community. This area is anchored around two large office campuses: The Educational Testing Service campus and Bristol Myers Squibb's Lawrenceville location. Spacious single-family homes on large lots are interspersed around the campuses. There are three large parcels of preserved open space: Mercer Meadows, Shipetauken Woods, and Carson Road Woods, which dominate the remaining areas. There appears to be very few areas for substantial development as most areas are zoned Environmental Protection 1 and 2. Both classifications limit development to agriculture and single family detached residential uses on minimum lots sizes ranging from 3 to 4 acres. In the EP-2 zone, minimum lot sizes may be reduced to one-half acre per unit through clustering the development in one contiguous part of the tract and the preservation of the remaining land in agricultural, woodland, or meadows restricted from further development.

Development Impact on Fire Protection

The 1995 version of the Master Plan includes a description of the emergency services assets of the Township. It outlines the present configuration of the three volunteer fire companies including the location of the fire stations and apparatus inventory for each company. Each fire company has one paid firefighter in each station during business hours. The plan also mentions a sub-station for the Lawrenceville Fire Company being located on Lawrence Square North Boulevard. It also mentions that two parcels, one located near the Mercer Mall and one located on the Bristol Myers Squibb Lawrenceville campus, have been land banked for future possible use as fire station sites.

The Master Plan states that there has been a steady increase in fire & EMS calls in the Township that parallels the increase in residential and non-residential development. It further states that despite these increases, fire and emergency medical services appear to be adequate.

Following an internal study by township and fire officials, the sub-station was closed in 2004 due to a lack of available volunteers in the area. This decision was not supported by all members of the fire companies. Subsequent reviews and revisions to the Master Plan conducted through 2013 make no mention of the adequacies of emergency services in the Township. An analysis of the current state of fire and emergency medical services serving the municipality will be made in another section of this report.

Impact of New Construction Types on Firefighter Safety and Operations

Lightweight Wood Open-Web Truss Building Components

Several apartment and condominium buildings that have been constructed in the Township in the last twenty years feature lightweight open-web wood truss construction components. The Eaves Lawrenceville, the Mercer at Lawrence Station, Yorkshire Village Senior Plaza, Brookshire Senior Apartments, Carriage Park at Lawrence, Beckett Village on the campus of Rider University, and sections of the Morris Hall Elder Care complex have been built using this method of construction.

The open-web spaces inherent in this design create large undivided void spaces in the floors and attics of these buildings. Such open voids allow for rapid unchecked fire spread should a fire start in that area or should an interior or exterior fire breach the drywall or exterior sheathing and enter the void space. Such an occurrence poses a very hazardous condition for responding firefighters. While these buildings are protected by fire sprinkler systems and alarms, some of the occupancies are only covered by residential NFPA 13R residential fire sprinkler. This type of fire protection system allows the builder to install sprinklers only in the residential spaces and public occupied areas. Areas such as small closet spaces and attics are not required to be included in the covered areas. The large voids created by the open-web truss floors are also not required to be sprinklered.

Such fire sprinkler systems are designed to alert residents to aid in their escape, should a fire occur in the building. They are not designed to completely extinguish fires that may occur in the interior spaces but are meant to control fires and allow for the safe exit of the occupants. Firefighters are still required to enter the building to control and extinguish any remaining fire. Should a fire occur in, or enter any of the void spaces inherent in this type of building design, fire may spread unchecked in the structural support elements of the building leading to localized floor and roof collapses. Fires occurring in these types of buildings have been identified by the fire service as dangerous to firefighters. Multiple instances of firefighters being severely injured or killed while conducting interior firefighting operations in these types of structures have been documented. Tests conducted by the National Institute of Standards and Technology on the effect of fire on lightweight wood truss structural elements found that the truss assemblies would fail after being exposed to fire in under 10 minutes.

As an example, a fire occurring in a lightweight wood open-web floor and roof truss apartment building in Coatesville, PA on September 10, 2010 resulted in seven firefighters being injured in a roof collapse. The fire required the response of more than 100 area firefighters and resulted in the displacement of the residents from all 28 apartments units in the building. The late-night fire activated the fire alarm system and all

occupants safely evacuated the building. The fire originated on a second-floor exterior balcony and extended via the exterior before travelling to the open-web wood truss attic. Firefighters were attempting to gain access to the attic area when the collapse occurred trapping several of them in the open stairwell. The building was equipped as required by code with residential fire sprinklers, however, they were not effective in stopping the fire from spreading to the unprotected open-web truss void spaces. The configuration of the building closely resembles the configuration of the apartment buildings at the Eaves Lawrenceville apartment complex at 1000 Town Court South. Reference: Millview Apartment Fire in Coatesville, PA: https://youtu.be/wu62sNropwU

Podium Mixed-Use Buildings

Another recent trend in residential multi-family building construction in the area involves the construction of up to five floors of lightweight wood open-web truss residential levels over up to two stories of fire-resistive concrete or protected steel base commercial space. This type of structure known as a “pedestal” or “podium” building may include retail, restaurant, office, or parking garage levels on the lower floors. This type of building allows for a very intense land use ratio of residential units per acre. Under the ICC building code, the uses are treated as separate buildings due to the fire-resistive layer -- usually concrete -- placed between the non-combustible lower levels and the combustible wood upper levels.

The buildings are required to have fire protection elements such as fire sprinklers, fire alarms, and fire-resistive stair towers. All of the fire protection systems are intended to allow the safe and early evacuation of the occupants, however, as outlined in the preceding section, they are not intended to the protect the lightweight wood structural components from exposure to fire. Fires occurring in these types of structures may extend into the void space inherent in lightweight wood open-web truss floor and roof assemblies. Should the fire extend to these areas, it will pose an additional hazard to responding firefighters due to the increased size and height of the buildings. Such structures may reach heights of up to seven stories total in height.

These types of buildings, due to the high concentration of combustible components, are particularly vulnerable to destruction by fire while under construction. Fires occurring in buildings under construction are prone to rapid spread because the fire protection elements including drywall, fire doors, sprinkler systems, fire alarms, etc., have not yet been installed. There have been numerous instances around the region where these types of buildings -- while under construction -- have been involved in devastating fires. Because of the heavy fire load of the massive wooden structure, these fires have threatened, and in some instances, spread to other structures in the area. Fires occurring in Edgewater NJ, Conshohocken PA, Raleigh NC, Maplewood NJ, and most recently in

Bound Brook NJ reached near conflagration stages and damaged or destroyed multiple adjacent structures. References: Massive Fire in Bound Brook NJ: https://youtu.be/biEJhTbR41c,
Edgewater Avalon Fire: https://www.youtube.com/watch?v=6cb5KXSYFxM

Several revisions to the Township Land Use Ordinance were made in 2017 allowing for the construction of high-density residential development townhouses and apartments with as many as 350 dwelling units on lots of more than 10 acres in an area adjacent to the Quaker Bridge Mall. The zoning amendment allows for podium-style buildings in this area.

Such high-density, increased height buildings will pose a challenge to the local fire forces. Firefighting operations in these types of mid-rise buildings require additional staffing and equipment to quickly and effectively respond to fire incidents. Current staffing levels of the local fire department will be hard pressed to combat fires occurring in these structures.

An analysis of the current capabilities of the fire department will be examined in another section of this report. The Planning Board and local fire code and building officials need to recognize the challenges that these structures present and consider the current capabilities of the local fire forces when reviewing new construction applications and building plans.

Service Demand Levels & Emergency Incident History

Among key factors that should be examined in any evaluation of the fire protection needs of a community are the type and frequency of fire and rescue incidents that occur in the coverage district. The types of emergencies that a fire agency is called to respond to determine the type of apparatus and equipment that the fire department will need to control the situation, while the volume of emergencies determines the number of fire and rescue vehicles and personnel that the agency must deploy to successfully counter multiple and/or simultaneously occurring incidents. While previous incident history serves as an excellent predictor of the type and frequency of fire and rescue incidents, municipalities should also consider the potential for new building developments and significant changes in existing occupancies when evaluating the fire and rescue protection requirements of a community.

Fire departments provide invaluable services to communities throughout the nation. They respond to a wide variety of emergencies involving fires, explosions, hazardous conditions, and natural and manmade disasters. They also respond to nonemergency service calls as determined by local policy. Often, what is described by an emergency

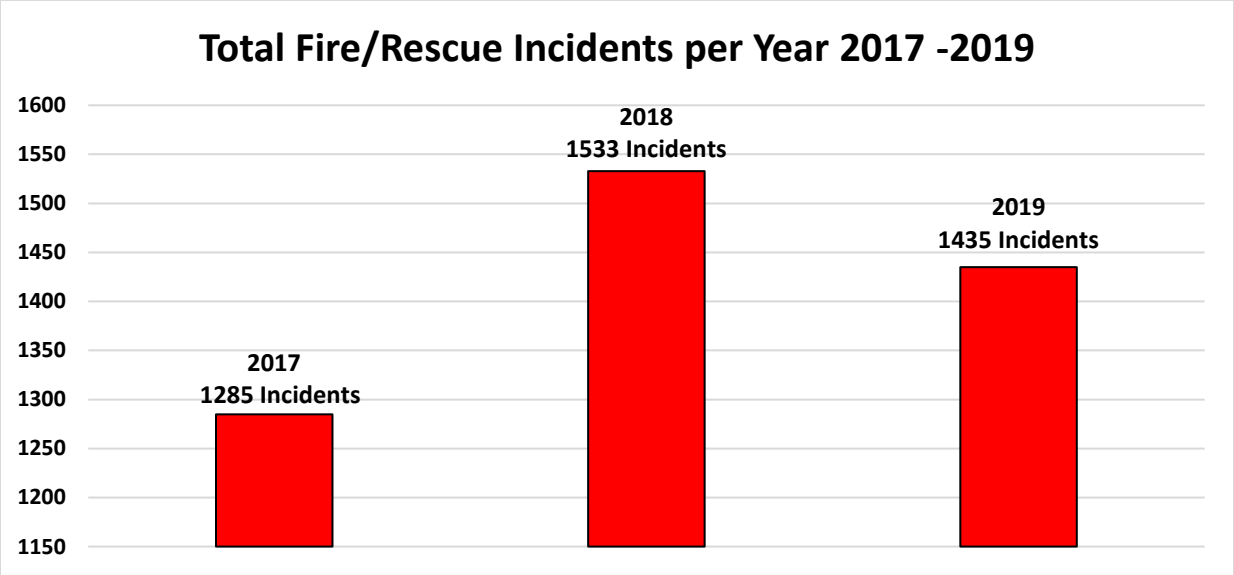
caller to 9-1-1 dispatchers does not accurately reflect the demands of the actual incident. Nevertheless, fire departments are trained and prepared to respond to a broad array of situations. It is the responsibility of the governing body to ensure that the local fire authority is prepared, staffed and equipped to carry out this mission at the level of expectation of the residents and taxpayers.

The Lawrence Township Fire Department participates in the National Fire Incident Reporting System (NFIRS), a system established by the United States Fire Administration with the intent to provide local fire agencies with an incident data analysis tool to help communities gather and determine the local fire and emergency service demand levels. The system is coordinated in New Jersey by the state Division of Fire Safety. Lawrence has participated in the program for several years and the staff of the fire department has provided 3 years of NFIRS incident data covering their response history from January 1, 2017 to December 31, 2019 to assist in preparing this report and recommendations.

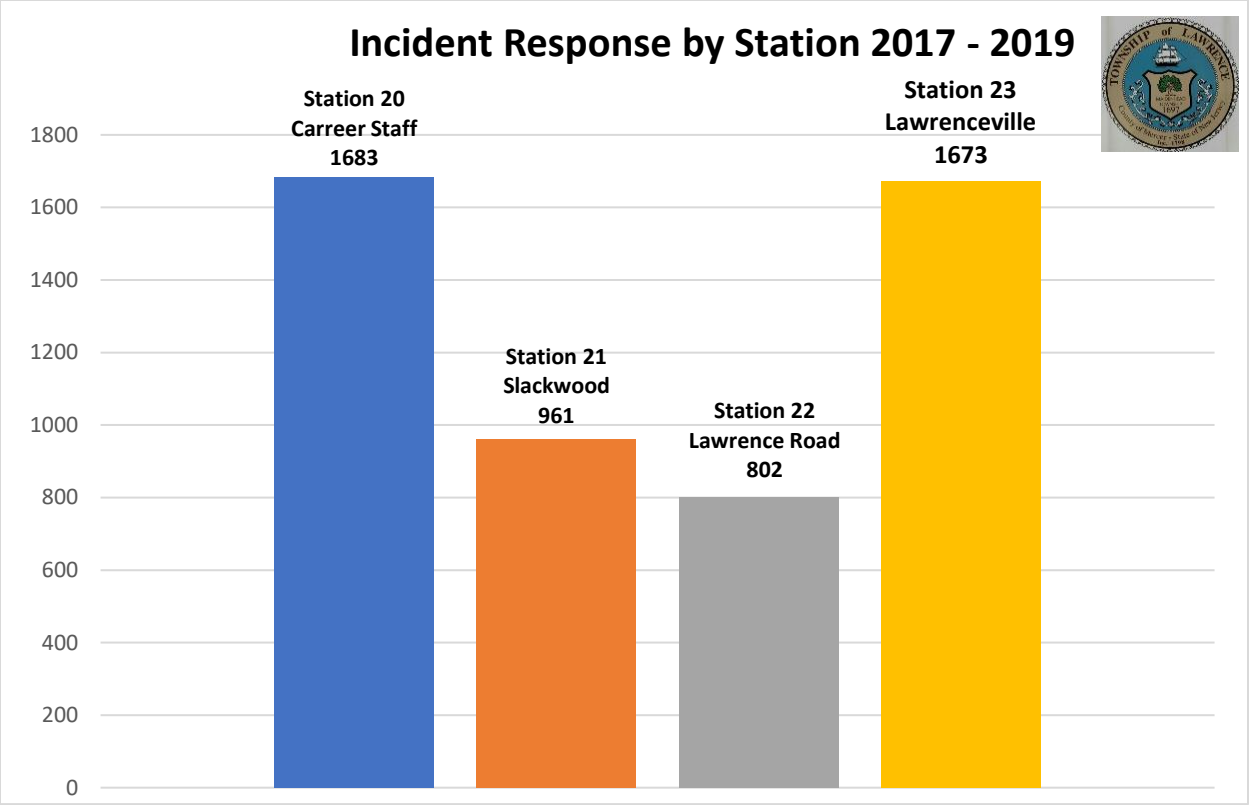
It should be noted that the NFIRS system of fire data collection is a results-driven system that compiles information regarding what actual conditions were found by the arriving fire personnel at the scene of a fire or rescue response incident. Fire personnel file their reports based on the "Type of Incident" found upon arrival, not on the criteria that they were dispatched to. While certainly the actual conditions that were encountered on arrival by fire personnel are vital to help illustrate the service demands placed on fire agencies, the system has one major shortcoming. The current system does not collect data regarding the type of call for service that the agency was dispatched to. As an example, a fire agency may be dispatched to a report of smoke issuing from a building. The dispatch center would dispatch the call for service as a structural fire response based on previously approved dispatch criteria. Fire personnel then arrive on the scene to find that the actual source of the reported smoke condition is steam issuing from a clothes dryer exterior exhaust vent. The fire officer likely would file the NFIRS report under the category of Good Intent Call: Code 652 which is steam, vapor, fog, or dust thought to be smoke. Nowhere in the fire data record is there a place to document what the fire department was originally dispatched on – a possible structure fire. Thus, the system fails to capture a valuable component that could be used to illustrate the actual service level demands placed on a fire agency. Several fire service experts have called for the inclusion of such data in future iterations of the NFIRS system.

NFIRS data covering a total of 4,253 fire and emergency incidents that were responded to during this time period was used in this analysis. The yearly number of incidents ranged from a high of 1,533 incidents in 2018 to a low of 1,285 incidents in 2017. Fire incidents increased by almost 20% between 2017 and 2018, while the spread between 2018 and 2019 declined by more than 6%. The yearly average number of fire incidents covering the three reporting years (2017-2019) was 1,418 incidents per year. This shows a modest but

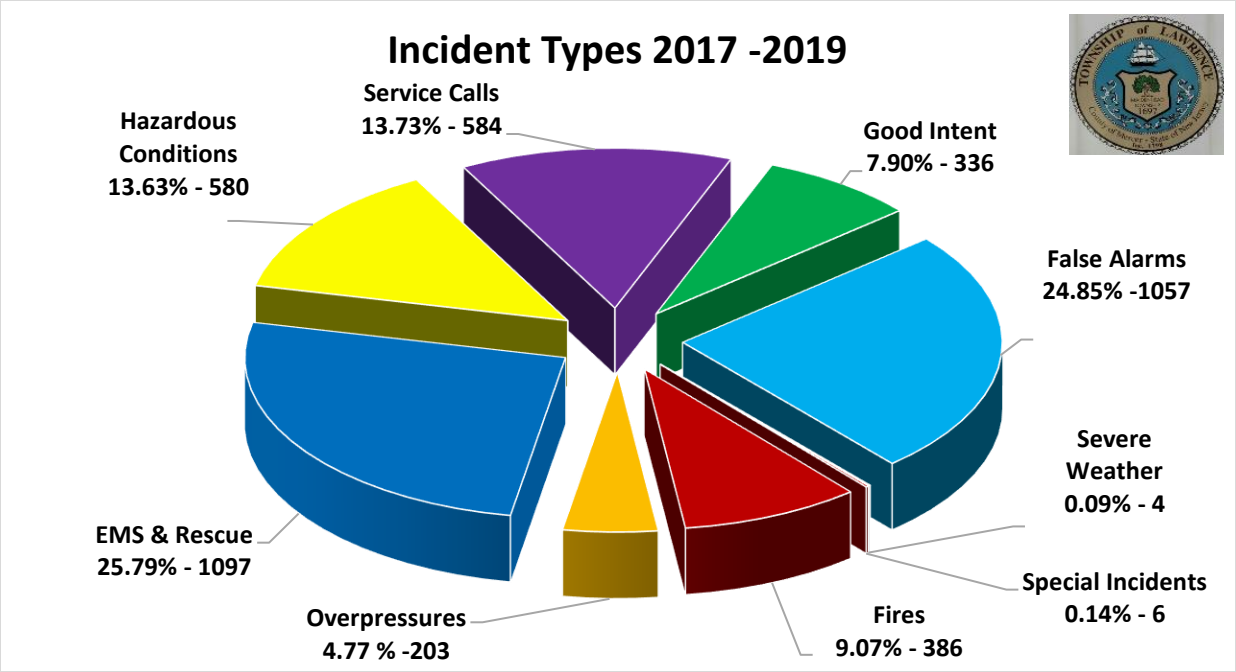
steady trend in increase in service demand for the Township fire companies of about 12% per year over this three-year period. Statistics for incidents reported in years prior to 2017 were not readily available for this report. A five to ten-year data span of total fire incidents may have been more accurate in projecting trends in fire response demands in the community.



Response statistics broken down by station for the three-year period showed a more graphic depiction of service demands placed on the individual fire companies and the career staff. The Lawrenceville Fire Company Station 23 (1,673 incidents) was revealed to have service demands that were almost twice as much as the other volunteer fire companies in the Township. Slackwood Station 21 (961) and Lawrence Road Station 22 (802) showed a near equal share of incidents. It should be noted that the statistics for Station 20 (1,683) cover the total responses made by the career staff. Of those responses 817 were made by the career staff only and an additional 866 responses were made in combination with the volunteer personnel. The career staff is on duty during weekdays, Monday through Friday from 8am to 4pm, approximately 40 hours per week. The career staff is also not on duty during holidays that fall on weekdays. Based on certain call type criteria, the volunteer stations may also respond along with the career staff. The volunteer stations are not generally alerted to minor incidents and EMS assist calls while the career staff is on duty and available.



The NFIRS data can also be analyzed to reveal the frequency and types of incidents that a fire agency is called to. Most modern fire agencies respond to a wide variety of both emergency and non-emergency events. These occurrences can range from medical emergencies to structural fires with various demands for other types of calls for service placed on the agency. The available three-year response history for the Township fire forces reveal that the demand for service was evenly spread among types of calls. Emergency medical rescue calls (25.79%) and responses to false alarms (24.85%) dominated the spectrum and together accounted for slightly over 50 percent of the call volume. Responses to fires (9.07%) and hazardous conditions (13.63%) accounted for more than 22 percent of the call activity. Responses to service calls and other more minor types of calls accounted for the balance of the service demand levels.



Rescue and Emergency Medical Services (1097 incidents – 25.79%) – This includes all types of emergency medical and rescue responses including: rendering basic first medical aid and assisting local EMS providers; all types of personal rescues such as motor vehicle accidents with injuries, motor vehicle accident extrications, and extrication of persons trapped in building collapses; trench/below grade rescues; confined space rescues; water rescues; emergency lock-ins; high angle rescues; and extrication of victims entrapped in machinery.

False Alarm or False Calls (1057 incidents – 24.85%) – These accounted for a large portion of fire department responses during the analysis period. This category includes: all types of emergency responses to investigate activations of fire, smoke, and carbon monoxide detections systems; fire alarm and fire sprinkler system activations where no fire, smoke or carbon monoxide was found. This percentage of incidents is in line with national trends as the proliferation of fire detection and suppression systems are increasingly mandated in new and renovated structures. An affluent suburban community such as Lawrence Township with significant commercial occupancies, large apartment and townhouse complexes, and many upscale private residences can expect that alarm system activations may account for as much as one-half of all fire incident responses. While the ratio of actual fires that are detected and/or suppressed by these systems versus the number of activations caused by unintentional activations or system malfunctions is quite small, each fire alarm activation must be treated by the responding fire department as an actual fire until the source of the activation has been investigated.

It should be noted that some of the large commercial and institutional occupancies in the Township, such as both locations of Bristol Myers Squibb, the campus of the Lawrenceville School, and the campus of Rider University, are protected by private security forces responsible for the initial investigation of fire alarm device activations[1]. Municipal fire personnel only respond to such alarms should additional information be received from the reporting party such as fire, smoke, etc., observed at the location. The fire department and the fire marshal report that relations are particularly good with the staff of these security forces, many of whom are retired or off-duty fire and law enforcement personnel.

Fire officials are confident that the security staff are capable of thoroughly investigating minor alarm device activations. The complex fire alarm systems in use at such occupancies are prone to frequent alarm activations due to system malfunctions and unintentional activations. This practice eases the service demands on the fire agency and relieves agency personnel from making needless responses due to unnecessary or accidental alarms.

Hazardous Conditions (580 incidents – 13.63%) – This includes all types of emergency responses that require the fire department to take actions to protect life and property from hazards other than fire. These include: natural gas, LPG and steam leaks; electrical hazards; structural collapse hazards; flammable liquid and hazardous material releases; biological, radiological and explosive hazards; smoke and odor removal; animal rescues; and all other types of imminent hazards to the public and property other than fire.

Service Calls (584 incidents – 13.73%) – This covers all types of service-related emergencies and non-emergencies that the fire department responds to including in-station standbys, calls dispatched and cancelled prior to fire unit arrival, aircraft medical evacuation standbys, good intent calls, responses where no incident was found upon unit arrival, animal rescues, and other non-emergency public service type calls.

Fires (386 incidents – 9.07%) – Fires accounted for a small percentage of fire department responses during the analysis period. This category includes all types of fires including fires in structures, motor vehicle fires, and all types of outsides fires occurring in brush, grass, trash and rubbish. This category is further broken down into the following sub-categories:

[1] *An examination of the number of fire alarm activations that occurred over the past 34 months in these properties revealed that the municipal fire forces were spared from responding to more than 70 false alarm responses per month or almost 1,000 calls per year.*

Fires in structures (187 incidents – 48.44%) - This percentage of structural fire incidents is in line with the statistics reported by the Division of Fire Safety in their annual NFIRS analysis report entitled "Fire in New Jersey 2015" which states that while actual fires in structures account for a small percentage of the activity of fire departments, these incidents are the cause of 80% of the reported property damage by fire in the state. Historically, fires in structures are low frequency but high impact events for a suburban community. The low overall number of structural fires is in line with other communities with similar demographics as Lawrence Township.

Cooking fires confined to container (23 incidents – 5.95%) – This includes all fires in the municipality involving cooking activities where the fire was contained to the cooking vessel. National statistics state that almost one-half of all fires occurring in homes are causing by cooking, especially unattended cooking.

Natural vegetation fires, other (57 incidents – 14.76%) – This includes all types of outside fires involving brush, grass, and mulch. Most of these incidents are of a very minor nature that cause little or no damage to property.

Mobile property (Vehicle) fires – (56 incidents – 14.50%) – This includes fires involving all types of motor vehicles such as passenger cars, trucks, mobile construction equipment and recreational vehicles.

Fires, other (37 incidents – 9.58%) – This includes all other types of unclassified fires occurring inside buildings and other special structures.

Trash or Rubbish Fires – (13 incidents – 3.36%) – These are fires involving all types of outside refuse fires including dumpster and compactor fires

Fires involving heating equipment including chimneys, flues, furnaces and boilers (7 incidents – 1.81%) - Fires involving heating equipment account for a very small percentage of the overall fire demand in the town.

Special outside fires, other (6 incidents – 1.55%) – This includes all other types of unclassified fires occurring outside buildings and other special structures.

Good Intent Calls (336 incidents – 7.90%) – This includes calls dispatched and cancelled prior to fire unit arrival, wrong location or no incident found, steam or other gas mistaken for smoke, honest mistakes, and all other types of non-malicious calls for the fire department to investigate.

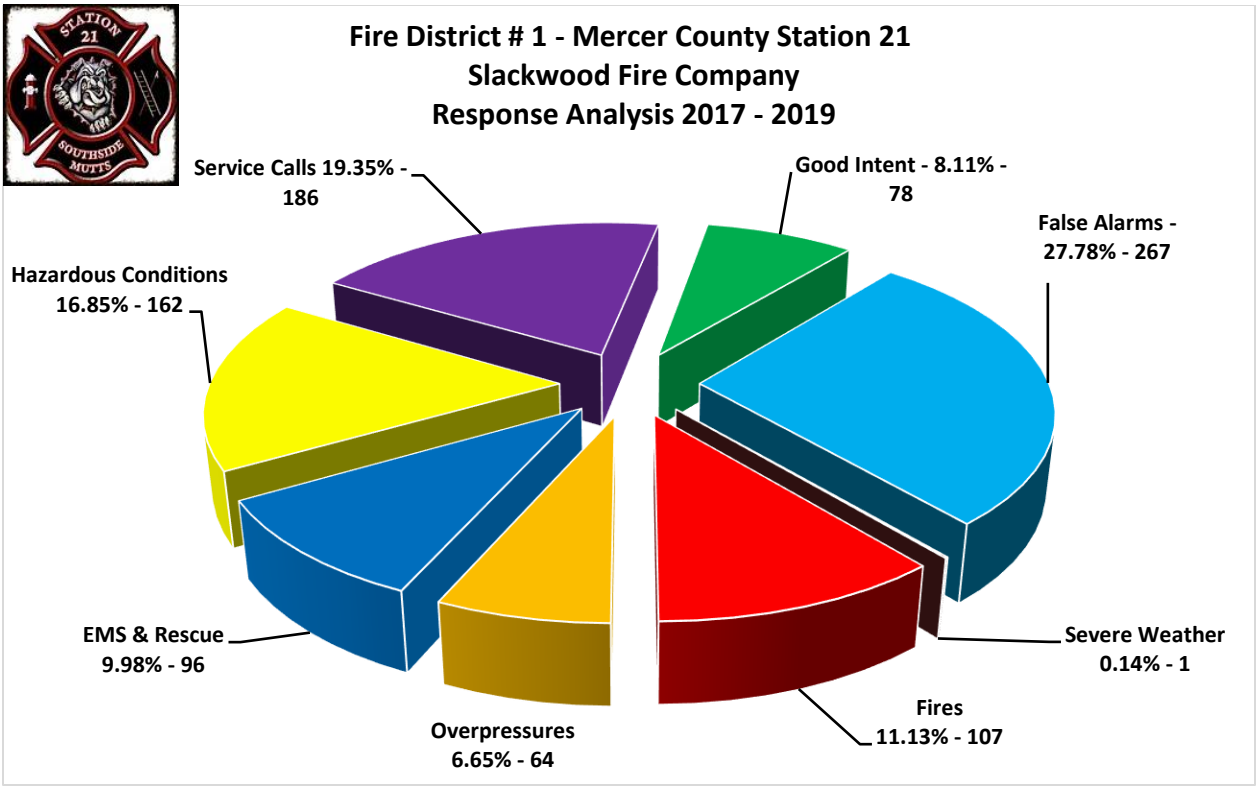
Overpressures, Ruptures, Explosion, Overheat (No Fire) – (203 incidents – 4.77%) – This includes all types of overpressure events from steam, air or gases, and chemical reactions; all types of explosions including bombs, munitions, fireworks, and dust; and ruptures caused by excessive heat where no ensuing fire is found.

Special Type of Incident (6 incidents – 0.14%) – This includes all other types of incidents that are reported to and are investigated by the fire department including all types of citizen complaints of code or ordinance violations.

Severe Weather & Natural Disasters (4 incident – 0.09%) – calls for the fire department to assess damages to property because of earthquake, flood, and wind storms including hurricanes, tornados, lightning strikes, and other natural disasters. Category excludes incidents where other services, such as rescue, firefighting, and damage control other than damage assessment are performed.

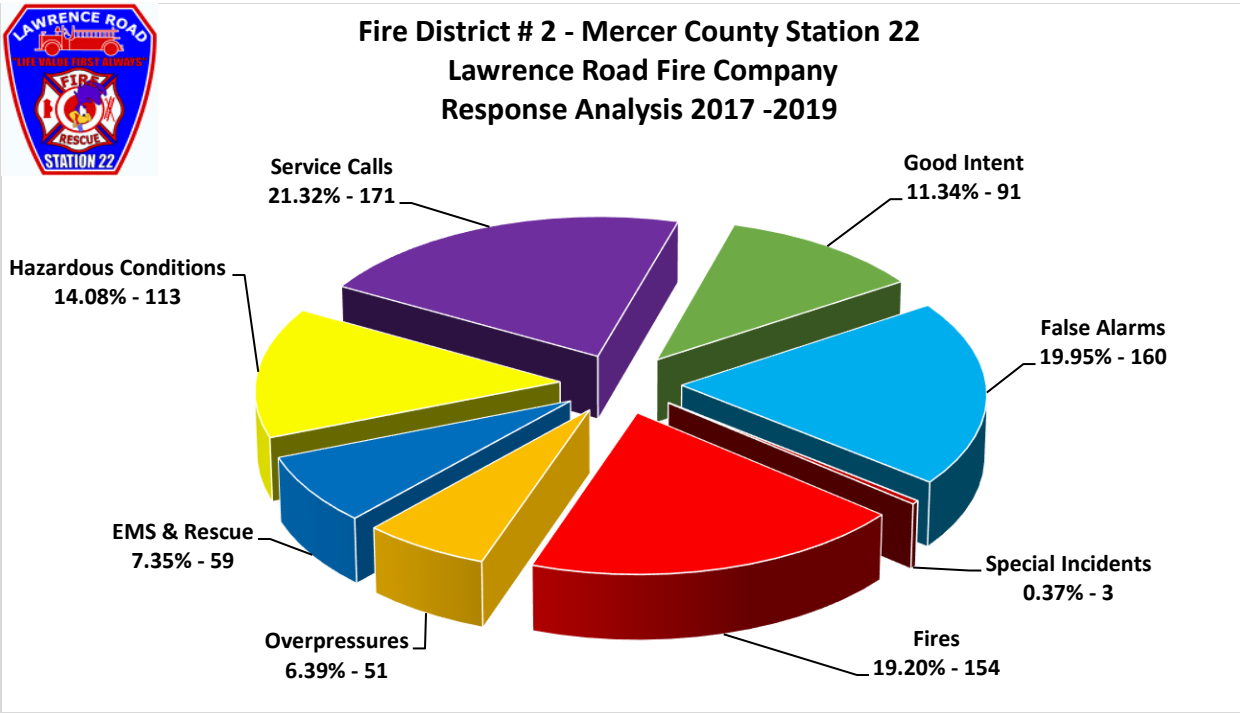
Service Demand Level Comparison of Fire Districts

The municipality is divided into three fire response districts, each of which is covered by a volunteer fire company. The career staff respond to service demands for all three districts during weekdays Monday through Friday 8am to 4pm while currently based out of the Lawrenceville station. They are be backed up by volunteer responders depending upon the type of call for service during these hours. Generally, the volunteer companies are not dispatched to calls of a minor nature including EMS assists during this time period. During nighttime hours, weekends and holidays, all incident responses are covered by the volunteer fire company members. Available response data was used to illustrate a comparison of the service demand levels between the fire districts within their respective coverage areas:



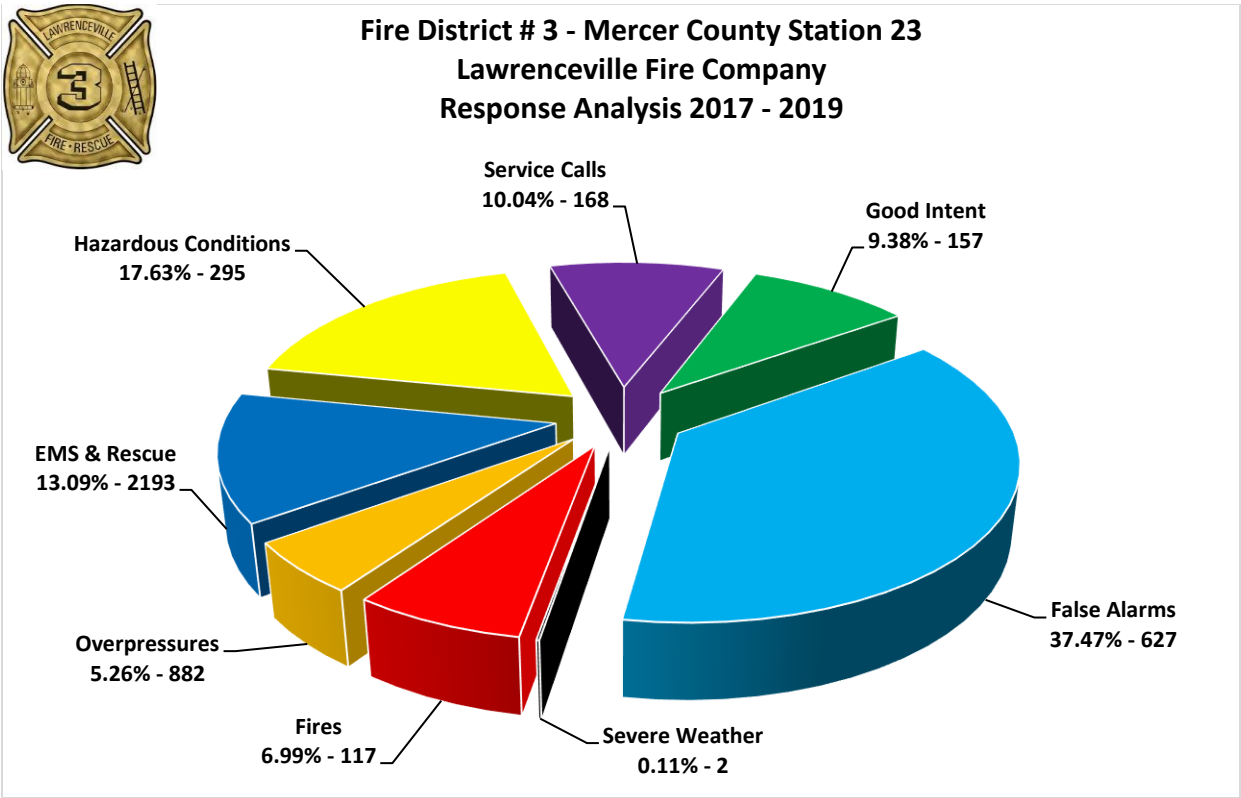
Fire District # 1:

Slackwood Fire Company Mercer County Station 21 serves Fire District #1 from their station located at 21 Slackwood Avenue in the southern end of the township and is the oldest fire company in the township. A breakdown of the fire incidents occurring in the area shows that service demand is evenly spread across incident types with no incident type dominating the workload. False Alarms constitute the largest percentage of service demand (27.78%) on the fire company. The southern portion of the township contains numerous commercial occupancies, several large residential apartment complexes, and a limited number of light industrial concerns. Such occupancies are prone to frequent false alarm activations due to system malfunctions and unintentional activations.



Fire District # 2:

Lawrence Road Fire Company Mercer County Station 22 serves Fire District # 2 from their station located at 1252 Lawrenceville Road in the south-central portion of the Township. A breakdown of the fire incidents occurring in the district shows that service demand is evenly spread across incident types with no one incident type dominating the workload. While Service Calls account for the highest percentage (21.23%) of calls during the study period, False Alarms (19.95%) also constitute a large portion of the workload in the area. The central portion of the township contains numerous commercial occupancies scattered along the main north/south thoroughfares of Brunswick Pike and Princeton Pike. Such occupancies are prone to frequent false alarm activations due to system malfunctions and unintentional activations. While the fire district had the lowest number of incidents (802) compared to the other fire districts during the study period, they also had the largest percentage (19.20%) of actual fires responded to than the other fire companies in the township. Of the 154 fire incidents, slightly more than one-half of the responses (84) were for fires occurring in structures. Of those, 21 incidents were for mutual aid responses to building fires in adjacent communities.



Fire District # 3:

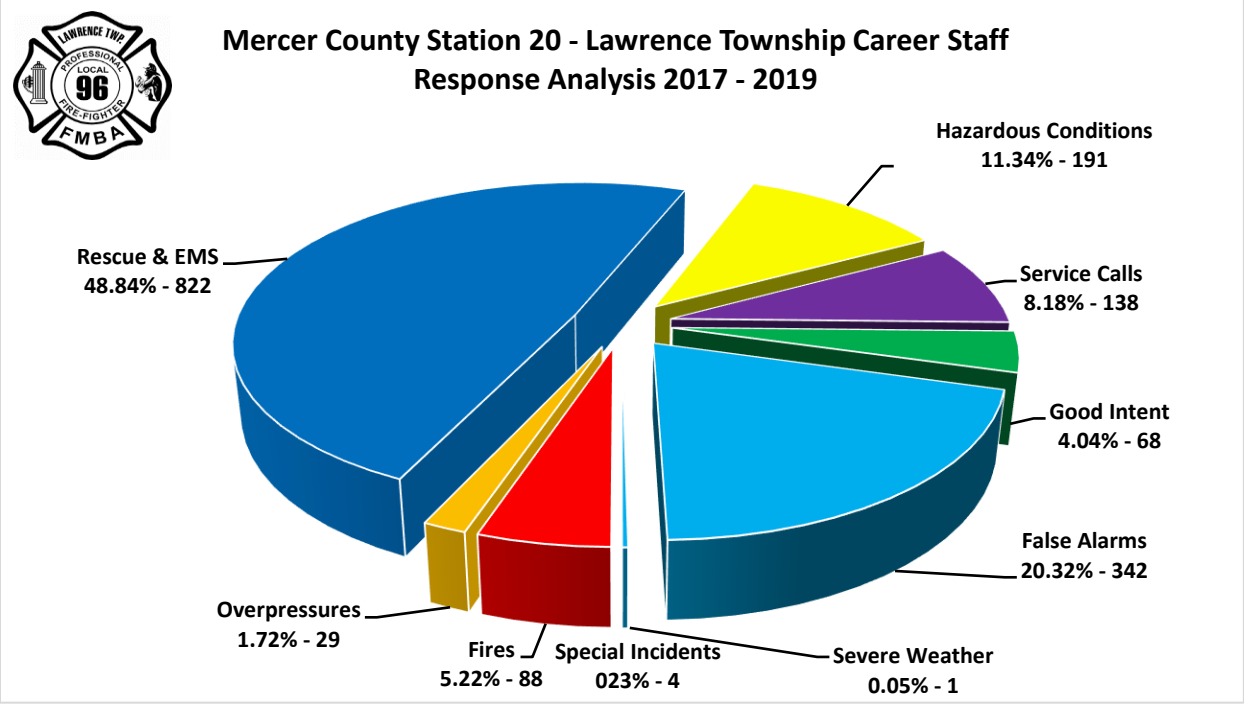
Lawrenceville Fire Company serves the northcentral and northern portions of the Township from their station located at 64 Philips Avenue near the Lawrenceville Main Street Historic District. A breakdown of the fire incidents occurring in the district shows that service demand is evenly spread across incident types with the exception of False Alarms (37.47%) which constitute the largest percentage of service demand on the fire company. It is also the largest percentage in that category compared to the other fire districts in the township. The district covers an area that includes many large tracts of single-family homes and several newly constructed multi-family townhouse and apartment complexes. It also includes the locations of the two campuses of Bristol Myers Squibb and the complex of the Educational Testing Service. The northern portion of the district includes large tracts of public parkland and preserved green space.

Service Demand Levels for the Career Firefighters – Station 20

A small contingent of career firefighters serve the township on weekdays from 8am to 4pm, not including holidays. Starting on January 1, 2020, the career members were based at the Lawrenceville fire station in the north central portion of the township. Previously, they had operated out of the Lawrence Road fire station in the southcentral section of the township. The five-member career workforce maintains a minimum staffing level of four firefighters on duty and occasionally is supplemented by per-diem part-time firefighters who are drawn from the ranks of the volunteer fire companies. The career members staff the first response fire apparatus to all types of fire/rescue emergencies township-wide

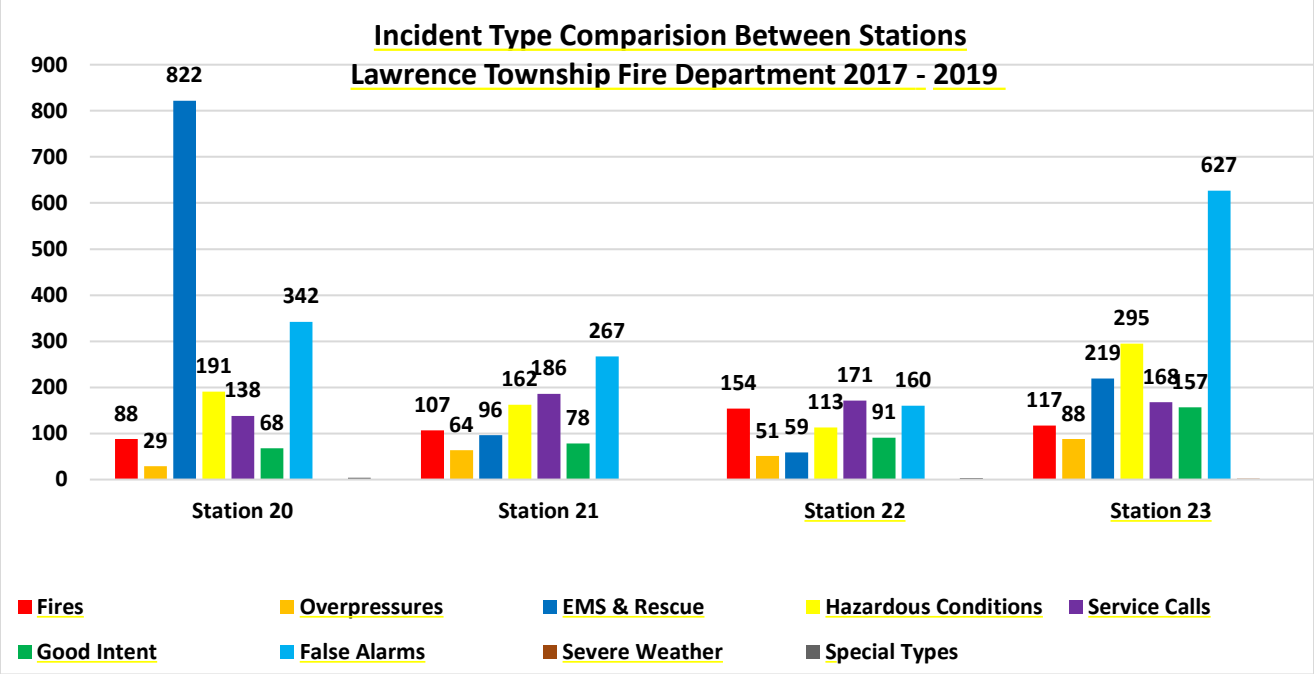
during their duty hours. They are supplemented by volunteer members who respond with additional apparatus from the township fire districts depending upon call type and location. Volunteer members do not generally respond to calls of a minor nature and EMS-related incidents while the career staff is on-duty. The career staff does not respond to fire mutual aid requests from neighboring communities. Such requests are covered by the volunteer members while the career staff maintain primary fire coverage for the township. After 4pm on weekdays and on weekends and holidays, the volunteer fire companies provide primary fire response coverage from their respective stations.

A breakdown of the types of fire incidents that the career staff respond to during weekday hours shows that almost half (48.84%) of their service demand is for emergency medical-related incidents. The career staff is often called upon to assist the two-person township EMS unit when the EMS personnel need additional assistance with a patient. The career staff also often supplements the EMS response in the township when additional or simultaneous medical calls are in progress by providing first response emergency medical services when EMS units from neighboring communities are delayed or unavailable. The career staff also responds to a similar percentage of False Alarms (20.32%) as the volunteer fire companies. This percentage is not surprising given that the career unit is tasked with responding township-wide.



A side-by-side comparison of incident types for each station shows that the levels of service demand for the stations are similar for most of the incident types while illustrating the disparity of levels in two major areas. The career staff covers a vastly larger number

of EMS related calls than the volunteer stations, while Station 23 responds to a level of False Alarms that is much larger than the other stations.



Response Time and Staffing Analysis

One attribute of a proficient fire response agency is the ability to consistently deliver the proper amount of fire response personnel and firefighting equipment to the scene of fire and rescue emergencies to combat the type and frequency of urgent conditions that a community is likely to suffer in a timely manner. The challenge for most fire agencies is to determine how to deploy the resources that the municipality or district provides in such a manner that an effective firefighting force arrives at the scene to rapidly contain, control, and mitigate the effects of fire or other damaging conditions on the lives and property of the community inhabitants. The response must be tailored to the type of reported emergency so that the dispatched resources appropriately match the severity of the expected hazards. Fire agencies need to conduct a risk assessment of the structures, occupancies, and physical features present in the community to determine what are the types of responses that are likely to occur. The governing body must determine the level of fire protection the community is willing to support through the level of funding of the fire and rescue agency. Community leaders continually struggle with the question as to what is the level of risk that the public is willing to accept while balancing the cost of emergency services to taxpayers.

The ability of a fire agency to consistently deliver in a timely manner an adequate amount of personnel along with the necessary equipment to combat likely fire and rescue incidents occurring in the community is the hallmark of a good fire department. All the latest fire apparatus, best equipment and spacious fire stations are of no real value to the community if the fire agency is unable to fulfill its primary obligation to the community: arrive quickly at an emergency scene with adequately trained personnel and equipment to rapidly mitigate hazards and protect lives and property. In order for a fire agency to satisfy its primary mission to the community, the most critical element is a robust response of trained firefighters. The ability to consistently muster enough responders on a regular basis has become a major challenge for most volunteer-based fire departments in the nation.

Lawrence Township has experienced rapid growth in the last 30 years with the residential population increasing significantly during this time period. As of 2018, the United States Census estimates the township's population was 32,794 reflecting an increase of 7,007 residents over the 25,787 counted in the 1990 census. This shows a more than 27% increase in residents over the time period. This increase in population is clearly displayed in the number of multi-family apartment and townhome communities that have been constructed in the community over the last thirty years. A smaller number of single-family detached homes were also built in the Township during this time period. Numerous such housing units were developed in the central and northern portions of the community.

Service demand levels were examined in depth in an earlier section of this report. The data revealed that the number of fire and rescue incidents has shown a steady increase of about 12% per year for the three-year period (2017-2019) of fire data that was available for this report. Fire officials report that this increase is in line with steady increases in service demands that the fire companies have been experiencing over the last thirty years. Clearly, the increase in call volumes can be directly attributed to this increase in residential population. Other factors that are also likely contributing to an increased service demand is the large number of new non-residential development in the form of commercial office space that has occurred along the major transportation corridors in the municipality. Expansion at the existing research and development centers such as Bristol Myers Squibb and the development of several office parks also contribute to call volume due to increased traffic levels and rising workforce populations.

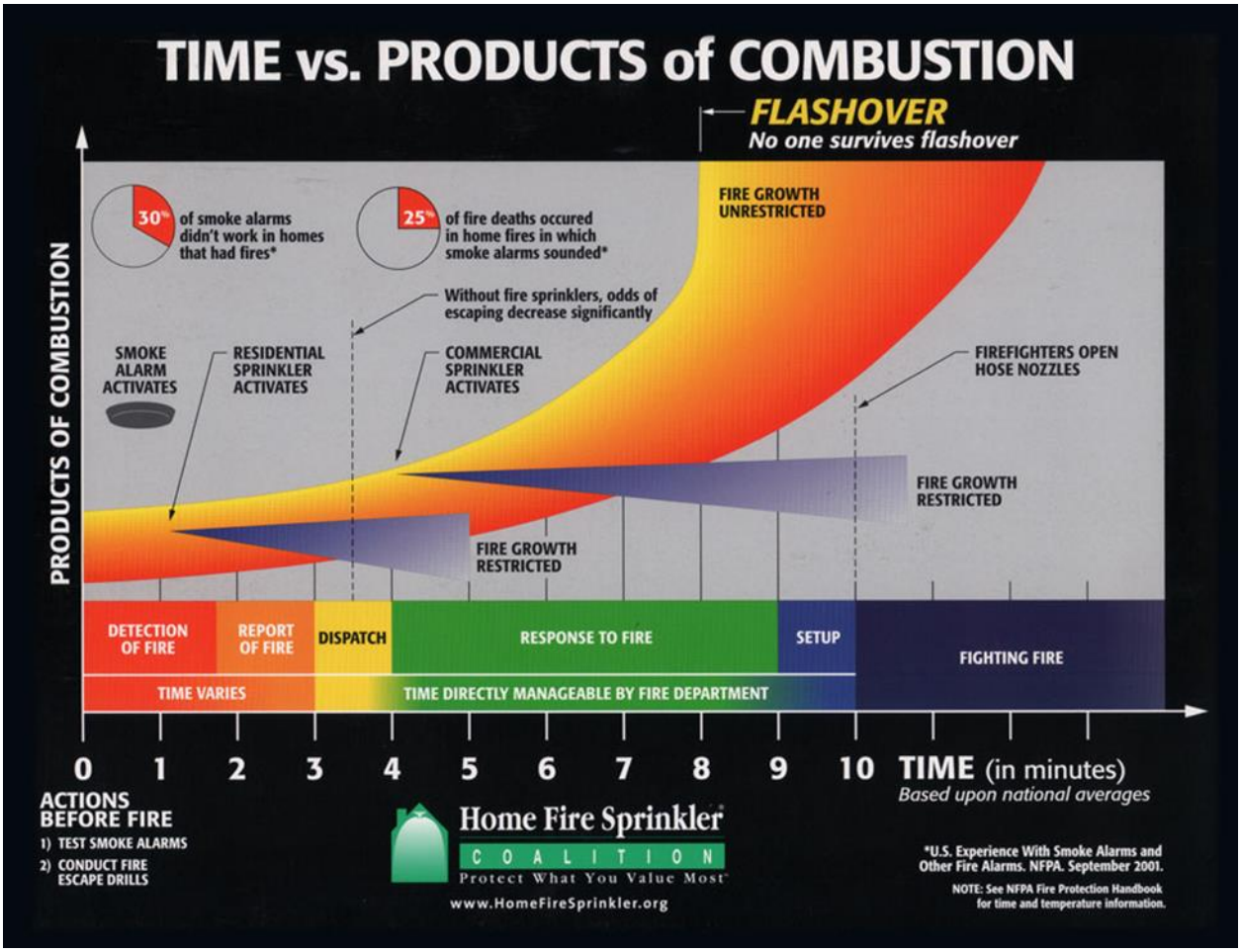
Of particular concern is the fact that many of the recently built structures, both residential and commercial, in the township were constructed using lightweight engineered building components. While such building components provide for a strong and rigid structure, they offer less fire resistance than traditional full dimensional lumber legacy building components. Lightweight building components lack the mass of legacy components and are subject to early structural failure and collapse when exposed to fire. Lightweight non-combustible building components that are commonly used in commercial and retail occupancies also offer little fire resistance. Research testing and actual fireground experience have shown that fires in structures built with lightweight building components that lack a functioning commercial or residential fire sprinkler system are likely to suffer early failure of the structural components at a much quicker rate that buildings constructed of legacy components. Most of the residential and commercial structures that have been built in the last thirty years in Lawrence Township feature lightweight building components and many lack the additional protection of a full coverage fire sprinkler system.

Major changes in the built environment in the last fifty years involving the increased use of synthetic combustible materials in our homes and buildings have had a profound effect on the speed of fire development in structure fires. Ordinary materials such as wood, paper, and natural fiber materials like cotton and wool have been replaced with petroleum-based materials such as plastics and synthetic fabrics like nylon and polyester.

These new materials are now routinely used in modern furnishings, finishes and in some cases the actual structural components of our buildings. These materials have changed the equation of how rapidly fires propagate and spread as well as increased the dangers to building occupants and to firefighters charged with rescuing occupants and controlling fires in structures. In light of these changes, the timely and adequate response by fire agencies has become even more critical to the protection of our communities.

The following illustration shows that unchecked fires in structures can be expected to reach the flashover stage within eight minutes from ignition. Flashover occurs in structure fire when all the combustible elements in a room are heated by the fire to a point where the room literally explodes in flames. This condition, where temperatures can be expected to reach more than 2000 degrees in the involved room of the structure, is not a survivable event for any occupants who may have been unable to escape or for firefighters attempting to control the blaze or search for occupants.

This means that in order for a fire department to successfully contain a fire and prevent it from reaching the flashover stage, they must arrive within the eight-minute time frame before flashover can be expected. With the time periods involving discovery of the fire, emergency reporting and dispatching, the fire department is already several minutes into the event before they are even aware of the emergency. This effectively leaves the fire agency with a five-minute window to travel to the emergency location, arrive on scene and set up for the fire attack. With the traditional volunteer-based fire response model that relies on volunteer members responding to emergencies from their homes or places of work, this also means that the fire has reached the flashover stage often before the fire apparatus has left the station.



Many suburban communities are now struggling with the reality that the traditional volunteer-based response model is unable to meet the response time and staffing requirements that the modern fire environment places on local volunteer fire agencies.

Among the ways Lawrence Township has attempted to address this concern is by employing a small squad of career firefighters to provide weekday business hour coverage for the township fire companies. Currently, the five career personnel are based out of the Lawrenceville fire station and maintain a minimum of four firefighters on duty Monday to Friday from 8am to 4pm not including holidays. Volunteer members are tasked with maintaining fire response coverage during all other times including nights and weekends.

One measure that can be referenced to help resolve the question as to what constitutes an appropriate level of volunteer firefighting resources for a community like Lawrence Township is NFPA 1720: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments, 2020 Edition. The standard applies to all-volunteer

fire agencies and to combination career/volunteer fire agencies that are composed of mostly volunteer members.

This consensus document has been recognized by the fire service and government agencies as the standard that sets minimum recommended levels of firefighter staffing, response times, and requirements for health and safety, incident management, training, communications and pre-incident planning for volunteer and combination career and volunteer fire agencies. The standard further requires the assembly of least four qualified firefighters to be on scene prior to initiating fire suppression operations at a structure fire. This four-person minimum fire suppression requirement is also a requirement under federal OSHA and NJ state PEOSHA statues referenced in 29 CFR 1910.134 that govern firefighter entry into hazardous atmospheres.

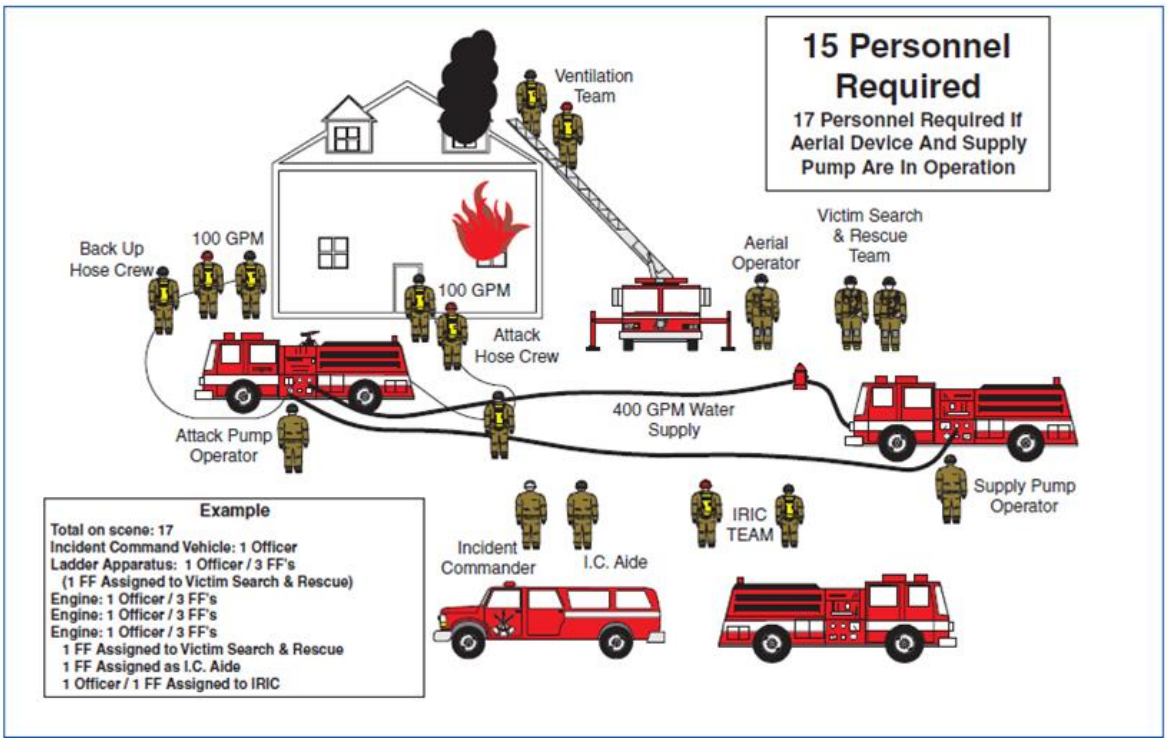
While unlike a similar standard for emergency deployment by all-career fire departments, (NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, 2016 Edition), the volunteer and combination standard does not recommend specific staffing and equipment levels for structural fire responses to various sized occupancies including single family dwellings, strip mall type commercial complexes, garden style apartment buildings, and high-rise buildings. The standard instead recommends that the agency identify minimum staffing and equipment levels to provide for safe and efficient operations.

The agency, as determined by the population density type: urban, suburban, rural, or remote, should also meet minimum response time objectives for assembly of an initial firefighting force. In the case of a suburban community such as Lawrence Township, the agency should be capable of delivering a firefighting force of 10 firefighters within 10 minutes to the scene in 80% of all structural fire response incidents. The standard allows for firefighters responding to the scene from neighboring fire departments through automatic or mutual aid agreements to be counted in the staffing total.

Regarding equipment needs, the standard also recommends that the agency should be capable of supplying the necessary equipment to conduct safe and efficient operations. Staffing and equipment needs should be appropriate given the types of fire and rescue risks the municipality may face. The Township of Lawrence contains a wide variety of building types typical of a middle-class suburban community as well as several high hazard residential and high value institutional and commercial occupancies (see Evaluation of Target Hazard Occupancies, page 26). While the volunteer/combination standard (NFPA 1720) does not recommend specific staffing and equipment needs for various types of emergencies occurring in certain types of occupancies, the career

standard (NFPA 1710) includes such recommendations and can serve as a model for a volunteer agency to gauge the organization's response capabilities.

As an example, the career standard calls for the deployment of at least 15 firefighters staffing 3 engine companies, 1 ladder company and one chief officer to effectively deal with a structure fire in a typical 2000 square foot two-story single-family dwelling without a basement and with no exposures (buildings in close proximity). Two additional firefighters are required should an aerial device and a water supply engine are put in service. These resources, collectively known as an effective firefighting force (EFF), should be dispatched at the outset of the incident. These nationally recognized staffing requirements have been established using a task analysis process utilizing job performance criteria that considers a combination of factors that include firefighter safety, fire service best practices and compliance with state and federal regulations. The following graphic illustrates the various positions at a small structure fire that need to be filled within the first 8 minutes of the incident.



The list of required job functions recommended by the standard includes:

- Incident command shall be established outside of the hazard area for the overall coordination and direction of the initial first alarm assignment. A minimum of one individual (IC) shall be dedicated to this task. (1 chief officer)

- The supervisory chief officer shall have a staff aide deployed to them for purposes of incident management and accountability at emergency incidents. (1 firefighter)
- An uninterrupted water supply of a minimum 400 gallons per minute (gpm) shall be established. Supply line(s) shall be maintained by an operator who shall remain with each fire apparatus supplying the water flow to ensure uninterrupted water flow application. (2 firefighters)
- An effective water flow application rate shall be established: 300 gpm from two handlines, one of which shall be an attack line with a minimum of 100 gpm and one of which shall be a back-up line with a minimum of 100 gpm. Attack and backup lines shall be operated by a minimum of two personnel each to effectively and safely maintain the line. (2 firefighters and 2 officers)
- One support person shall be provided for each attack and backup line deployed to accomplish hydrant hookup and assist in line lays, utility control and forcible entry. (2 firefighters)
- A minimum of one search-and-rescue team shall be part of an initial first-alarm assignment. Each search-and-rescue team shall consist of a minimum of two personnel. (1 firefighter and 1 officer)
- A minimum of one ventilation team shall be part of an initial first-alarm assignment. Each ventilation team shall consist of a minimum of two personnel. (1 firefighter and 1 officer)
- If an aerial device is used in operations, one person shall function as an aerial operator who shall remain at the primary control of the aerial device at all times. (1 firefighter)
- An IRIC (Initial Rapid Intervention Crew) shall be established that shall consist of a minimum of two properly-equipped and trained personnel. (2 firefighters)
- When an incident escalates beyond the initial first-alarm assignment, or when there is significant risk to fire fighters due to the magnitude of the incident, the Incident Commander (IC) shall upgrade the IRIC to a full Rapid Intervention Crew (RIC) that consists of four dedicated, fully equipped and trained fire fighters.
- A safety officer shall be dispatched to an initial full-alarm assignment when significant risks to firefighters are present and shall be deployed to all emergencies that go beyond an initial full-alarm assignment to ensure that the health and safety system is established at the emergency incident. A minimum of one individual shall be dedicated to this task. (Required under New Jersey state statute)

The fire department shall have the capability for additional alarm assignments that can provide for more personnel and services including the application of water to the fire; engagement in search and rescue, forcible entry, ventilation and preservation of property; accountability for personnel; and provision of support activities for those situations that are beyond the capability of the initial first-alarm assignment. Capabilities for adequate

response levels for incidents occurring in commercial, high density residential, institutional, and high-rise structures should also be considered. Lawrence Township contains several of these types of high hazard occupancies.

The career standard goes on to recommend resource requirements for higher hazard occupancies such as commercial, industrial, and high-density residential developments. The standard recommends that the initial first-alarm assignment to a structure fire in a typical strip shopping center ranging in size from 13,000 square feet to 196,000 square feet should include a total recommended minimum staff for this type of incident is 26 firefighting personnel (9 officers and 17 firefighters) and 2 EMS personnel. The standard recognizes that the additional resource requirements a fire agency would need to combat a structural fire in a commercial shopping complex are significantly greater than those required for a single-family dwelling fire.

Similarly, the standard recommends resource requirements for the initial first-alarm assignment for a fire occurring in a typical 1200 square foot apartment in a three-story garden-style apartment building at a minimum staff of 26 firefighting personnel (9 officers and 17 firefighters) and 2 EMS personnel. The standard further recommends resource recommendations for the initial first-alarm assignment for a fire occurring in a high-rise (a building with the highest floor greater than 75 feet above the lowest level of fire department vehicle access) at 37 firefighting personnel (16 officers and 21 firefighters) and 6 EMS personnel.

Staffing Analysis

The three-year period data set that was available for this report was found *not credible* for analyzing the staffing recommendations for NFPA 1720. Fire officials reported that due to inconsistencies with data entry by personnel completing fire reports, the available staffing numbers to emergencies could not be relied upon to make an objective determination of the agency's ability to meet the staffing performance benchmark under the standard. This has been attributed to a lack of training and understanding on the part of new fire officers and firefighters in the proper guidelines for critical data capture and entry. Often, fire reports are completed days after an incident leading to inaccuracies.

Another issue that affects the accuracy of the staffing standard is documentation of when a volunteer station is unable to field enough personnel to respond to an emergency. While another station is usually dispatched to cover the call, the record of this "scratched call" is lost in the system because the software utilized by the county to track dispatched apparatus drops the record of the missed response from the fire incident report. Unless the fire officer who completes the incident report re-enters the apparatus into the report or notes the missed response in the narrative section, history of the missed call is lost.

Some members of the agency have attempted to provide a record of missed calls however it requires significant effort sometimes involving listening to radio call logs to extract the information. Even then, the information may be flawed.

It was also reported by fire officials and noted during the process of analyzing NFIRS data for this report that the accuracy and quality of the fire reports varied considerably. The accuracy of data entered into the system is vital to produce credible analysis reports. Fire officials should strive to train and supervise all department personnel in a uniform methodology for completing fire reports. A free, on-line training program is offered by the National Association of Fire Marshalls at: https://nasfm-training.org/

Proper documentation of the primary function of the agency is critical. While the fire administrator is responsible for ensuring the accuracy of all completed fire reports, other duties distract him from this time-consuming task. The department should consider the appointment to another individual to take on this important task to safeguard the validity of the NFIRS data.

> ***Recommendation 1 –*** *The agency should appoint a department member to serve as the quality assurance officer for the NFIRS fire reporting and analysis system.*

Response Time Components and Performance Standards

The metric that is used when analyzing the overall response times of an emergency agency includes three components: alarm handling time, agency turnout time, and agency travel time. While the fire department has only limited ability to influence alarm handling time, the other two components of the equation, turnout time and travel time can be influenced by agency performance standards and station location.

Emergency service agencies often express their incident response time performance using averages. While using averages for response time analysis gives a glimpse of the response time performance of the fire department, this method is limited in scope as it only expresses a median value; one-half of the responses were under the average response time while one-half were over the average response time. A more accurate way of expressing response times can be obtained by using fractile percentages, a system of analysis that reflects actual performance as measured against a standard.

For example, the NFPA 1720 standard recommends that a combination career/volunteer fire agency should respond and arrive at the scene of a structure fire with 10 firefighting members within 10 minutes of total response time in 80% of incidents. While utilizing averages for analysis of response time data is no longer considered fire service best

practice, the data available for this report did not allow for the analysis of response times by fractile percentages. The data set available only provided average performance measures. Average response times only express a level of compliance that an agency was able to meet in 50% of instances and conversely in 50% of instances where the agency did not meet the standard.

> ***Recommendation 2*** *– The agency should develop a database capable of analyzing response time performance measures using fractile percentages as recommended by current fire service best practices.*

Alarm Handling Time

Alarm handling time is defined as the time interval between from the receipt of the alarm at the primary Public Safety Answering Point (PSAP) until the transmittal of the response information via voice or electronic means to an emergency agency. While an in-depth analysis of the alarm handling times was beyond the scope of this report, the study team noted that the current emergency call answering and dispatching procedure in Lawrence Township involves a multi-step process.

All emergency and 9-1-1 calls originating within the township are answered by the primary PSAP located in the Police Department. The service is provided under contract by IPX Corporation who is responsible for the staffing, training, and supervision of all communications personnel. The arrangement also specifies that a police shift supervisor will be in charge of all police/dispatching functions.

The Township continues to own and maintain the dispatching technology infrastructure. The center is also the primary call center for the police department and handles telephone calls for other bureaus in the department as well as answering general questions of the public. Center personnel are charged with determining the nature of a reported emergency and routing the call information to the appropriate agency. Calls of a police nature are retained by the center resulting in township police resources being dispatched. All calls determined to be of fire, rescue or emergency medical nature are then transferred to the Mercer County Emergency Services Communications Center (MCESCC) located on the campus of the Mercer County Fire Academy/Dempster Fire Training Center at 350 Lawrence Station Road in the southeast corner of the township.

The requirement to transfer all fire, rescue, and emergency medical requests to a second agency generally adds precious seconds and possibly minutes to the alarm handling time. It may also increase the possibility for errors in transmitting critical information. The secondary center dispatcher must first answer the call transfer and re-interrogate the caller to receive the appropriate information before the alarm can be transmitted to fire,

rescue, or EMS services. This often results in frustration expressed by excited callers who are forced to repeat critical information under stressful conditions and can result in a substantial delay in dispatching the call. Benchmarks for alarm handling times under NFPA 1221 Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems, 2019 Edition establishes an alarm-handling time benchmark wherein 90 percent of emergency alarm processing shall be completed within 64 seconds, and 95 percent of alarm processing shall be completed within 106 seconds. Extensions are granted for reports involving Emergency Medical Dispatch (EMD) protocols, foreign languages, the deaf, hazardous materials, technical rescue, criminal activity that might compromise responder safety, text messages and for those calls that require determining the location of the alarm due to insufficient information.

Township fire personnel have reported they often will hear via radio scanner that police sector cars are being dispatched to the scene of a fire, rescue or EMS emergency before fire and EMS resources are alerted. While this information was received anecdotally, it raises the question as to whether the present system of transferring fire and EMS calls to the County dispatch service may result in prolonged alarm handling times that can affect overall response times.

> ***Recommendation 3*** *– The Township should conduct a review of the current protocol of fire, rescue, and EMS dispatching hand-off to County dispatch to ensure that alarm handling times are within NFPA alarm handing time performance standards.*

Agency Turnout Times

Turnout time is defined as the time interval between the time of transmission of the alarm information from the dispatch point to the responding agency and the time that the apparatus begins their response from the station. NFPA standards call for benchmark turnout times to be 60 seconds for EMS calls and 80 seconds for fire calls for 90% of all emergency responses. The standards allow longer turnout times for fire calls to allow in-station personnel to don their personnel protective equipment prior to mounting the apparatus and only applies to fire departments that provide staffed fire stations.

Absent the data to conduct a fractile percentage analysis of the overall average turnout times of the department, a review of the average turnout times for the career staff and the volunteer stations may be instructive. The following table shows the turnout times for each station expressed in averages. The career staff times illustrated are the average turnout times for the on-duty career firefighters when responding from a volunteer station. It should be noted that during the three-year data time period, the career staff was based periodically out of each of the volunteer stations which may have had an effect on the

averages. Combined average turnout time for the career staff was 1 minute, 8 seconds (68 seconds) while combined average turnout for the volunteer stations was 3 minutes 46 seconds (226 seconds). These statistics illuminate the advantage of having staffing in the station rather than responding from home or work. *Average turnout time for the career staff was 2 minutes and 38 seconds (158 seconds) faster than the unstaffed volunteer stations.*

The data may also be interpreted that the Slackwood station enjoys a quicker turnout time (for volunteer members) because of the compact nature of the coverage area resulting in volunteer members having a shorter distance to travel from their residences or workplaces to their station. In contrast, the other two stations each have a much larger coverage area which may explain why their turnout times are longer as their members have longer travel distances to the stations.

Agency Response Times The ability to deliver sufficient personnel and equipment to the scene of an emergency in a timely manner on a consistent basis is a benchmark standard

Average Turnout Time per Station for Date Range

Start Date: 01/01/2017 | End Date: 12/31/2019

STATION	AVG. TURNOUT TIME, in h:mm:ss (Dispatch to Enroute)
Career Staff	
	0:01:08
Station: 21 – Slackwood	
Career	0:01:39
Volunteer	0:03:40
Station: 22 - Lawrence Road	
Career	0:00:49
Volunteer	0:04:10
Station: 23 – Lawrenceville	
Career	0:00:58
Volunteer	0:04:04
Volunteer Combined	0:03:46

for any fire department. As previously mentioned, NFPA 1720 recommends that a combination career/volunteer fire department serving a suburban town like Lawrence Township should be able to meet a minimum response time of 10 minutes with 10 members on scene of an emergency for 80% of all incidents. While the data set covering the three-year period (2017 – 2019) was not detailed enough to analyze if this recommended response capability was met in regard to staffing, the average response

times that were available can give us a sense of what the response time performance was for the first arriving fire unit to each incident. Again, the use of averages to express performance measurements for fire and EMS agencies is no longer consider a best practice, however, the data is instructive in giving a sense of the response capabilities of the agency.

The following table shows the response times for each station expressed in averages. The career staff times illustrate the average response times when only the career staff were dispatched to an incident. The combination times express the average response times to incidents that both the career staff and volunteer members were dispatched, generally during weekday hours. The volunteer times illustrate the average response times for volunteer member coverage only, generally nights and weekends. Average response times by the career staff was 6 minutes, 47 seconds (407 seconds), however it should be noted that the career staff coverage area includes the entire 22 square mile township. Average response time to incidents where both career and volunteer members responded was 6 minutes, 25 seconds (385 seconds). The combined average response times for the volunteer stations was 9 minutes 5 seconds (545 seconds).

Average Response Time per Station and Shift for Date Range

Start Date: 01/01/2017 | End Date: 12/31/2019

STATION	SHIFT	AVG. RESPONSE TIME in h:mm:ss (Dispatch to Arrival)
Station: 21 - Slackwood		
	Career	0:08:29
	Combination	0:05:37
	Volunteer	0:07:44
Station: 22 - Lawrence Road		
	Career	0:05:02
	Combination	0:06:05
	Volunteer	0:09:15
Station: 23 - Lawrenceville		
	Career	0:06:52
	Combination	0:07:34
	Volunteer	0:10:16
All Stations		
	Career	0:06:47
	Combination	0:06:25
	Volunteer	0:09:05

The response time averages for the volunteer stations can be interpreted to show that response times are the shortest in the Slackwood area due to the smaller size of the coverage area while the response times in the two larger fire districts, Lawrence Road

and Lawrenceville are greater due to longer travel times. It should also be noted that while the data set identifies the arrival time of the first unit on scene, this unit may often be only a chief officer in command car with no ability to safely initiate a fire attack or conduct search and rescue operations.

The response times for the career staff are a bit more difficult to interpret because the staff was based out of different station locations during the three-year study period. The response times from the Slackwood location are the longest at 8 minutes, 28 seconds mostly likely due to the station being located in the extreme southern portion of the township. Thus, long travel distances to the central and northern areas of the municipality would be expected. Response times by the career staff from the other two stations were shorter most likely due to the location of each station is more central to all areas of the community.

> ***Recommendation 4 –*** *The agency should conduct an analysis of station turnout times and overall response times as measured against NFPA standards expressed in fractile percentages.*

Fire Station Location Analysis

The placement of fire stations within a community has a direct impact on the efficient operation of a fire department. The ability of the local fire agency to deliver an effective fire and rescue force in a timely and consistent manner is a hallmark of a capable emergency organization. There are two reference standards that can be applied to station location for volunteer and combination fire organizations. These standards are NFPA 1720: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments, 2020 Edition, and the Insurance Services Office (ISO) Fire Suppression Rating Schedule. NFPA 1720 recommends that a fire department serving a suburban community like Lawrence Township should be able to muster an effective firefighting force of 10 firefighters to the scene of a structure fire in 10 minutes or less, 80% of the time. The ISO standard recommends that each protected area should have a first-due engine company located within 1.5 road miles and a ladder or service company located within 2.5 road miles of any structures in the built-upon area.

There are several contributing factors that also must be considered when selecting a site of a fire station, including: centralized location, access to major roadways, local traffic conditions, and the nature of the fire district to be protected. Additionally, in the case of a fire department that depends on volunteer members who typically respond from their

private residences or places of employment, proximity to the volunteer's homes or workplaces need to be considered.

Centralized location means that a fire station would ideally be situated in an area that provides for reasonable travel times for apparatus to respond to service demands within their primary response zone. This is typically referred to in the fire service as the first-due response area. While not always possible due to local conditions, fire stations should ideally be located at or near the geographic center of the first-due response area. This would generally allow for the shortest travel routes to service calls within the primary response zone. A fire station that is situated at the far end of their first-due response area can be expected to have increased travel times resulting in longer response times.

Access to major roadways is a factor that must be considered, because proximity to the arterial streets in the community will allow for a timelier response of apparatus. If a fire station is located deep within a residential or commercial development with lengthy distances to major roadways, responses times can be expected to be longer. If possible, fire stations should be located on or very near a major thoroughfare.

Local traffic conditions must also be considered. Areas that experience periodic heavy traffic and congestion especially during commuting hours can be expected to have lengthier response times. This is because the apparatus must contend with a high volume of vehicles along the roadways. An example is a fire station located near a school. Student drop-offs by private vehicles, school buses and foot traffic could possibly impede a timely response by a fire apparatus.

The nature of the fire district is also a factor to consider. Topographic features such as steep hills, narrow roadways, low underpasses, weight limited bridges and overpasses, limited access highways, tunnels, railroad crossings, rivers, lakes, and other bodies of water will all have an effect on apparatus response times. Any man-made or natural land features that constrain or restrict the flow of vehicle traffic need to be considered. Large tracts of undeveloped land separating already developed areas can also lengthen travel distances.

Fire districts that are primarily served by volunteer firefighters must consider travel distance from the members' homes or places of work. Traditionally, volunteer fire stations were built in areas that were adjacent to neighborhoods where the volunteers lived or worked. This typically resulted in various individual fire company stations scattered among several areas of a municipality. Under the older volunteer response model, volunteer firefighters were summoned to their neighborhood fire station via siren or air

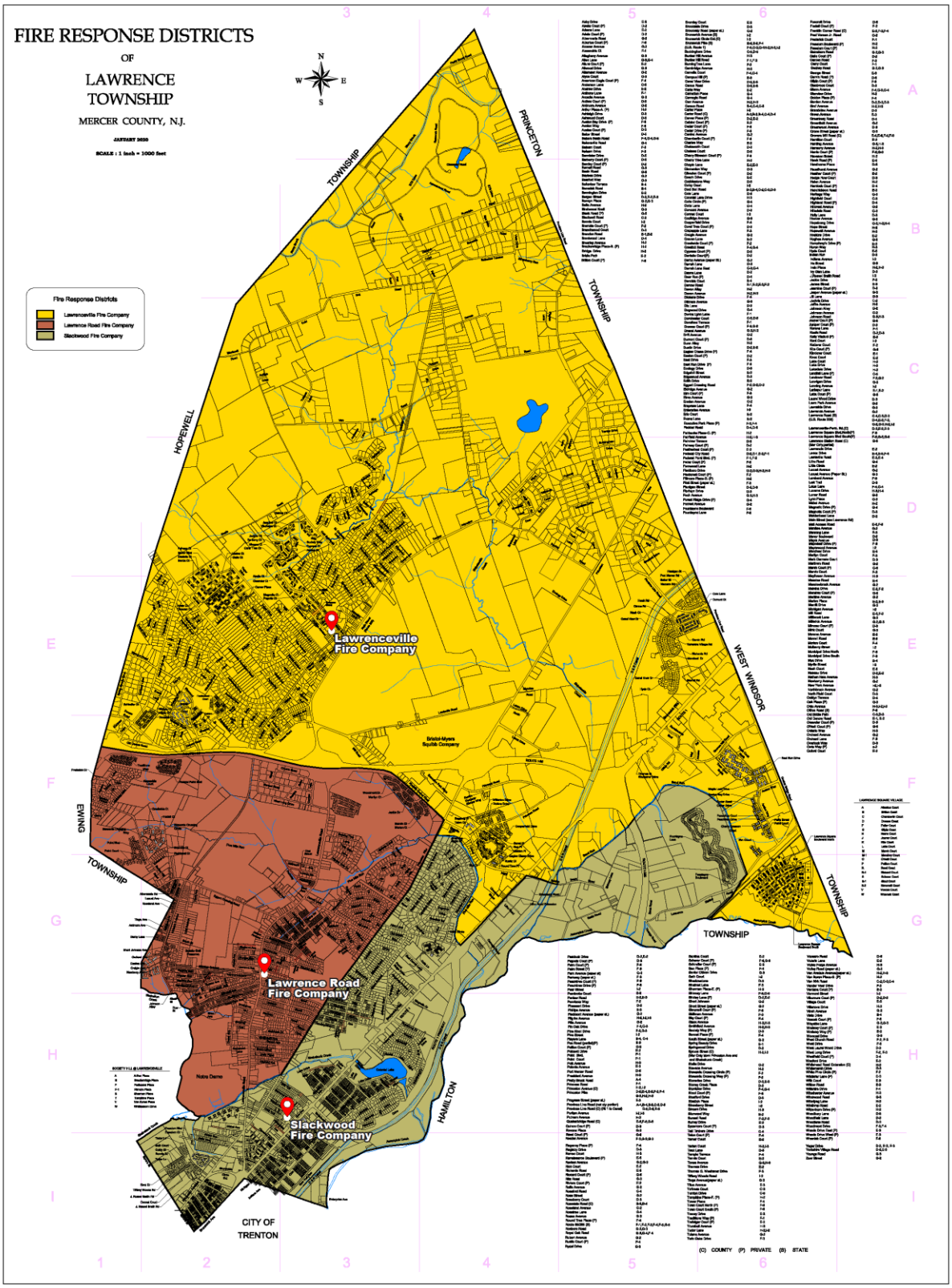
horn in the event of an alarm. This required members to transport themselves to the station on foot or by driving a short distance.

This response model served the volunteer fire service well for many years until demographic and socio-economic changes made the single company fire station system unsustainable for many communities. This often resulted in the consolidation of multiple single companies into a centrally located station to house all the community apparatus. This merging of fire companies into one location often did not take into account the effect of travel times to the station by off-duty volunteers. Because the consolidated station was no longer located in the neighborhood where the members lived or worked, travel times to the fire station lengthened and overall response times suffered. Available off-duty volunteers had to travel farther to the station to respond to a call thus adding precious minutes to the overall response. Many volunteer fire organizations have attempted to minimize this problem by instituting a duty crew system of volunteer members that are required to be on-duty in the station or in close proximity; Lawrence Township recently instituted such a program. Other agencies, including Lawrence Township, have hired career firefighters to staff the fire station during working hours to provide timely coverage for the community.

Lawrence Township is presently served by three semi-independent fire companies operating out of three fire stations:

- Slackwood Fire Company/Fire District No.1 (Mercer County Fire Station 21), 21 Slack Avenue in the southern portion of the township.
- Lawrence Road Fire Company Fire District No. 2 (Mercer County Fire Station 22), 1252 Lawrenceville Road in the south-central portion of the township.
- Lawrenceville Fire Company/Fire District No.3 (Mercer County Fire Station 23), 64 Philips Avenue in the central portion of the township.

The following map shows the location of each fire station as a white dot within the respective fire response district.


FIRE RESPONSE DISTRICTS
OF
LAWRENCE
TOWNSHIP
MERCER COUNTY, N.J.
JANUARY 2020
SCALE : 1 Inch = 1000 Feet
N
S
E
W
Fire Response Districts
Lawrenceville Fire Company
Lawrence Road Fire Company
Slackwood Fire Company
PRINCETON
TOWNSHIP
HOPEWELL
TOWNSHIP
WEST WINDSOR
TOWNSHIP
EWING
TOWNSHIP
HAMILTON
TOWNSHIP
CITY OF
TRENTON
Lawrenceville
Fire Company
Lawrence Road
Fire Company
Slackwood
Fire Company
Bristol-Myers
Squibb Company
Notre Dame
(C) COUNTY (P) PRIVATE (S) STATE

Slackwood Fire Company

The Slackwood Fire Company is located at 21 Slack Avenue in the extreme southern end of the municipality and was organized as the first township fire company in 1907. The area developed in the early 20th century as a suburb offering affordable housing to factory workers and their families from nearby Trenton. The district is characterized by small bungalow-style homes on modest sized lots and small retail occupancies. The fire station is positioned on a residential street a short distance from Brunswick Pike. This location is near the southern residential area; however, it is remote from the central and northern portions of the township. It is also located on a relatively narrow residential street that makes it difficult to maneuver large fire apparatus in and out of the front bay access engine room doors. The building has evolved over the years from the original 2 ½-story wood frame two-bay engine house with multiple one-story masonry additions adding several engine bays along Slack Avenue and a social hall in the rear. The building is in fair condition but lacks appropriate overnight facilities for firefighters.

The fire response district for Slackwood covers an elongated area that includes both residential, commercial, and light industrial areas clustered along Business Route

1/Brunswick Pike and Princeton Pike corridors. The location of the station in the southern end of the township near the Hamilton Township, City of Trenton and Ewing Township borders affords the fire company rapid response times to mutual aid and automatic aid calls to these municipalities. The Assunpink Creek forms the southern limit of the fire coverage area while bordering Hamilton Township as the district extends northward to an area where the Dempster Fire Training Center and the large 486-unit Liberty Green high-density housing development on Fountayne Lane are located. This northern area is a considerable distance (4.2 road miles) from the Slack Avenue fire station.

Lawrence Road Fire Company

The Lawrence Road Fire Company is located at 1252 Lawrenceville Road in the southwestern quadrant of the township. It was organized in 1914 as the second fire company in the township. The fire station is located in an area of mixed light commercial and residential development. The building has undergone numerous renovations and additions. The two-story brick two-bay engine house built in the 1920s was converted to office and administrative space, and a front entry-only three-bay one-story masonry and steel engine house was added in the 1980s. A one-story addition at the rear contains a

large social hall. The building fronts on Lawrenceville Road and occupies a parcel with an adjacent parking lot between Pilla Avenue and Marlboro Road. The building is in fair condition and lacks appropriate overnight facilities for firefighters.

The fire response district covers an area bordered by Ewing Township to the west, Route 295 to the north, Franklin Corner Road and Princeton Pike on the east, and Shabakunk Creek to the south. The district includes the campus of Rider University; the municipal complex; the Lawrence High School, Middle School, and Intermediate School complexes; Notre Dame High School; the Eggerts Crossing Army National Guard complex; multiple apartment and townhouse complexes; and large areas of single-family residences. The district is fairly compact with most occupancies within 4 road miles of the station. The station is also located only 1.5 road miles from the Slackwood fire station and 2.6 road miles from the Lawrenceville fire station.

Lawrenceville Fire Company

The Lawrenceville Fire Company is located at 64 Philips Avenue in the Lawrenceville/Main Street area in the central portion of the township. The fire company was organized in 1915 as the third fire company serving Lawrence Township. The station occupies a compact parcel between Philips and Gordon Avenues one block west of Lawrenceville Road. The original two-story wood frame station building that faces Philips Avenue has been converted into administrative, training, and social hall after a large five-bay rigid frame metal engine house was added in the 1980s. Four of the engine bays now face Gordon Avenue with a generous sized concrete front ramp that allows for safe maneuvering of departing apparatus onto the residential street. The station is in very good condition and has adequate overnight facilities for firefighters. The building features a radio room, a break room, a workshop, a fully equipped physical fitness room, a ten-bed bunk room, a game room with kitchen, a meeting room, four offices, restrooms, showers, and a social hall with a commercial kitchen.

The fire response district covers an area bounded by Route 295, Sand Run, and Assunpink Creek to the south, Hopewell Township on the west, the Municipality of Princeton to the north and east, and West Windsor Township and a small area of Hamilton Township on the east. The district covers a much larger geographic area than the other two township fire companies. The area is characterized by mixed uses with large areas of residential developments, apartment and townhouse complexes concentrated in the southwestern corner of the district. The Lawrenceville Main Street Historic District, an area of historic homes and commercial buildings, is located near the fire station. The campus of the historic Lawrenceville School, a private college preparatory boarding and day school established in 1810, is also located nearby. The southeastern area contains several high-density residential developments, a large regional enclosed shopping mall, and numerous commercial, retail and office occupancies scattered along the main transportation corridors of Route 1, Princeton Pike and Quakerbridge Road. The central and northern areas of the district feature large areas of preserved open space and parkland, along with several areas of large single-family homes on large lots. Both campuses of Bristol Myers Squibb and the Educational Testing Service occupy sizable sites in the district. The district also covers most of the Route 295 corridor through the township.

Most of the district is accessible from the fire station within 5 road miles, however, a high-density townhouse complex, Lawrence Square Village, is more than 6 road miles from the station. It should also be noted that the Lawrenceville Fire Company previously operating a small two-bay sub-station that housed a single engine located off Quakerbridge Road on Lawrence Square Boulevard North near the West Windsor and Hamilton Township borders. The building was staffed by a single career firefighter during weekdays hours. The station was opened in 1989 to service the increased development

in the Quakerbridge Road area including several high-density residential housing complexes, the Quaker Bridge Mall, and several large retail and commercial centers in the area. The station was shut down in 2004 after a special township committee recommended its closure. Some fire officials were not in agreement with the committee's decision to close the station and reassigned the career firefighter to another station.

Travel Time Analysis

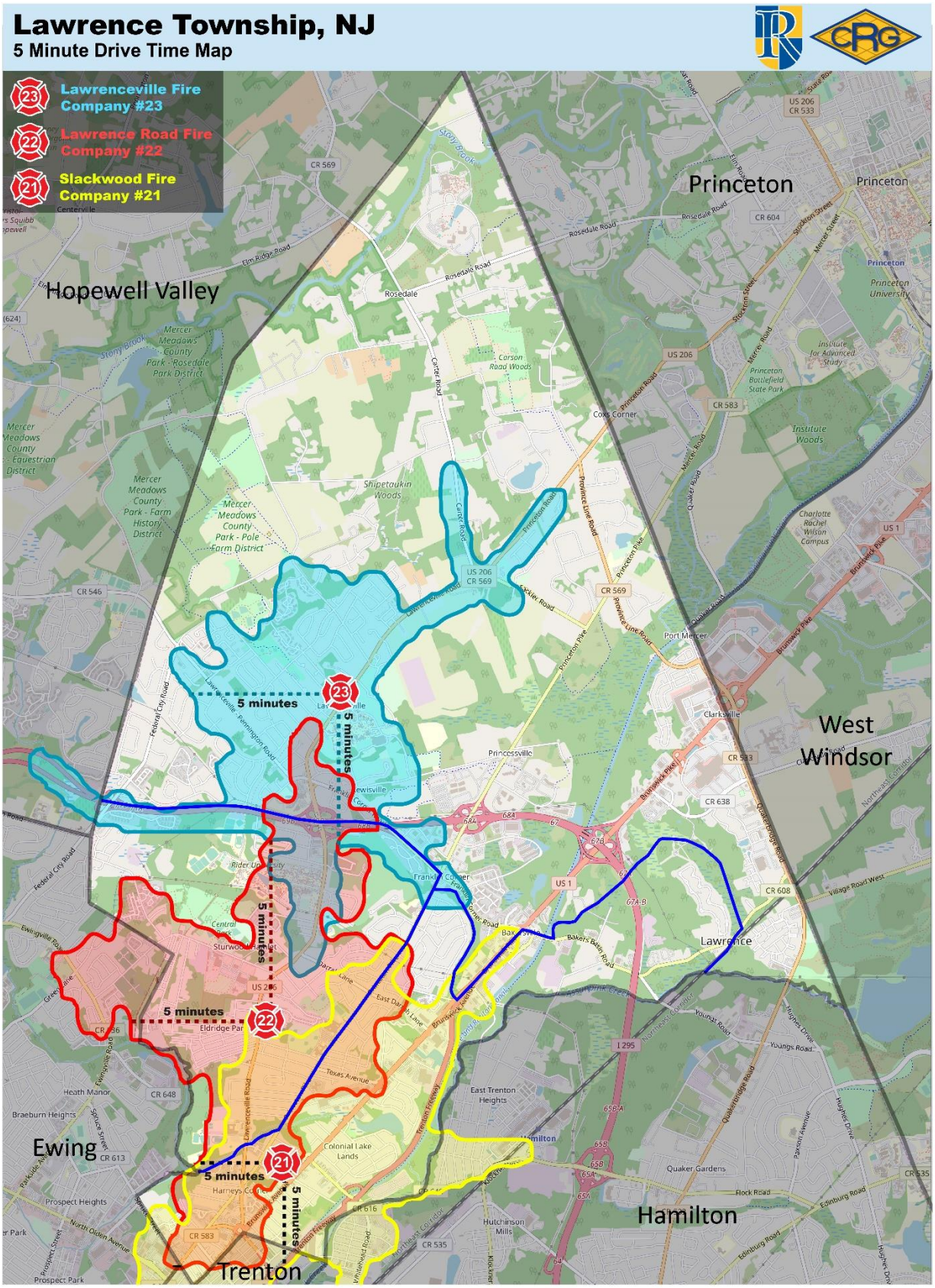
As noted earlier in this section, travel time is a factor that a fire agency has little control over other than placing fire stations in locations that provide for reasonable travel times to all locations within a fire response district. The layout of streets and major roadways and their impact on fire apparatus travel times are rarely a consideration as a community evolves and new developments are constructed. The safe operation of fire apparatus is also a limiting factor in travel time as increasing apparatus response speeds is not a prudent option when piloting large fire vehicles through civilian traffic. The safety of the motoring public and the responding firefighters must not be compromised in a vain attempt to overcome long travel distances by speeding fire apparatus.

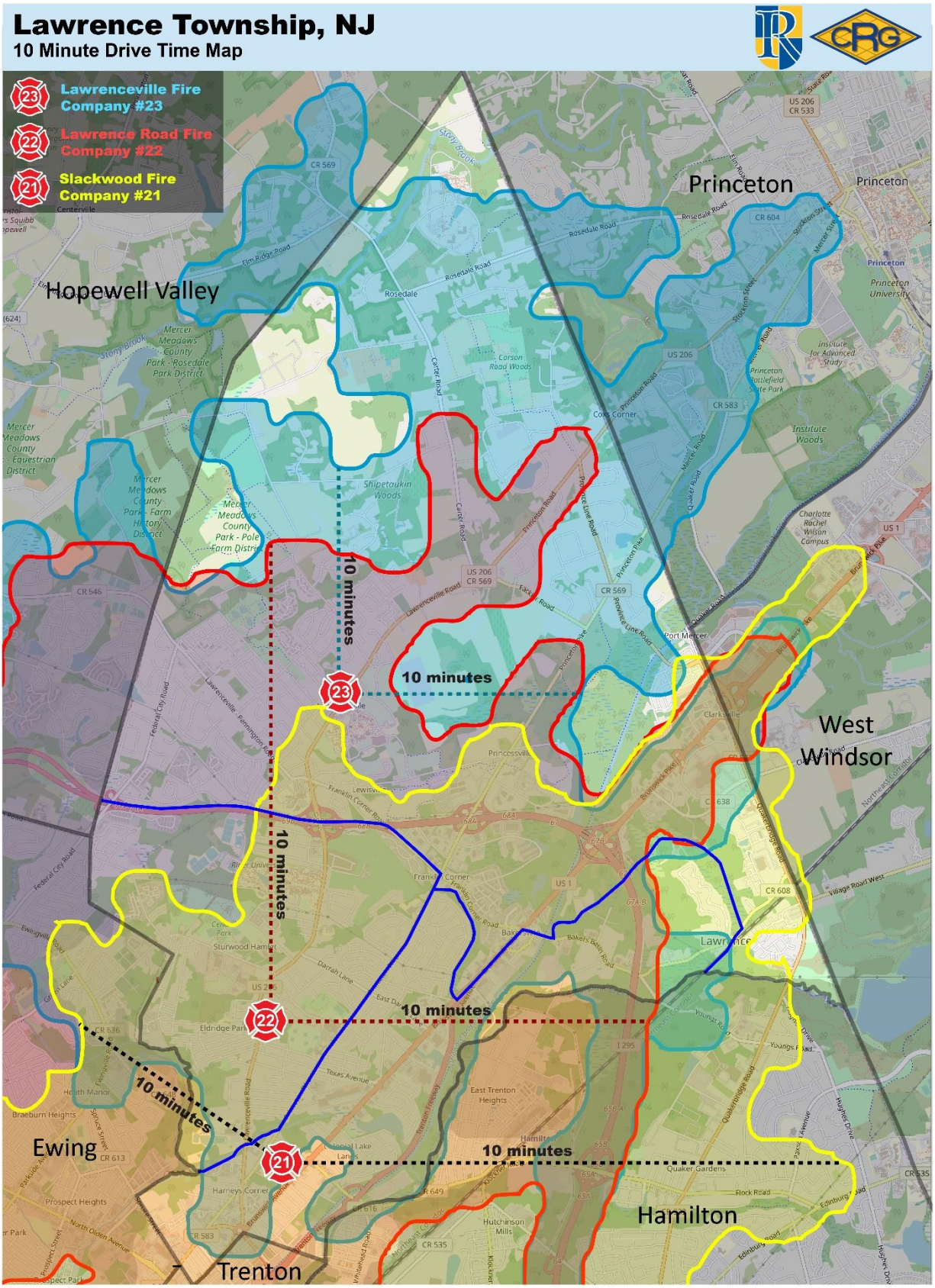
The fire service accepted methodology for measuring the travel time of a responding fire apparatus is based on an algorithm developed in a study by the RAND Corporation in conjunction with the New York City Fire Department (FDNY) in 1977. The study determined that the average speed of a fire apparatus on an emergency response was 35 miles-per-hour over average terrain, with average traffic and weather conditions, and slowing for intersections. Using the RAND calculation, a responding fire apparatus can be expected to safely travel approximately 2.5 miles in 5 minutes and about 5 miles in 10 minutes. The RAND study used the FDNY as the model for the study so response territory that is markedly different from an urban city can affect travel time. The size and configuration of the apparatus can also affect travel times. Larger apparatus like ladder trucks and fire tankers/tenders can be expected to have longer travel times. However, the RAND formula has proven very reliable over time and is used by ISO and other agencies to dependably estimate fire apparatus response times.

The following response time maps were produced by Critical Response Group, Inc. (CRG), an affiliate of The Rodgers Group, LLC., using the RAND algorithm. The maps depict the travel time limits using actual roadway miles for responses initiated from each station. The maps display the projected travel time from each fire station expressed in 5-minute and 10-minute intervals using color-coded travel time perimeter shapes overlaid onto a township street map. Each fire response district perimeter is outlined in blue and each fire station location displayed as a red Maltese cross with the fire station number.

The 5-minute drive time map is a good illustration of the ability to provide reasonable response times in the smaller coverage area fire districts, Slackwood and Lawrence Road. Each of the smaller districts are able to arrive to most of their coverage areas within the 5-minute limit. It also illustrates how concentrated the fire coverage is in the southern and southwestern portions of the township with the two stations located only 1.5 miles apart. There is significant overlap of coverage in this area. The map also shows that with the larger area coverage district, Lawrenceville is unable to cover much of their area in the same 5-minute limit due to the longer travel distances required.

The 10-minute drive time map however illustrates that the more centrally located Lawrenceville station is able to provide almost complete township-wide coverage while the more southernly located stations, Slackwood and Lawrence Road, are unable to reach many of the northern areas of the township in reasonable response times. Both stations located in the south end of the township also had very good response time coverage to mutual aid areas in Ewing Township, the City of Trenton, and Hamilton Township.


Lawrence Township, NJ
5 Minute Drive Time Map
Lawrenceville Fire Company #23
Lawrence Road Fire Company #22
Slackwood Fire Company #21
Princeton
Hopewell Valley
West Windsor
Lawrence
Hamilton
Ewing
Trenton
5 minutes
5 minutes
5 minutes
5 minutes
5 minutes


Lawrence Township, NJ
10 Minute Drive Time Map
Lawrenceville Fire Company #23
Lawrence Road Fire Company #22
Slackwood Fire Company #21
Hopewell Valley
Princeton
Princeton
West Windsor
Lawrence
Hamilton
Ewing
Trenton
10 minutes
10 minutes
10 minutes
10 minutes
10 minutes
10 minutes

Incident Concentration Analysis

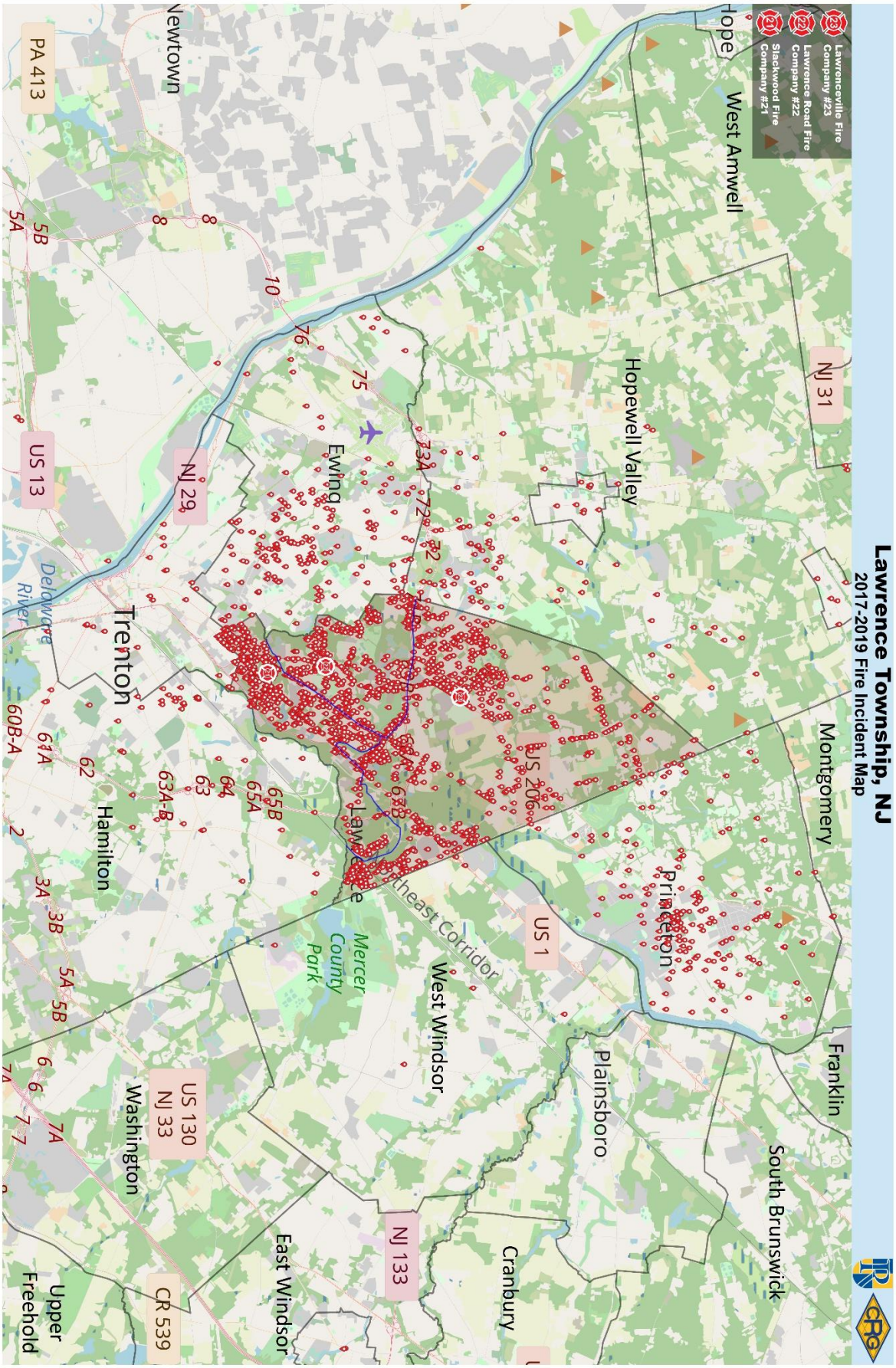
One of the factors to be considered when validating the positioning of fire stations is the location and concentration of incidents occurring in the fire response district. The prior history of emergency service demands of a given community should be viewed as an excellent predictor of future incident demands. The following map was produced by CRG to show the location and concentration of fire and rescue service demand in the township. The map depicts the number of fire incidents that have occurred in the township over the previous three-year period (2017-2019). Each incident location is plotted as a pin point on a street map of the township and surrounding communities. Note that address locations where multiple incidents have occurred are only represented by a single pin for that location.

The map vividly shows the service demand concentration in the southern and central portions of the township where most of the occupancies are located. The less populated and developed northern portion of the township has a much lighter service demand history. Demand is also concentrated along the major arterial roadways including Route 1/Brunswick Pike, Route 295, Princeton Pike, and Lawrence Road. This is most likely due to service demand for motor vehicle related fire and rescue incidents.

There is one area of particular concern that appears to have a high service demand in an area remote from the existing fire stations. The map shows a concentration of incidents in the southeastern corner of the community near the township border with Hamilton Township and West Windsor Township along Quakerbridge Road. This area is located in the extreme southeastern portion of the fire response district for the Lawrenceville station, and is a considerable distance from all of the fire stations. The area includes several high-density apartment and townhome complexes including the Mercer at Lawrence Station apartments (312 units), the Eaves Lawrenceville apartments (632 units), and the Lawrence Square Village mixed townhome and condominium complex (820 units). The area also features a recently constructed 156,000 sq. ft. Costco warehouse retail outlet, and several other large retail and commercial occupancies along Quakerbridge Road. It is interesting to note that this coverage area is in the exact neighborhood where the previously closed Lawrenceville Fire Company sub-station was once located. An analysis of travel times to the Lawrence Square complex shows that it is located 7.9 miles (16 minutes) from the Lawrenceville Station, 6.7 miles (13 minutes) from the Lawrence Road station, and 6.2 miles (12 minutes) from the Slackwood station.

The map also shows the large number of incidents where township fire assets responded to automatic and mutual aid incidents in adjacent jurisdictions. During the three-year study period (2017-2019) Lawrence Township units responded to 215 automatic aid incidents

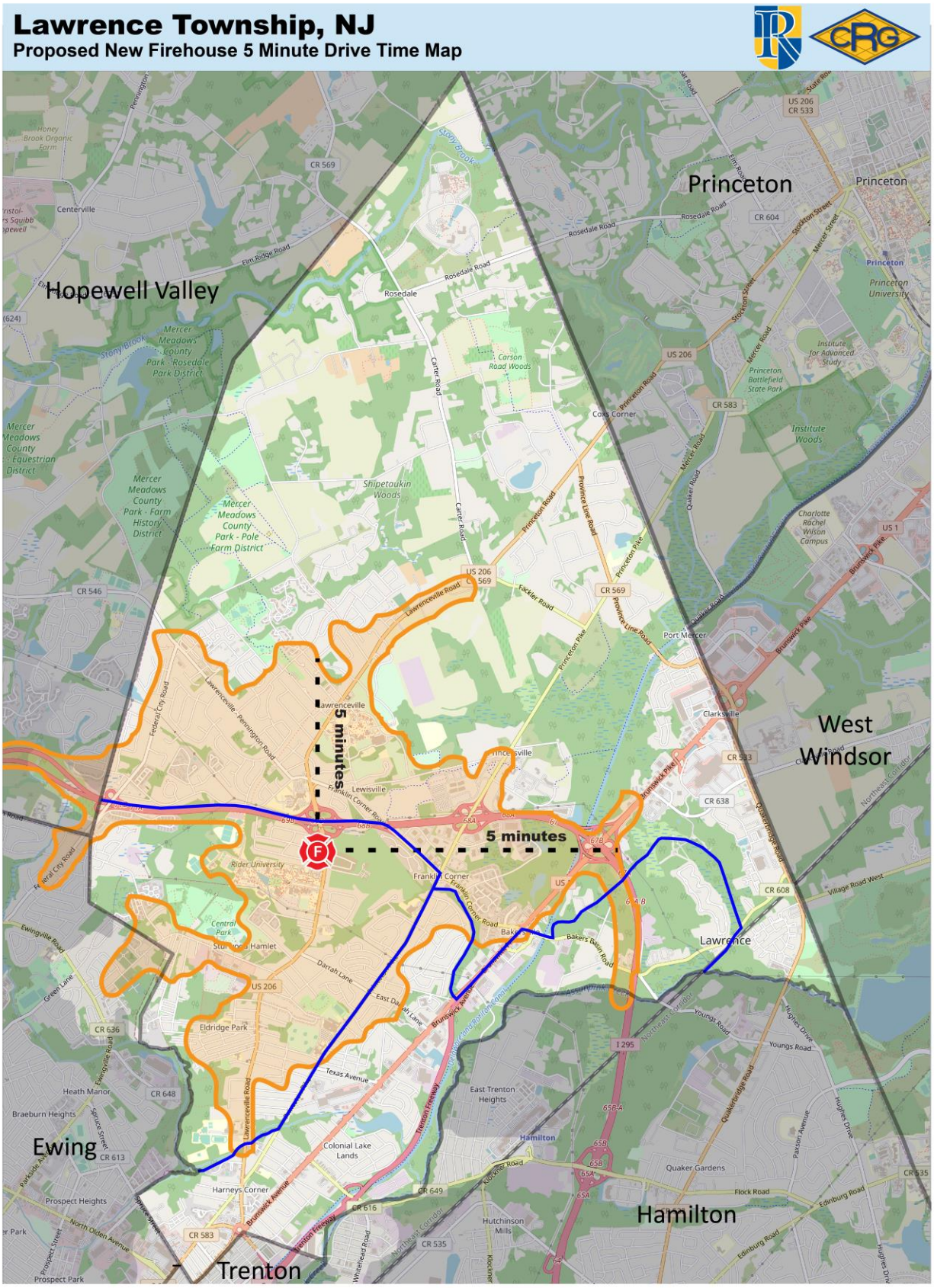
and 390 mutual aid incidents for a total of 605 incidents or 14.22% of the 4253 total fire incident responses for the time period. The breakdown of the number of incidents where aid was given to municipalities was Princeton (159), Ewing (157), Hamilton (150), Pennington (72), Trenton (47), Hopewell (13) West Windsor (1), Plainsboro (1), Falls Township PA (2), Tullytown PA (1), and Morrisville PA (2).

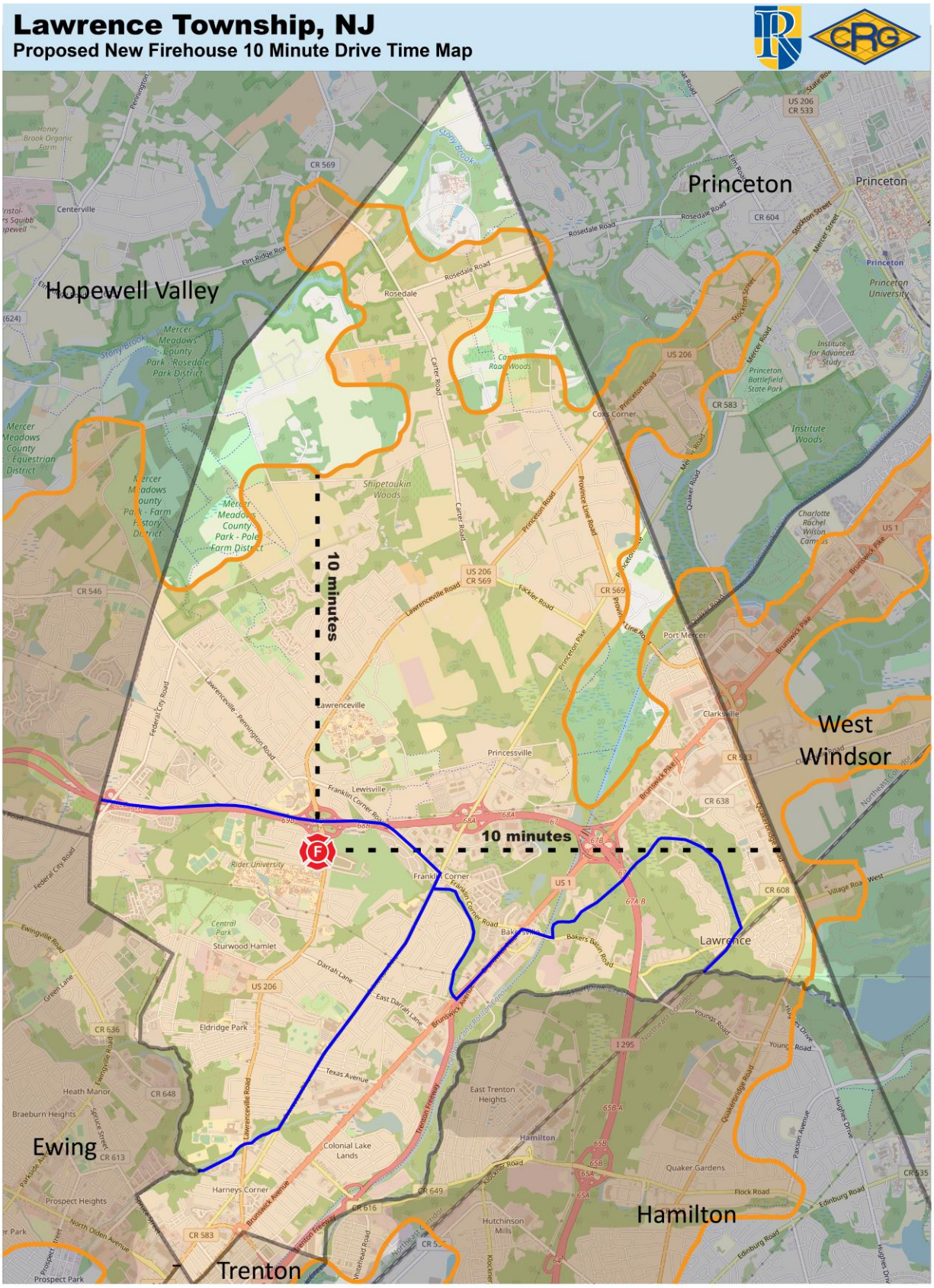

Lawrence Township, NJ
2017-2019 Fire Incident Map
Lawrenceville Fire Company #23
Lawrence Road Fire Company #22
Slackwood Fire Company #21
West Amwell
Hopewell Valley
Montgomery
Franklin
South Brunswick
Plainsboro
Princeton
West Windsor
Cranbury
East Windsor
Washington
Upper Freehold
Hamilton
Trenton
Ewing
Lawrence
Newtown
Delaware River
Mercer County Park
Northeast Corridor
NJ 31
US 206
US 1
NJ 133
US 130
NJ 33
CR 539
US 13
NJ 29
PA 413

Proposed New Station Location Analysis

During discussions with fire officials and members of each fire company, several members relayed that a previous study had recommended that the township consider building a new fire station. Construction of a new station provides the opportunity not only to provide improved fire department facilities but also to incorporate EMS and Emergency Management functions into the same location.

The following maps were produced by CRG and show the 5 and 10-minute travel time perimeters for a proposed fire station centrally located within the Township. A site selected should offer quick access to all areas both north and south of Interstate 295 as well as rapid access to both travel directions of the highway. While the scope of this project did not allow for an in-depth study and site selection of for a new fire station, the location should be near the geographical center of the township. Locating a new facility near Rider University may also benefit recruitment as referenced in another section of this report regarding the recruitment of volunteer firefighters from the student population of the university.


Lawrence Township, NJ
Proposed New Firehouse 5 Minute Drive Time Map
Princeton
Princeton
Hopewell Valley
West Windsor
Lawrence
Hamilton
Trenton
Ewing
5 minutes
5 minutes


Lawrence Township, NJ
Proposed New Firehouse 10 Minute Drive Time Map
10 minutes
10 minutes
Princeton
Princeton
Hopewell Valley
West Windsor
Lawrence
Ewing
Hamilton
Trenton

The 5-minute response time map shows very good coverage for the central part of the township from a proposed new station site. The 10-minute response time map shows that a central site has almost complete coverage of the southern and central areas of the community. Only small pockets of territory in the northern section of the township could not be reached in the 10-minute span. However, most of these areas are undeveloped preserved open-space tracts and public parkland. The 10-minute map also provides more timely responses to the lower Quakerbridge Road residential and commercial areas in the extreme southeastern corner of the community that was previously covered by the now-closed Lawrenceville sub-station.

> ***Recommendation 5 –*** *The township should undertake an in-depth study of the current fire station locations and capabilities in regard to overall emergency service demand and response times to determine the feasibility of constructing a new fire station in a central location in the Township. A new fire station should be designed to accommodate the Fire Department, EMS and Emergency Management functions of the Township.*

Mutual Aid

The Lawrence Fire Department is a member of the Mercer County Fire Mutual Aid System. The Mercer County Fire Mutual Aid System is based in the Mercer County Emergency Services Communications Center within the Dempster Fire Training Center.

One of the common challenges during multi-agency incidents can be the ability for different agencies to communicate. The Mercer County Emergency Services Communications Center has a robust fire communications system capable of handling interoperability with the host agency and mutual aid partners.

The Mercer County Fire Coordinator is a volunteer position supported by six deputy fire coordinators. The Coordinator works with each Mercer County fire chief to develop a box alarm run card (a pre-determined list of fire department resources) for each alarm up to five alarms. The system meets the requirements set forth in the New Jersey Fire Service Resource Emergency Deployment Act.

The role of the fire coordinators during an emergency is to support the local incident commander. As such, a coordinator may be assigned to staff an unfilled position within the Incident Command System or may respond to the communication center to support the deployment of resources.

In Lawrence, each of the three fire companies have multiple and unique box alarm run cards based on their primary response district. The closest mutual aid companies are listed based on anticipated response time. There are a number of additional run cards for schools, senior centers, commercial and industrial target hazards. There are also run cards for specialized incidents such as highway motor vehicle collisions and brush fires.

Each box alarm run card includes units for response to the incident location and units to provide two engine companies and one ladder company for station coverage. They run air cascade services to refill self-contained breathing apparatus.

The traditional role of the fire service has evolved over the years to include specialized rescue and building collapse. These types of low-frequency high-risk responses are manpower intensive and require substantial hours of initial and refresher training. Most fire departments find the specialized training requirements a challenge to meet and consequently depend on regional agreements for response to these types of incidents. Mercer County addresses this need through the use of in-county and out-of-county assets.

Certain counties in the state have been designated as Urban Areas Security Initiative (UASI) areas. Federal UASI funds are used to purchase equipment and train firefighters to respond to these specialized types of incidents within the designated areas. Although Mercer County is not within the UASI region, it has a policy in place to request UASI resources such as the Neptune System (high-volume water supply system for major firefighting operations) if needed. In addition, a number of local firefighters are members of New Jersey Task Force One (NJTF1), an Urban Search and Rescue team. Those specially training firefighters are able to serve as part of a NJTF1 advance team.

Hazardous Materials incidents pose a special risk to communities. Lawrence Township utilizes hazardous material response teams from nearby Trenton, Hamilton, and West Windsor when needed.

A thorough review of the box alarm run cards found them to be comprehensive and well designed. Resources are assigned from Mercer County along with companies from contiguous counties and neighboring Bucks County, Pennsylvania. The majority of the run cards were last updated in 2014, a review of the run cards should be completed on an annual basis to assure that all available resources are updated.

> ***Recommendation 6:*** *The agency should review box alarm run cards annually to assure available resources for both mutual aid and automatic aid are current.*

Insurance Services Office Evaluation

The Insurance Services Office, Inc. (ISO) is a member of the Verisk Analytics Family of Companies. They are a leading source of information about property/casualty insurance risk. They provide statistical, actuarial, underwriting, and claims data; policy language; information about specific locations; fraud-identification tools; consulting services; and information for marketing, loss control, and premium audit.

ISO collects information useful in many aspects of insurance underwriting. That information includes evaluations of public fire protection, flood risk, and the adoption and enforcement of building codes in individual communities. Information on municipal services helps the communities with their efforts to manage and mitigate their risk.

Through the Public Protection Classification (PPC™) program, ISO evaluates municipal fire-protection efforts in communities throughout the United States. A community's investment in fire mitigation is a proven and reliable predictor of future fire losses. So, insurance companies use PPC information to help establish fair premiums for fire insurance — generally offering lower premiums in communities with better protection. Many communities use the PPC as a benchmark for measuring the effectiveness of their fire-protection services. The PPC program is also a tool that helps communities plan for, budget, and justify improvements.

The Suppression Rating Schedule (FSRS) is a manual containing the criteria ISO uses in reviewing the fire prevention and fire suppression capabilities of individual communities or fire protection areas. The schedule measures the major elements of a community’s fire protection system and develops a numerical grading called a Public Protection Classification (PPC™).

How the FSRS works

The FSRS lists a large number of items (facilities and practices) that a community should have to fight fires effectively. The schedule is performance based and assigns credit points for each item. Using the credit points and various formulas, ISO calculates a total score on a scale of 0 to 105.5.

The FSRS considers three main areas of a community’s fire suppression system: emergency communications, fire department (including operational considerations), and water supply. In addition, it includes a Community Risk Reduction section that recognizes community efforts to reduce losses through fire prevention, public fire safety education, and fire investigation.

Emergency communications

A maximum of 10 points of a community's overall score is based on how well the fire department receives and dispatches fire alarms. The field representatives evaluate:

- The emergency reporting system.
- The communications center, including the number of telecommunicators.
- Computer-aided dispatch (CAD) facilities.
- The dispatch circuits and how the center notifies firefighters about the location of the emergency.

Fire department

A maximum of 50 points of the overall score is based on the fire department. ISO reviews the distribution of fire companies throughout the area and checks that the fire department tests its pumps regularly and inventories each engine and ladder company's equipment according to NFPA 1901. ISO also reviews the fire company records to determine factors such as:

- type and extent of training provided to fire company personnel.
- number of people who participate in training.
- firefighter response to emergencies.
- maintenance and testing of the fire department's equipment.

Water supply

A maximum of 40 points of the overall score is based on the community's water supply. This part of the survey focuses on whether the community has sufficient water supply for fire suppression beyond daily maximum consumption. ISO surveys all components of the water supply system. The survey includes a review fire hydrant inspections and frequency of flow testing as well as a count of the number of fire hydrants that are no more than 1,000 feet from the representative locations.

Community risk reduction

The Community Risk Reduction section of the FSRS offers a maximum of 5.5 points, resulting in 105.5 total points available in the FSRS. The inclusion of this section for "extra points" allows recognition for those communities that employ effective fire prevention practices, without unduly affecting those who have not yet adopted such measures. The addition of Community Risk Reduction gives incentives to those communities who strive proactively to reduce fire severity through a structured program of fire prevention activities.

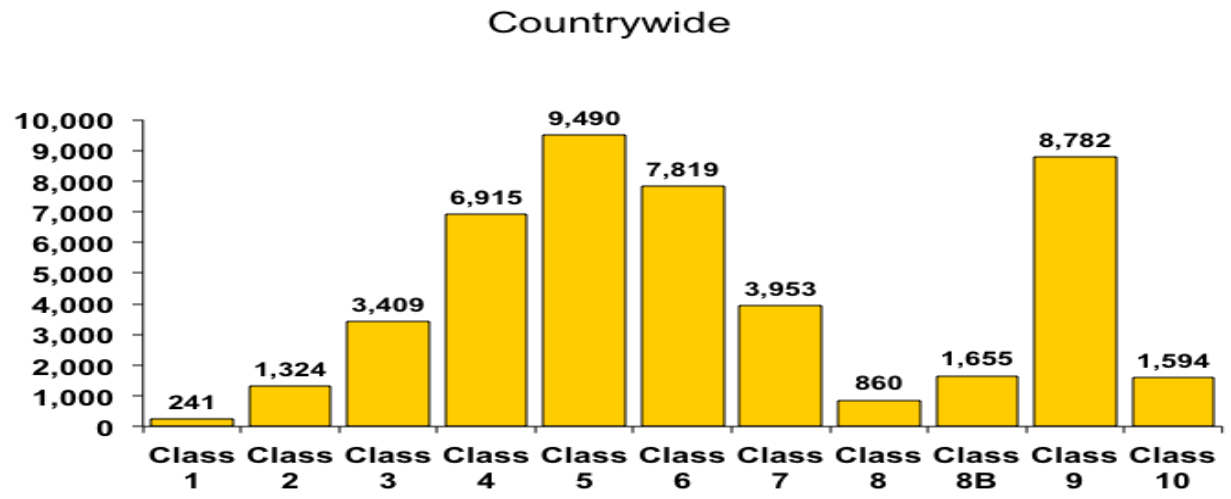
The areas of community risk reduction evaluated in this section include:

- fire prevention
- fire safety education
- fire investigation

ISO analyzes the data obtained during the survey process and assigns a Public Protection Classification from 1 to 10. Class 1 generally represents superior property fire protection, and Class 10 indicates that the area's fire suppression program doesn't meet ISO's minimum criteria. Insurance underwriters use the grade ratings in their consideration of risk from property damage caused by structural fires while setting commercial and residential fire insurance premiums for municipalities. Communities with lower PPC ratings will generally enjoy lower commercial and residential property insurance premiums. Notably, ISO is only concerned with the protection of structures from fire damage and does not consider other capabilities of the local fire department such as technical rescue, emergency medical services, hazardous materials response, disaster mitigation services, etc.

The fire suppression rating factors in Lawrence Township were last listed in a report created in March 2019, by representatives from ISO. The PPC number assigned to the community will depend on the community's score on a 100-point scale:

PPC	Points
1	90.00 or more
2	80.00 to 89.99
3	70.00 to 79.99
4	60.00 to 69.99
5	50.00 to 59.99
6	40.00 to 49.99
7	30.00 to 39.99
8	20.00 to 29.99
9	10.00 to 19.99
10	0.00 to 9.99



The above graph depicting the distribution of fire rating classifications for municipalities in the United States and New Jersey was provided by ISO in June 2017 and shows that the majority of municipalities in New Jersey fall into the Class 4 rating.

Our team reviewed the 2019 ISO Evaluation, the PPC score was 65.63, making the Township a Class 4/4X rated municipality. The Class 4/4X is a split classification, the 4X split was added due to the areas of Lawrence Township which are beyond 1,000 feet of a credible water supply such as a fire hydrant, suction point, or dry hydrant.

An in-depth review of the ISO, FSRS Scoring Features found some staffing, training and pre-fire planning programs which could be enhanced to improve future ISO evaluations:

- Implement structure fire related training to comply with NFPA 1001.
- Implement fire officer training to comply with NFPA 1021.
- Expand initial apparatus driver and operator training and annual refresher training to comply with NFPA 1002 and NFPA 1451.
- Enhance and document water supply inspection and flow testing based on American Water Works Association M-17.
- Enhance pre-fire planning inspection program.

Recommendation 7: *The agency should revise training programs to comply with NFPA 1001, NFPA 1002, NFPA 1021, and NFPA 1451.*

Recommendation 8: *The agency should develop a pre-fire planning inspection program of commercial, industrial, and other similar type buildings to be performed by on-duty members.*

Recommendation 9: *The agency should continue to evaluate the Volunteer Incentive Program and consider program expansion to work toward meeting NFPA 1720 staffing requirements for structure fires.*

Recommendation 10: *The agency should consider expanding automatic aid agreements with contiguous communities to work toward meeting NFPA 1720 staffing requirements for structure fires.*

Recommendation 11: *The agency should review their agreement with the utilities providing fire hydrant services and build in inspection and flow testing schedules that meet American Water Works Association operations manual M-17.*

Review of Standard Operating Procedures

A firefighter's role continues to evolve to meet the needs of the community and its customers. A few decades ago, the typical fire responses were limited to building fires, vehicle fires, brush fires, and auto extrications. Today's firefighters must be prepared to respond to a wide variety of calls for service. Most fire departments either provide emergency medical services or supplement the delivery of emergency medical services. They need to respond to swift water rescue, confined space and high angle rescue just to name a few.

At the same time, their former "bread and butter" responses have significantly changed and will continue to change. The building industry is always looking for less expensive

and quicker construction techniques using more lightweight and prefabricated components. Modern furnishings burn faster and hotter due to the increased use of plastics and petroleum products.

A critical guide for firefighters to follow in addition to their training and experience are current and comprehensive Standard Operating Guidelines (SOGs) and/or Standard Operating Procedures (SOP's). SOGs and SOPs reference mandates and best practices from agencies such as the New Jersey Division of Fire Safety (NJDFS), Public Employee Occupational Safety and Health (PEOSH), National Fire Protection Association (NFPA), and Local, County, State and Federal regulations.

The fire service is unique with its daily use of automatic and mutual aid. Very few fire departments in New Jersey have an adequate number of firefighters available to handle a complex fire incident. In fact, the majority of career and volunteer fire departments utilize some form of mutual aid for a residential structure fire. Fire department members are trained to follow their department's SOGs and/or SOPs while operating in their own response area and when they provide mutual aid.

A significant incident in Lawrence Township would require a response from all three fire companies, career staff, and mutual aid companies. Our team was in Lawrence Township for a site visit in February and had the opportunity to arrive with the first due volunteer company at a residential structure fire. The Lawrence Township volunteer fire companies were assisted by numerous mutual aid units.

The Lawrence Township Division of Fire consists of a Career Branch and a Volunteer Branch. The Volunteer Branch is made of by three volunteer fire companies (Slackwood Station 21, Lawrence Road Station 22, and Lawrenceville Station 23). The career staff and each volunteer fire company operate using their own separate SOGs. Our team reviewed the SOGs from the three volunteer companies and career branch.

The SOGs for the three volunteer fire companies and the career staff cover a number of the same topics, but contain a varying amount of detail. While there were no operational conflicts discovered while reviewing the SOGs, all Lawrence Township firefighters should operate from a single set of SOGs to enhance overall firefighter safety and consistency in operations.

Moreover, comprehensive SOGs address both administrative as well as operational procedures. This is critical to assure a consistent and expected level of performance whether on the fireground or within the fire station. Two examples from interviews with firefighters illustrate the need for standardizing procedures. The first is the need to have

a department-wide procedure for the Incident Command System (ICS). Assuring that all members operate within a standardized, singular command system is essential for overall firefighter safety. Currently, the level of compliance with the ICS system is reported as inconsistent. A second example illustrating the need for an administrative SOG relates to recall of off-duty career firefighters to respond to significant incidents. Currently it is reported that the process is handled on an ad hoc basis. A standardized approach assures a timely and consistent approach to recall of off-duty firefighters.

> ***Recommendation #12:*** *A comprehensive, single set of Standard Operating Guidelines should be developed and implemented for the Lawrence Township Fire Division.*

The following are recommended as a minimum for Lawrence Township Fire Division SOGs:

- Accident / Injury Reporting
- Administrative Notifications, including Fire Chief, Director of Public Safety and Elected Officials
- Air Operations / Medivac
- Alcohol and Substance Misuse
- Apparatus Driver / Operator Qualifications & Training
- Bloodborne Pathogens / Exposure Control Plan
- Carbon Monoxide Responses
- Emergency Evacuation / Mayday
- Fire Apparatus Driving Practices Including Apparatus Backing
- Firefighter Rehabilitation
- Fire Suppression Risk Management
- Highway Responses
- Incident Command System
- Internal Investigations
- Lock Out / Tag Out Procedures
- Motor Vehicle Fires
- Personnel Accountability System
- PPE Clothing Use & Maintenance
- Radio Communications
- Rapid Intervention Crew
- Recall of off-duty career firefighters
- Respiratory Protection Program including SCBA
- Social Media / Electronic Device Use

- Special Operations / Confined Space / Collapse Rescue / Water Rescue
- Thermal Imaging Camera Deployment
- Vehicle Extrication

Recommendation #13: *The SOGs should be organized using the SOG Manual template in Appendix A.*

Recommendation #14: *The SOGs should be developed using the SOG template in Appendix B.*

EMS

The delivery of Emergency Medical Services (EMS) is a critical component of the public safety network in any community. Residents demand a timely EMS response when they dial 9-1-1 requesting pre-hospital medical treatment and a rapid transport to a health care facility. In New Jersey, EMS services are provided in a variety of ways; the three levels of pre-hospital EMS provider certifications are discussed below.

Mobile Intensive Care Paramedics (MICP) are trained to provide Advanced Life Support (ALS) skills in the field. ALS skills include the ability to establish intravenous lines and deliver a variety of medications when indicated and perform intubations. MICP's are usually hospital based, but may be located in satellite quarters to reduce response times in their coverage area. The majority of ALS units in New Jersey are staffed by two MICPs and are non-transport.

Emergency Medical Technicians (EMTs) are trained to provide Basic Life Support (BLS) skills in the field. BLS skills include the use of Automated External Defibrillators (AEDs), splinting, bleeding control and airway management using Oropharyngeal Airways. BLS transport ambulances are staffed by a minimum of two EMTs. A BLS ambulance can be staffed by volunteer EMTs, municipal or county career EMT's, hospital based EMTs or private ambulance service EMTs.

First Responders (FRs) are trained to provide many Basic Life Support (BLS) skills in the field. FRs skills include the use of Automated External Defibrillators (AEDs), splinting, bleeding control and airway management using Oropharyngeal Airways. FR training requires significantly less hours than that of an EMT (48 hours versus approximately 190 hours). Many police and fire departments train their members as FRs to initiate pre-hospital medical care until relieved by an EMT or MICP.

Since 2010, Lawrence Township has utilized career EMTs to staff a single ambulance 24-hours a day. The agency bills for the services provided. A civilian EMS Chief oversees the daily operations of the nine career personnel. One ambulance is in service at any given time; however, the EMS Chief has the authority to place a second ambulance in service during a state of emergency.

In 2019, Lawrence Township EMS responded to 3,271 incidents and an additional 610 incidents were handled by mutual aid EMS agencies. This compared with 3,391 incidents and an additional 689 incidents handled by mutual aid in 2018.

A preliminary review of current EMS billing rates for 2018 and 2019 suggests that the lost revenue from transports handled by mutual aid units may not be enough to justify a second ambulance in service on a full-time basis. However, the additional revenue could offset the cost of at least some additional staffing. An in-depth examination should be made on the feasibility of expanding the role of the Lawrence Township Fire Division to include BLS transport as an option to improve overall BLS coverage in the Township.

In New Jersey, and more broadly throughout the nation, the fire service plays an integral role in the delivery of EMS typically in one or more levels:

- First Responder: Providing immediate, non-transport EMS care prior to and until relieved by a higher-level medical provider. This is currently the role provided by the Fire Division in Lawrence Township.
- Basic Life Support (BLS) transport: EMS transport with providers trained to the Emergency Medical Technician (EMT) certification level.
- Advanced Life Support (ALS): Providers are trained to the level of Mobile Intensive Care Paramedics (MICP). May be transport or may rely on a BLS agency for patient transport. In New Jersey, the MICP system is almost entirely hospital based.

Currently, the fire department responds to medical calls as first responders only in cases of specific emergencies or when the local EMS unit is not available. Having the fire department provide ambulance transportation will capture the now lost revenue from some 600+ incidents that are handled by mutual aid agencies each year. That revenue can be used to offset the cost of adding additional career firefighter/EMT members to both augment the firefighting force and provide EMS. This will result in a timelier EMS transport system and an increased fire suppression force for the residents, business, and visitors in Lawrence Township.

Consolidation of the existing municipal EMS system and the Fire Division would fully integrate EMS into the Fire Division. This approach will bolster the capabilities of each

agency under a single command structure. While a more detailed study of this recommendation is required, it is likely that some number of the existing EMS staff may be able to qualify as Firefighter/EMTs. Moreover, all existing and future career firefighters should be required to have EMT certification.

There is an opportunity to further expand EMS delivery to include the volunteer firefighters. While the Uniform Allowance Program (Volunteer Incentive Program) is still in its first year of operation, early participation was strong during the period of this study. The program could be expanded to include volunteer members in the delivery of EMS. As part of a Fire / EMS consolidation study, the role of volunteer fire division members should be included.

Recommendation #15: *The agency should carefully review the feasibility of an EMS/Career Firefighter consolidation as a method to enhance the delivery of EMS and Fire services.*

Recommendation #16: *The agency should require all current and future career firefighters to obtain and maintain an EMT certification to enhance the delivery of EMS.*

Recommendation #17: *The agency should explore the feasibility of adding additional career firefighters to enhance the delivery of EMS transport and Fire services.*

Recommendation #18: *The agency should explore the feasibility of including EMS – First Responder as part of the Uniform Allowance Program for members of the volunteer fire companies to enhance the delivery of EMS.*

Governing Document Review & Table of Organization

The study team reviewed several documents that govern the operations of the Fire Division. A brief description of each along with recommendations follows:

F.M.B.A. Agreement: This document is the collective bargaining agreement between the Lawrence Township career firefighters, represented by the Firemen's Mutual Benevolent Association Local # 96, and the Township of Lawrence. The agreement reviewed covered the period January 1, 2027 – December 31, 2019; and continues in force until a successor agreement is negotiated. While the document contains typical elements found in similar

agreements, it also includes the provision for a safety committee made up of members of the FMBA and the Township Manager. We believe that this is a positive and progressive element that should be retained.

Lawrence Road Fire Company Constitution and By-Laws: This document was last revised in July 2013. It identifies the Company motto as: *"Life, Value, First, Always"*. The by-laws include descriptions of the various categories of membership as well as the on-boarding process for recruits that requires that the application must be signed by two active members, include the submission of an application fee of $10- and first-year dues of $5. The applicant must be a resident and meet certain attendance requirements. Finally, the candidate must be approved by a 2/3 vote of the membership for admission to the Fire Company. A by-laws provision provides that a member may be dropped from the roles for non-payment of dues.

While it may be appropriate for admission to a purely social organization to require the recommendation of two active members, application fee, dues payment and the affirmative vote of a super-majority of the membership, these should not be requirements on-boarding of volunteer firefighters. Applicants should be accepted based on their ability to meet the requirements of the positions. Additionally, adding an application fee, however minimal, may be off-putting to candidate willing to volunteer their time for the benefit of the community.

Officers are elected to their positions annually with a six-year term limit imposed. There is no requirement to serve in subordinate ranks prior to advancing to a higher rank and the only identified training requirement is completion of IMS I.

Lawrenceville Fire Company Constitution and By-Laws: This document was last updated in August 2012 and includes an organizational mission statement. Membership is open to residents or employees in or adjacent to Lawrence Township. Opening the applicant pool to adjacent communities is a simple way to increase prospective members.

The membership application process is described in detail including that the membership board review prospective member's applications "based entirely on the technical ability, character and ability of the applicant to perform the duties of a firefighter or administrator." Additionally, the document states: "The Company shall be bound by the decision of the Board, no vote will be taken to determine whether applicant will be admitted to membership." The study team believes that this represents a fair process for appointment of volunteer firefighters and can serve for a model for the other fire companies.

Officers are selected annually for one-year terms with the exception of the fire chief who serves a five-year term that may be extended. All officer positions have requisite training and experience identified for each rank including that identified in NJAC N.J.A.C. 5:73-1.6. The study team finds that the selection and promotion of officers that includes certain levels of experience and training requirements is also a model that can be used by other fire companies.

Slackwood Fire Company Constitution and By-Laws: This document was not provided for review.

Fire Division Ordinance and Table of Organization: The municipal ordinance establishes the legal framework for the establishment and operation of local fire protection services. The existing ordinance was adopted in 2010 and is codified as *Chapter 20-11 Fire Division* in the Township of Lawrence municipal code. The Fire Division, referred to as the Division of Fire in the ordinance, is established within the Department of Public Safety. The document establishes three separate fire volunteer fire companies with the fire chief as the ranking member of each company. The absolute authority granted to each fire chief "where fire threatens life or damage or destruction of property within the Township" is also explicitly identified in the ordinance.

The position of Fire Administrator of the Division of Fire is appointed by the Public Safety Director to serve as the executive head of the Division. The ordinance provides that each fire chief shall consult and cooperate with the Division of Fire administrator for the "conduct, efficiency and management of each station and for the enforcement of the rules and regulations governing same." Further, the ordinance provides that "The personnel of the paid firefighters and such volunteer fire companies "Shall constitute the Division of Fire in Lawrence Township." Finally, the various administrative responsibilities of the Fire Administrator are detailed; however, section (8) providing **coordination** (emphasis added) of firefighting activities and training exercises between the three companies" could be interpreted as operational authority.

This ordinance is unusual in that it relies on a high level of cooperation from and among the three fire companies and the fire administrator. The result is a somewhat unorthodox organizational structure that is not fully acknowledged among the various members. For example, no members of the volunteer companies referred to themselves as members of the Lawrence Township Fire Division. Instead, they perhaps instinctively refer to their membership in the individual fire companies. We believe that this is a fundamental issue for Lawrence Township. As one member stated during interviews: "It's hard to promote a one department concept with three companies retaining their independence"; we agree.

Each of the fire companies has a rich history of dedicated service to Lawrence Township. However, to meet the needs of the community now and into the future, a single, consolidated firefighting force consisting of a single, combination volunteer and career organization is needed. The important legacy of each of the venerable fire companies can be preserved by retaining each as a social organization only.

The benefits of a single organization include standardized apparatus and equipment, training and procedures and importantly, a single command structure. Another interviewee stated: “We need someone where the buck stops.” Again, we agree and our recommendation is that the Fire Division be headed by a full-time career fire chief responsible for overall operations of the organization with a volunteer deputy chief assigned to each of the three stations.

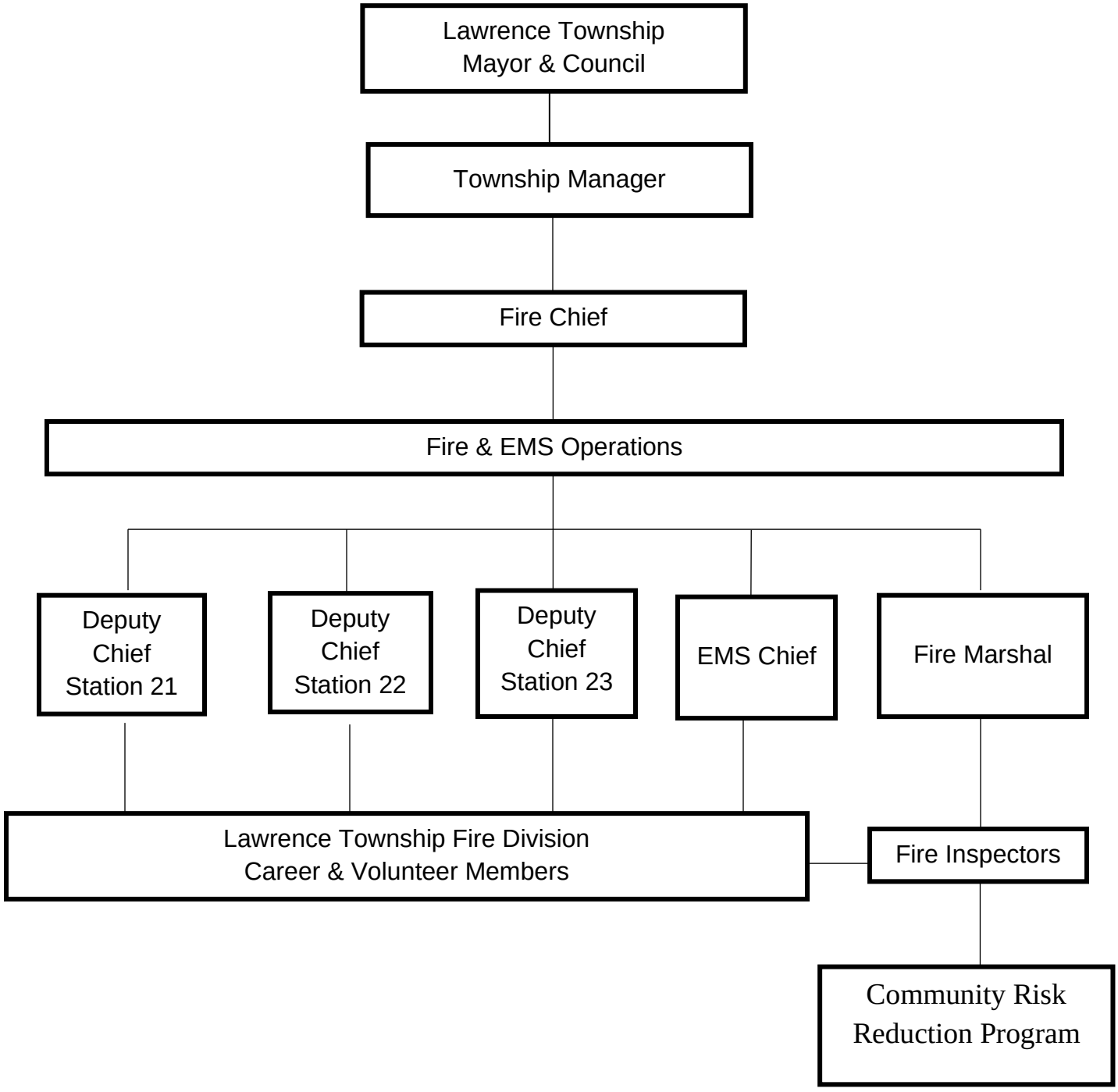
Fully integrating the organization will also provide the opportunity for greater volunteer and career firefighter interaction. Currently, for reasons not fully explained, volunteer members are not permitted to participate in responses with career members. This is both shortsighted and detrimental to overall effective operations.

Career members have much to gain from the knowledge and experiences of their volunteer counterparts. And of course, the opposite is also true, volunteers will benefit from the opportunity to work more closely with career members. Moreover, resource deployment improves when both volunteer and career members operate seamlessly in responses. As one member stated: “There is a ton of potential that we can harness.” We believe that the best way to harness that full potential is by creation of a single, combination fire agency.

A combination fire department is most successful when there is a culture of mutual respect based on equivalent standards for training and performance applied to both career and volunteer members. The benefits to the community are the rapid response provided by career staffing and the depth of resources provided by volunteers, all whom provide a predictably high level of performance.

A proposed table or organization is illustrated below. This structure includes volunteers, career members, EMS and is meant to show the close relationship fire prevention plays by aligning it with fire suppression operations. The contemporary fire agency should also provide in-service inspections, public fire safety education along with activities related to Community Risk Reduction which is a broad approach to identifying and mitigating risks to the community. To achieve that, we recommend that career firefighters achieve fire inspector certification and that the department develop a Community Risk Reduction Program.

Proposed Table of Organization
Lawrence Township Fire Division



***Recommendation* 19:** *Revise the municipal ordinance to create a single, combination volunteer and career fire division under the authority of a full-time, career fire chief.*

Training and Professional Development

The expectations of today's firefighters are to be prepared to respond to structure fires, vehicle fires, brush fires, auto extrications, emergency medical calls, swift water rescue, building collapse, confined space and high angle rescue just to name a few. A well thought out and structured training program is needed to prepare firefighters to safely respond to this wide variety of incidents.

Training programs should be developed and delivered to meet or exceed recommendations, mandates and best practices from agencies such as the New Jersey Division of Fire Safety (NJDFS), New Jersey Public Employee Occupational Safety and Health (PEOSH), National Fire Protection Association (NFPA), and Local, County, State and Federal regulations.

Comprehensive training and professional development programs are critical for firefighters and fire officers to safety and successfully complete their missions. The career firefighters and the three volunteer fire companies do not follow the same training protocols, instead, they outline minimum training requirements and to some degree periodic training requirements within their Standard Operating Guidelines (SOGs).

Station 20 – Career Division: The minimum certification requirements are included in the job description. The training section includes the annual/semi-annual mandatory training requirements. The section includes compliance with various NFPA Standards. Supervisory training should be included for officers and those who may function in that role on a temporary basis.

Station 21 – Slackwood Volunteer Fire Company: The SOG's include training requirements for Self-Contained Breathing Apparatus (SCBA), probationary members, junior firefighters, cadet firefighters, driver training, operation of Tower 21, apparatus qualification, and cascade system. The 2020 training schedule included many of the required refresher training programs, live burn sessions and multi-company drills.

Station 22 – Lawrence Road Fire Company: The SOG's include training requirements for incident response, incident command system, communications, driver qualifications, personal protective equipment, SCBA, power equipment, and personnel accountability. The training schedule included many of the required refresher training programs, live burn sessions and multi-company drills.

Station 23 – Lawrenceville Fire Company: The SOG's and Constitution and By-Laws included training requirements for driver training program, probationary firefighter manual,

emergency vehicle operations, personnel accountability, radio communications, Marine 23 response, vehicle extrication, power saw operations, AED usage. The training schedule included many of the required refresher training programs, live burn sessions and multi-company drills.

This fire company has developed a novel training program for delivery of annual, mandatory refreshers. Titled a “Training Extravaganza” it is an all-day session that takes on a circus theme as a way to generate excitement and interest for training that while required, is sometimes viewed as repetitive if not mundane. This program should be expanded to include all department members and consideration should be given to offering it on a semi-annual basis to provide members with two options for attendance.

Our team met with the career and volunteer members, company chiefs, and presidents both in-person and later, by conference call necessitated by the pandemic. Some members expressed a disconnect between the career staff and other volunteer companies. The perceived disconnect appears to be a real issue for some members. One remedy for this issue is to encourage additional training activities where all members of the department – career and volunteer alike – participate. The joint live-burn training and the and annual training “extravaganza” are a good start, but additional joint training sessions will only help.

In some instances, members have the opportunity to complete their annual training requirements by attending programs sponsored outside of Lawrence Township. During interviews, it was stated that only annual training completed within Lawrence Township Fire Division is recognized. We recommend that members that certify completion of the required annual training, whether provided locally or by another credible agency, be recognized as completing the required for training.

There was interest expressed by some members for a modest increase in the annual training budget to fund additional, outside training opportunities – we believe this increase is warranted. Implementing a program of joint training with the Lawrence Emergency Medical Services would be beneficial for the membership of both agencies.

An in-depth review of the training materials from the career division and the three volunteer companies found areas where training should be enhanced to improve firefighter safety and overall operations:

- Implement structure fire related training to comply with NFPA 1001
- Implement fire officer training to comply with NFPA 1021

- Expand initial apparatus driver and operator training and annual refresher training to comply with NFPA 1002 and NFPA 1451
- The agency should consider mandating fire training to be developed and delivered by NJDFS Level One or Level Two Fire Instructors.
- The agency should consider mandating leadership and supervisory training for all company and chief officers.
- The agency should encourage firefighters and officers to apply for training programs at the National Fire Academy.

In order to assure that a consistent and comprehensive training program is provided for all members of the Fire Division, we recommend that a single curriculum be developed for delivery across the entire organization.

Recommendation 20: *The agency should develop department-wide training programs to comply with NFPA 1001, NFPA 1002, NFPA 1021, and NFPA 1451, NJ PEOSHA and NJAC N.J.A.C. 5:73-1.6.*

Recommendation 21: *The agency should consider using only NJDFS-trained Level One or Level Two Fire Instructors for program development and delivery.*

Recommendation 22: *The agency should include leadership and supervisory training as a requirement for all company and chief officers.*

Present Recruitment & Retention Programs

Recruitment

To remain effective, organizations understand that recruitment of the most qualified personnel is a critical task. Once an individual joins the organization, a significant investment in resources is required to orient even the most experienced and seasoned employee into the new position. For this reason, it is critical to have a robust retention program in place to ensure the employee is engaged, satisfied and feels they are an important, contributing member of the team.

Recruitment and retention efforts are important in the fire service, especially in the volunteer fire service. According to an estimate by the National Fire Protection Association (NFPA) there were 1,160,450 local firefighters in the United States in 2015. Some 70% or 814,850 of the total were volunteer firefighters. Although the total number of firefighters has increased nationally in the past 30 years, the number of volunteer firefighters has not. According to a comprehensive report released in May 2007 by the

United States Fire Administration (USFA) titled "*Retention and Recruitment for the Volunteer Emergency Services Challenges and Solutions*" https://www.usfa.fema.gov/downloads/pdf/publications/fa-310.pdf the problem of recruitment and retention in the volunteer fire service is "still serious in several areas." [Note: The IAFC intends to publish an updated version of this document in August 2020.]

The International Association of Fire Chiefs (IAFC) has several resources to assist with recruitment that can be accessed at: https://www.iafc.org/topics-and-tools/volunteer/vws/chiefs-a-rit/topics/personnel/recruitment

The IAFC has published an excellent document: "*Managing the Business of the Fire Department"* https://www.iafc.org/topics-and-tools/resources/resource/vcos-white-ribbon-report that states:

> *The length of time that a new volunteer will remain with the department will be determined in the first six months of membership. Actions taken by the department to make new members welcome, help them adjust, provide mentorship and minimize their discomfort will dictate how long they will stay.*

Development of a formal mentoring program can provide specific guidance and support for new members during a crucial period.

> ***Recommendation 23:*** *A formalized mentoring program should be developed to support and guide new members of the fire department.*

Understanding why volunteers elect to terminate their membership can reveal insights into areas for improvement of both recruitment and retention programs. Maintaining a process to assure that exit interviews are completed for all volunteers that terminate membership is an excellent way to better understand what factors led to a decision to separate from the department.

> ***Recommendation 24:*** *Develop a formalized exit interview program to provide insights into improving the department's retention program.*

The most important recruiting resource that any volunteer fire department has is its people – people sell volunteer firefighting. A fire department's recruitment efforts occur in many different ways. The traditional recruitment methods include hanging recruitment banners on fire stations, advertising in local news media, attending community events and by word of mouth. Some residents see becoming a volunteer as an excellent way to give back to the community. There is no single best way to recruit candidates for membership. Rather,

successful agencies integrate the recruitment process across a broad range of activities as part of their on-going membership drive.

A number of factors have contributed to the decrease in volunteerism in the United States. One reason is more people are working two or more jobs to make ends meet leading to less time available to volunteer. Another factor involves two income families where both spouses are working. This often results in less free time, which can be complicated further by childcare demands. In some cases, the community demographics change over time. Increased housing costs and gentrification have diminished the number of affordable housing options in many places. As noted in the Community Characteristics section of this report, Lawrence continues to have a wide selection of housing stock. Nevertheless, the high housing costs are often a challenge that recruitment programs must overcome.

The demands placed on members of the fire service have also changed during the past 30 years. Fire Department members are required to attend more formal and less flexible training programs such as Firefighter One, Incident Command System, hazardous materials, and numerous other training programs. In addition, the installation of fire detection, carbon monoxide, and fire suppression systems have significantly increased the number of fire department responses. In many communities, the fire service is also playing a more active role in the delivery of emergency medical services. In the past, some volunteer members worked locally in small businesses and were permitted to respond to the occasional fire call, but as the economy tightened and fire calls increased, that may no longer be feasible. All of these dynamics have conspired to make recruiting volunteer firefighters more challenging. Nevertheless, there are several programs that can enhance recruitment efforts.

Youth Academy

Many law enforcement agencies in New Jersey have established a one-week youth academy program. Police officers instruct the children in marching, light physical fitness activities, crime scene investigation and police academy visits. In some communities such as Summit and West New York, New Jersey, the police youth academy participants spend a day at the local fire station while firefighters demonstrate vehicle rescue evolutions, hose stretches and aerial ladder operations. The youth academy programs have served as a precursor for teens to prepare to become auxiliary and or career police officers. Fire youth academies are common in many areas of the country but have yet to become popular in New Jersey. At least two of the Lawrence Township Fire Companies promote a “fire cadet” program for youths between the ages of 14 – 16. A youth academy could help introduce members to the cadet program as well as the junior firefighter corps for those between the ages of 16 – 18. It is reasonable to predict that fire department

long-term recruitment efforts would benefit from an investment in fire department youth academies. It should be noted, however, that conducting a youth academy involves a considerable commitment of time and effort on behalf of the department's members.

> ***Recommendation 25:*** *Consider establishing a one-week, youth fire academy program.*

Social Media Outreach

The ability to reach an enormous audience with the speed of "real-time" has been made possible through a variety of social media platforms, including: fire department websites, Facebook, Twitter, Instagram, YouTube, Snapchat and others. Social media represents the virtual face and voice of the organization.

According to a study by the Pew Research Center, *Social Media Use in 2019,* about 69% of US adults are Facebook users and some 73% access YouTube. Among 18 – 24-year old's, Instagram and Snapchat are particularly popular at 73% and 75% respectively. LinkedIn is used by nearly half of college graduates compared with only 10% of those who have not attended at least some college. As shown in the chart below, there is significant cross over or "reciprocity" among users of various social media. Clearly, using a variety of social media is an important way to both enhance and target the fire department's outreach efforts.

Use of different online platforms by demographic groups

% of U.S. adults who say they ever use the following online platforms or messaging apps

	YouTube	Facebook	Instagram	Pinterest	LinkedIn	Snapchat	Twitter	WhatsApp	Reddit
U.S. adults	73%	69%	37%	28%	27%	24%	22%	20%	11%
Men	78	63	31	15	29	24	24	21	15
Women	68	75	43	42	24	24	21	19	8
White	71	70	33	33	28	22	21	13	12
Black	77	70	40	27	24	28	24	24	4
Hispanic	78	69	51	22	16	29	25	42	14
Ages 18-29	91	79	67	34	28	62	38	23	22
18-24	90	76	75	38	17	73	44	20	21
25-29	93	84	57	28	44	47	31	28	23
30-49	87	79	47	35	37	25	26	31	14
50-64	70	68	23	27	24	9	17	16	6
65+	38	46	8	15	11	3	7	3	1
<$30,000	68	69	35	18	10	27	20	19	9
$30,000-$74,999	75	72	39	27	26	26	20	16	10
$75,000+	83	74	42	41	49	22	31	25	15
High school or less	64	61	33	19	9	22	13	18	6
Some college	79	75	37	32	26	29	24	14	14
College+	80	74	43	38	51	20	32	28	15
Urban	77	73	46	30	33	29	26	24	11
Suburban	74	69	35	30	30	20	22	19	13
Rural	64	66	21	26	10	20	13	10	8

Note: Respondents who did not give an answer are not shown. Whites and blacks include only non-Hispanics. Hispanics are of any race.
Source: Survey conducted Jan. 8-Feb. 7, 2019.

PEW RESEARCH CENTER

Each of the three fire companies serving Lawrence Township has their own website. A brief analysis of each follows:

Slackwood Fire Company**:** https://www.slackwoodfirecompany.org/
The site easy to navigate and there is a “Join” link on the home page that provides an outline of the various categories of membership. A very small icon on the screen labeled “brochure” reveals an excellent recruiting brochure that would have greater impact if located prominently on the home screen. The information on the website, however, is

dated with the most recent post from 2019. Keeping website information fresh is important to encourage viewers to visit the site frequently.

> ***Recommendation 26:*** *Update the Slackwood Fire Company website and feature the information from the existing recruitment brochure.*

Lawrenceville Fire Company**:** https://www.lawrencevillefire.org/
The website is fairly basic and does not appear to be updated for 2020. Included on the homepage is a pull-down menu "Contact Us" with the option "Recruitment." A description of the various categories of membership is provided along with a membership application (PDF version) and a background application (Word version). Membership is only open to Township residents. The membership application is multi-page and requires a $30 fee at time of submission. A potential candidate would likely view the application process as daunting and may never pursue membership beyond the website.

> ***Recommendation 27:*** *Update the Lawrenceville Fire Company website and feature recruitment information on the homepage.*

Lawrence Road Fire Company**:** http://lawrenceroadfire.com/
This website is currently inactive.

> ***Recommendation 28****: Reactivate and update Lawrence Road Fire Company website. Include recruitment information on the homepage.*

The Township of Lawrence**:** http://www.lawrencetwp.com/
The Township of Lawrence maintains a comprehensive website that includes extensive information about the community. The link to the fire companies' pages is found via a "Department" drop down menu. There is no recruitment information provided separately as part of this website.

> ***Recommendation 29****: Include firefighter recruitment information on the municipal website.*

Each fire company also maintains a Facebook page, which has great potential as a social media platform for sharing information about the department and a forum for recruiting new members.

The Lawrenceville Fire Company Facebook page has a variety of photographs and appears to be updated on a regular basis. Importantly, and consistent with the fire company's website presence, the Facebook page should include information to easily

direct those interested in learning more about membership in the department. The page has received 3,522 likes and has 3,624 followers.

The Fire Company also posts on Instagram which, like other social media platforms can be especially effective for outreach efforts. The content is current showing a variety of training, emergency response, and informational posts. Instagram is also an excellent platform for posting brief videos which can be particularly effective for recruitment.

The Lawrence Road Fire Company also has a Facebook presence with 1,602 likes and 1,627 followers. The information on the page, however, is not current and does not include any recruitment posts. The Fire Company also has an Instagram presence, however, the information there is not current.

Slackwood Fire Company posts to Facebook and enjoys 2,116 likes and 2,130 followers. There are no recent posts and no recruitment information on the site. The Fire Company maintains an Instagram presence; however, it appears not to be updated on a regular basis.

The Millennial Generation (those born between 1980 and 2000) now represent the largest generational cohort numbering more than 80-million. This is a tech-savvy group that is best reached digitally through social media outlets including websites, Facebook, Twitter, Snapchat, Instagram and YouTube. The International Association of Fire Chiefs (IAFC) has published an excellent resource for learning more about effective use of social media that is available online at:
https://www.iafc.org/docs/default-source/1VCOS/socialmediahandbookpart2facebook101.pdf?sfvrsn=2

According to the IAFC, there are “10 things you need to know to have a successful Facebook Page”:

1. Post consistently and daily
2. Always have up-to-date and accurate contact information
3. Have a call-to-action button
4. Have all upcoming events listed in the Events Section
5. Include photos and videos in your posts
6. Don’t Spam: Have a variety of posts, and don’t be afraid to share other pages relevant posts
7. Pay attention to your post statistics
8. Have a link to your Website from Facebook and vice-versa
9. Always follow up when a fan posts a question or messages you
10. Share a variety of information that is useful and valuable to your audience

Facebook is also an effective and inexpensive tool for directly marketing key audiences – something that is of special value for a fire department recruitment program. For example, specific demographics can be targeted for recruitment such as:

- Junior Members
- College Students
- Those that have identified an interest in the fire service
- Those that have identified an interest in volunteering

The National Volunteer Fire Council has developed a primer on using Facebook in this way through their video: "Facebook Marketing for Volunteer Fire/EMS Recruitment 101 https://www.youtube.com/watch?v=NK_VYe2-WWg

There are several resources available to assist volunteer fire departments with maximizing their social media and recruitment efforts. The National Volunteer Fire Council (NVFC) http://www.nvfc.org/firefighters/resources/ provides an array of recruitment information including customizable recruitment campaign material and guides to assist with planning events to engage prospective members. One specific program developed by the NFVC is the "Make Me a Firefighter" campaign that features website tools for recruitment efforts. Additional information is available at https://makemeafirefighter.org/

With the variety of social media outlets available, there are several opportunities to engage the community and leverage membership recruitment and retention efforts. While the various social media platforms are different – some intended to provide only brief information, others more in depth – all should be used as part of a comprehensive plan for member recruitment and retention. Because the various fire companies are already using a variety of social media, there is an opportunity to expand on its use.

Social media is powerful tool that allows sharing information some of which is critical, instantly. While there are very real benefits, it is equally important to establish appropriate guidelines for the use of social media. Guidelines are important to assure that content and use of various media conforms to the department's overall mission, vision and values and is not in violation of any laws or local regulations The International Association of Fire Chiefs has developed a "Model Fire and EMS Department Social Medial Policy", a copy of which is included in Appendix "C" of this report. The development of a social media policy should be done with the guidance of legal counsel.

> ***Recommendation 30*** *– The use of social media should be enhanced as part of the Lawrence Fire Division community outreach efforts and as a component of a comprehensive recruitment and retention program. A social media policy should be adopted to assure appropriate usage of social media by all members.*

Retention

The next challenge for the fire department is the retention of its volunteer members. Both the volunteer and the department make a considerable investment of time and resources to develop the firefighter for many years of service. The volunteer commits to the scheduled drills and initial training classes and the fire department responses. The department assumes the cost for pre-appointment testing, personal protective equipment, and the cost for the initial training.

"Retention and Recruitment for the Volunteer Emergency Services Challenges and Solutions" cited the following for the top reasons why members leave departments:

No time to volunteer	92.3%
Conflicts in the organization	47.8%
Organizational leadership created adverse atmosphere	46.7%
Too much training	45.6%
Attitude of existing personnel to newcomers	39.1%
Criticism received from officers/older members	38.0%
Lack of camaraderie	19.5%

- *Many respondents indicated more than one reason for leaving the organization*

While "*no time to volunteer"* is ranked as the greatest reason for members leaving an organization, five of the other six reasons listed are an obvious area of concern. Fire departments must treat their volunteer members well in order to retain them.

Recognition of member contributions and achievements is a meaningful component of volunteer retention. In their book, *Recruiting, Training, and Maintaining Volunteer Firefighters* Fire Chiefs Jack Snook and Dan Olsen identified a key characteristic of a volunteer department that is essential to retaining members. The organization must include a program to "provide its membership with reward and recognition*."*

Lawrence Township should formally recognize achievements of members through a comprehensive awards policy. For example, several fire departments formalize their awards policy to establish specific categories to recognize Merit as well as Honorable and Distinguished Service levels that can be presented on an annual basis. Special Awards such as Valor, Medal of Gallantry, or Final Alarm can be awarded only in response to special criteria and circumstance. Awards presented to members should be done publicly, ideally including members of the municipal governing body, and widely publicized.

There are also ample other opportunities for public recognition of member achievements. Some may include:

- Fire Academy graduation ceremonies for new recruits.
- Service anniversaries.
- Completion of specialized training and certification programs.
- Ceremonies recognizing advancement in rank.
- Recognition of the member or members achieving the highest percentage of responses.
- “Firefighter of the Year” and “Rookie of the Year”.
- Outstanding Effort Award in fire prevention or other specialized programs.

Recommendation 31: *The agency should take steps to ensure that active firefighting members are nominated for annual recognition. In addition to any recognition at a Fire Company level, the governing body should recognize the award recipients at a Municipal Council meeting.*

Other forms of member recognition can include special incentives such as a Volunteer Incentive Program, training, equipment, and insurance coverage. While these benefits on their own are unlikely to attract volunteers, they can, however, help with retention of existing members.

Currently, the Lawrence Township member benefits include:

- Training & Professional Development
- Uniforms
- Turnout Gear
- Volunteer Incentive Program – Uniform Allowance Program
- LOSAP
- Workers’ Compensation Insurance Coverage
- NJ State Firemen’s Association Relief and Death Benefit Coverage
- Per-Diem Career Firefighter Coverage

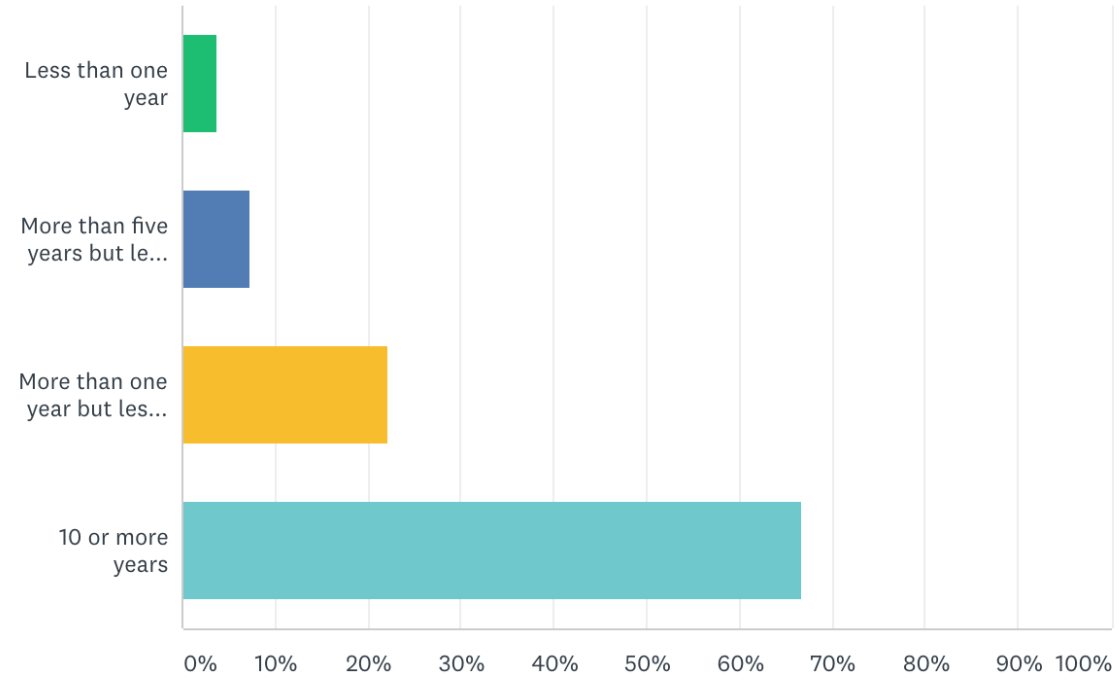
Member Recruitment & Retention Survey

Understanding how members of the fire department view the existing recruitment and retention programs is important in an overall assessment of the success of those programs. As part of this assessment, the study team developed a survey instrument that was then administered online and made available to all current members to answer anonymously. A total of 54 members completed all or a portion of the nine-question survey. Each question as well as a summary of their responses follows:

Question 1

How long have you been a member of one of the Lawrence Township Fire Companies?

Answered: 54 Skipped: 0



ANSWER CHOICES	RESPONSES	
Less than one year	3.70%	2
More than one year but less than five years	22.22%	12
More than five years but less than 10 years	7.41%	4
10 or more years	66.67%	36
TOTAL RESPONDENTS		**54**

A majority of the respondents, nearly 67%, have ten or more years of service suggesting that the responses to the survey reflect considerable experience.

Question 2

Please identify each of the things you find most satisfying about serving with your Fire Company.

Providing an overall satisfying experience is an important part of recruiting and retaining members in a volunteer fire department. The responses to this question are almost universally positive, revealing high levels of satisfaction.

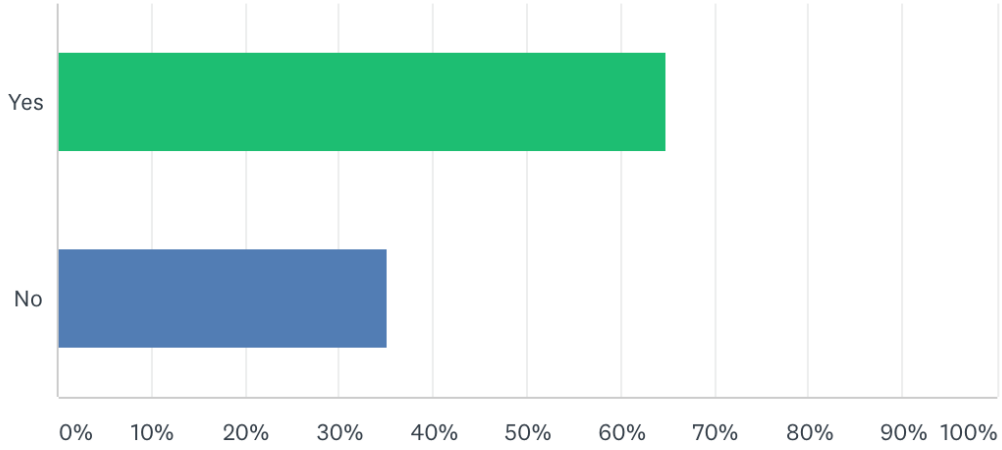
Summary of responses:

- The camaraderie, community involvement and responsibility.
- Self-satisfaction, social atmosphere with a purpose.
- The true sense of service and purpose in serving as a Firefighter.
- I think I will remain a Firefighter for my entire life!
- So many of my family members are involved and who I have served alongside.
- The greatest, is serving with my two children and son-in-law!
- The drive to strive harder to do my best and gain more knowledge are so inspirational to me!
- To see where we have come from, what we have today and trying to do our best for tomorrow are a great driving factor to make us succeed!
- Brotherhood, community service, thrill of the job.
- Training, dedication, give back to the community, leadership team, pride that volunteers take in their station, I also get a sense of accomplishment when we do a good job and look professional.
- The excitement, feeling of pride in a job well done.
- Friendships, mentorship, possible career, constantly learning something new, working with an amazing group of individuals, receiving gratitude from the people we serve.
- I enjoy helping people in their time of need and educating people when it comes to fire safety.
- The satisfaction of helping or citizens after a major fire or vehicle extrication.

Question 3

Would you recommend membership in one of the Lawrence Township Fire Companies to a friend or family member?

Answered: 54 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	64.81%	35
No	35.19%	19
TOTAL RESPONDENTS		**54**

The most effective recruitment method for volunteer fire departments is the recommendation to a potential candidate from an existing member. By a large percentage, almost 65% of the members indicated that they would recommend membership in the organization to a friend or family member. Despite that strength, some respondents indicated that they would not recommend membership. The reasons indicated for not making such a recommendation can be instructive to identify where improvements may be needed. Those responses are summarized below.

Summary of Comments:

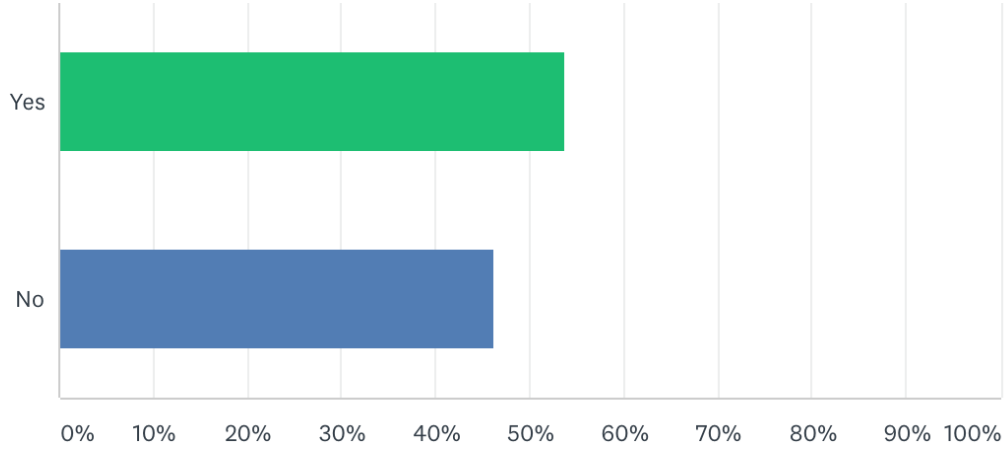
- Scheduling of mandatory training is not convenient.
- Perceptions of favoritism among officers.
- Perceived lack of appreciation from residents and local government officials.
- Delays in processing background investigation on prospective members.
- Need for more incentives for members.
- Difficult on-boarding process for prospective members.
- Need for an improved training program.

- Concern about consistency in leadership capabilities.
- Concern about cliques within the organization.

Question 4

Are there any requirements currently in place that if removed, would allow for recruitment of more members?

Answered: 54 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	53.70%	29
No	46.30%	25
TOTAL RESPONDENTS		**54**

Understanding whether any existing requirements serve as a hinderance to recruitment is an important step in making improvements to the overall recruitment process. More than half of the respondents (54%) indicated that there are at least some existing requirements that may hinder recruitment efforts. A summary of those requirements is shown below and should be reviewed for any that may be removed:

Summary of Responses:

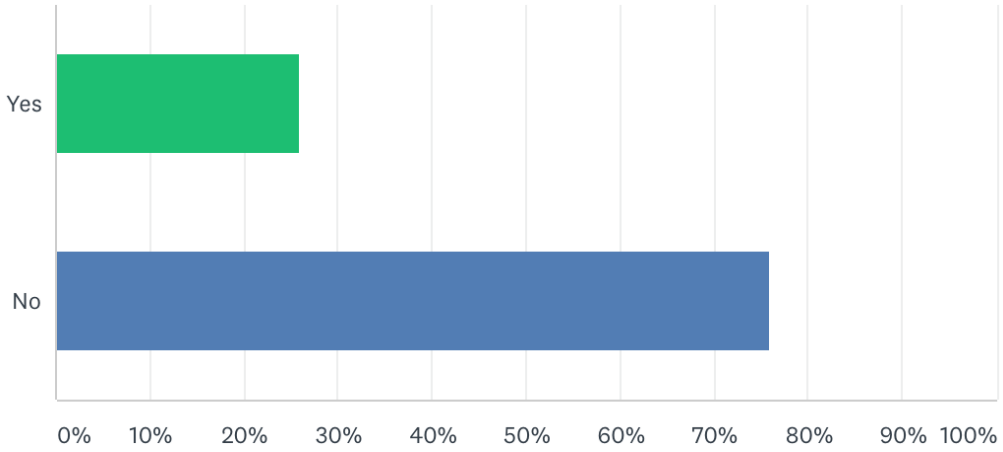
- Our incentive program excludes members for the first year. Certifications that are required may be excessive.
- Delay in processing background investigations.
- Need for more on-line training.

- Need for easier on-boarding process.
- Live or work within township borders.
- Out of pocket expenses for new members.
- Some training certifications may be excessive.
- Existing requirements not uniformly followed.
- LOSAP and VIP programs should not be exclusive.

Question 5

Are there any membership requirements that may hinder your continued participation in the Fire Company?

Answered: 54 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	25.93%	14
No	75.93%	41
TOTAL RESPONDENTS		**54**

A large majority of respondents (76%) indicated that there are no requirements that will prevent their continued participation in the fire company. However, some respondents did raise a concern about certain requirements. Their comments are summarized below:

Summary of Comments:

- Mandatory training schedule not always convenient. Consideration should be given for more on-line training opportunities.
- The requirements do need to be looked at from time to time to make sure they are relevant.
- Concern about minimum staffing requirements.

- Concern that training completed in other jurisdictions is not reciprocal.
- Condition of turnout gear.

Question 6

Please list specific steps that should be taken to recruit more members.

Existing members are often the best source for excellent suggestions to improve a recruiting effort. Their comments are summarized below:

Summary of Comments:

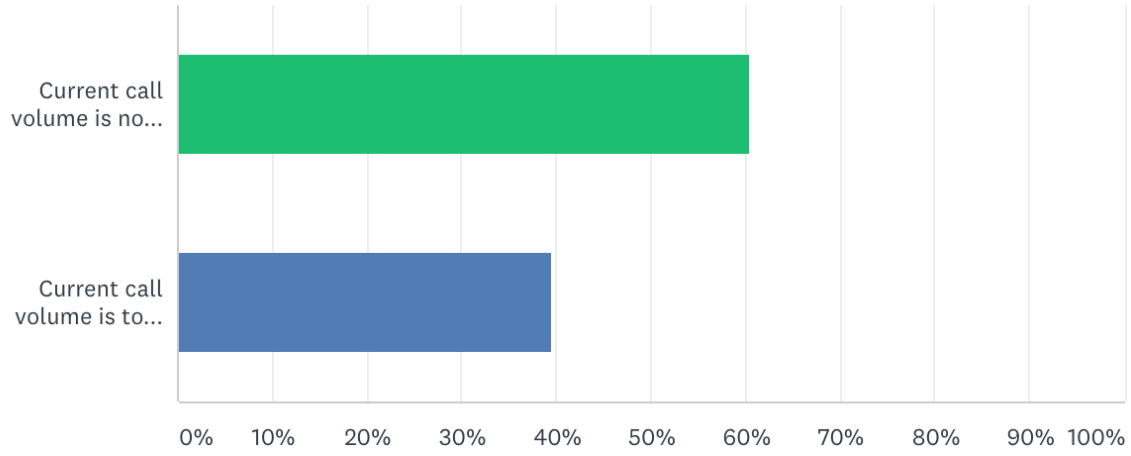
- Provide shirts for members.
- Consider a recruitment ad campaign.
- Increase funding for duty crew and pay per call programs.
- Provide food for members in station.
- Streamline background checks.
- Improved communication between administration and fire companies.
- Recruit within community and local colleges.
- Live in program, tax abatement, uniform allowance.
- Relief towards Property Taxes which other states such as Maryland have in place.
- Free memberships to programs offered by township such as Pool Membership, Safety Town, etc.
- Open friendly environment.
- The public needs to be better educated on how much volunteers are saving them in taxes.
- Possibly doing more to recruit non-firefighting members so we can "take some load off" our members (more admin members of the department) as the cumulative load of all tasks is a lot for anyone to volunteer.
- LOSAP should also be set at the state max. and you should not have to choose between VIP and LOSAP.
- Have all stations pay for the firefighter one for the probationary firefighters instead of having them pay beforehand.
- Be a world class professional organization and recruit from local companies.
- Recruit from High Schools/colleges in the local area and participate in career day programs.
- Create a recruiting officer position who attends community functions handing out flyers.
- Education and outreach programs inside schools, church groups and civic associations. Fire service command structure that provides policies and procedures for the one department, not four.

- Advertise about membership via social media and throughout the school system.
- Add a Duty Crew only membership, target high school and college students, Recruitment Officer, Recruitment Website (similar to Ewing Township), greater social media engagement.
- Physically have members walk neighborhoods to recruit, set up frequency in HS, recruitments can have a veteran member and new member to answer a large array of questions, physical presence in/ around community informal and formal gatherings.
- Institute a college tuition reimbursement program to entice younger members to join but also to retain them during and after their college years.
- Investigate the options for a college live in program.
- Hiring a company to do active recruiting and publicity for the fire company.
- Send out some type of fliers to the residents of the town.
- The township needs to hire more paid personnel.

Question 7

Based on the current volume of calls and your ability to participate as an active member, please select from the choices below

Answered: 53 Skipped: 1

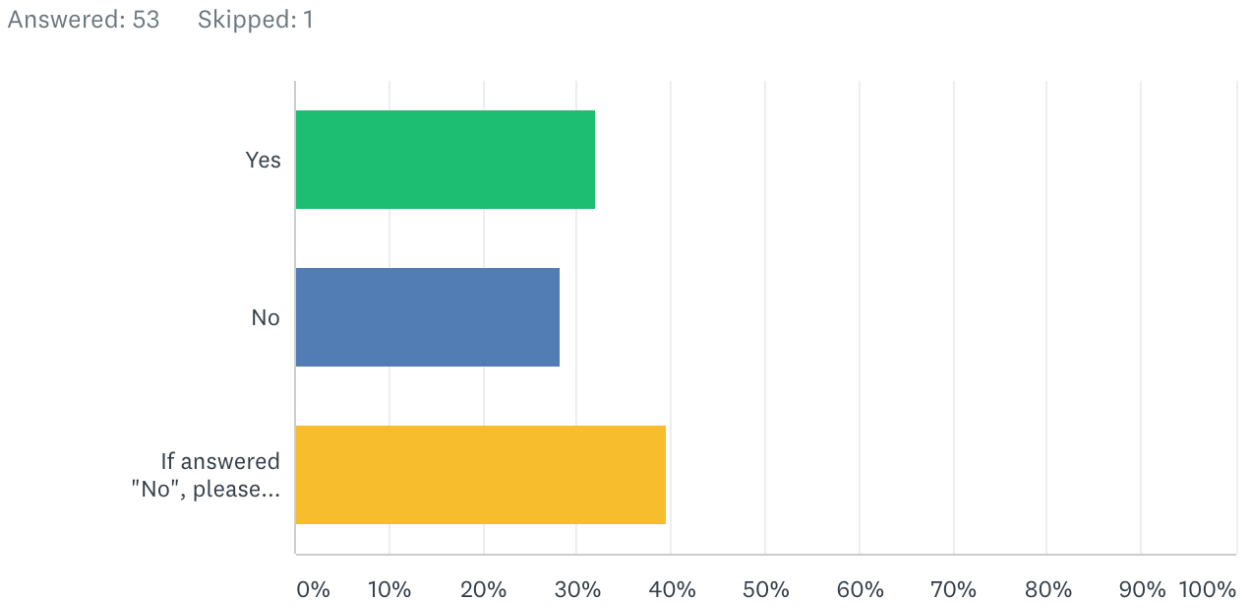


ANSWER CHOICES	RESPONSES	
Current call volume is not a problem for me	60.38%	32
Current call volume is too high	39.62%	21
TOTAL RESPONDENTS		**53**

Although most respondents (60%) indicated that the current call volume was not a burden, importantly, nearly 40% or 21 of the respondents did report that the volume of calls is an issue. This can lead to burnout and negatively impact member retention.

Question 8

Do you participate in the Duty Crew Program?



ANSWER CHOICES	RESPONSES	
Yes	32.08%	17
No	28.30%	15
If answered “No” please explain if there are any incentives that would encourage your participation	39.62%	21
TOTAL RESPONDENTS		**53**

The responses to this question were nearly evenly split – some 17 do participate in the Duty Crew program while 15 do not. Some of the reasons for not participating can be instructive when considering how the program may be revised to increase member participation.

Summary of Comments:

- There should be a solid plan established where each fire company rotates the burden from the other two fire companies doing designated duty nights, to reduce

burning out of one fire company. If all three firehouses rotated duty, then the members could rest while the company with the duty handles the simple routine calls that one unit can handle.

- Increase incentive.
- The Duty Crew needs to serve on the weeknights and the weekends. Lawrence, like many other volunteer fire companies is struggling when the Career Staff is not on duty. Making the facilities more inviting to members so that they want to participate in these types of programs.
- Include the pay-per-call incentive on top of the monetary Duty Crew incentive.
- Improve the facilities at the stations to include showers.

Question #9

What specific actions would you recommend to improve the effectiveness of overall fire protection for Lawrence Township?

Again, existing members are in a position to offer special insight on where and how fire protection may be improved. Their comments are summarized below:

Summary of Comments:

- Increase in training.
- Clear plan for the future of the fire companies.
- Improved equipment and vehicle maintenance.
- Improved communication between fire companies and local officials.
- Develop selection criteria for officers based on knowledge, skills and abilities.
- Develop a municipal program that encourages DPW, Construction and Fire Marshall's Office personnel to serve as members of the fire department to supplement daytime responses.
- Close one existing station and construct a new fire station adjacent to municipal building that will support a combination organization that includes live-in student housing.
- Hiring of additional paid staff that will allow a Pitman Schedule to be implemented. Paid staff would be on duty between the hours of 0600 and 1800 Hours and a compensated duty crew (Driver, Officer and (2) Firefighters) would be on duty between the hours of 1800 and 0600, seven days a week.
- Refurbish Tower 23 to extend its usefulness for another (15) years.
- Replace Telesquirt 23 with a Squad/Pumper.

- Increase stipend for Volunteer Incentive and Duty Crew programs.
- Consolidation and single operational structure for entire department.
- Establish a municipal fire chief responsible for overall operations and direction.
- Reduce the number of companies that are dispatched to assignments to relieve taxing the manpower that is currently available.
- Make sure fire department is inclusive and supports diversity.
- SOP & SOG's Governing the policies and procedures for one department.
- Training standards uniform throughout the department.
- Interactive social media with daily reminders that keep safety in the foreground but involving fun to keep interest up.
- More frequent school and senior visits/ training.
- Ban consumption of alcohol in fire stations.
- Making the entire Dept FF/EMT would allow for the incorporation of our existing career EMS Dept and would allow for cross staffing both units.
- One company staffed with an officer and 3 on four shifts would have an immediate impact on operations.
- Long term five-year planning should reflect an additional company being placed in service as an additional Engine company.
- Long term planning should include building a new facility on the existing site of the EMS station and station 22 and have all career staff and operations out of a state-of-the-art facility that is able to grow with the needs of the town. We will always need volunteers in Lawrence and 22 volunteers should be welcomed to join the remaining two firehouses.
- Form a single FD, while allowing individual Fire Company spirit.
- One Fire Chief for town with a volunteer deputy at each station.

The relatively high level of satisfaction expressed by the respondents in this survey creates an excellent foundation for recruiting future members. However, several comments by survey respondents provided insight into areas that may need to be addressed to achieve high levels of member retention. It is worth noting that the United States Fire Administration cited in its report; "Retention & Recruitment for the Volunteer Emergency Services: Challenges & Solutions", the following leading reasons for becoming a fire or EMS volunteer:

- Need for sense of belonging to something important.
- Desire for achievement.
- Increases responsibility.
- Desire to face a new challenge
- Recognition and reward.
- Desire for growth and development (possibly for other careers).

- Need to have fun.
- Enjoying one's environment.
- Helping the community.
- Sense of obligation to the community.
- Helping a fellow person in need.
- Possibly saving a life.
- To someday become a career firefighter.
- My neighbor is one.
- I had a fire once and want to help protect others from that sort of devastation.

The same report also listed the five leading reasons why members stop volunteering in fire department:

1. Internal conflicts.
2. Excessive time demands.
3. Feeling of a lack of support from department.
4. Perceived unfairness of disciplinary actions.
5. Perceived unfairness or inconsistencies in management.

The challenge for every volunteer fire department is to eliminate the reasons that discourage volunteers while at the same time, focusing on the positive reasons that motivate members of the organization.

The Township of Lawrence should take steps to:

- Use the affirming statements reflecting the high level of member satisfaction as part of a membership recruitment campaign.
- Encourage greater recognition Fire Department members by the Municipal governing body.
- Encourage adoption of training regulations that will permit a portion of Firefighter One training to be completed on-line.
- Develop a comprehensive social media program for recruitment efforts.
- Review the existing on-boarding process for new recruits with the goal of removing any unnecessary barriers and time constraints.
- Develop a single membership application that does not include an application fee.
- Selection of members should be based on the candidate's qualifications not of an affirmative vote of the membership.
- Consider expanding the geographical limits for membership to include those communities that border Lawrence Township.
- Develop a mentoring program to assist new members during their early years in the department.
- Review the existing communication process between the Municipality and the Fire Department and make revisions that may be needed to improve timeliness, clarity and transparency.

- Review the existing communication process within the Fire Department and make revisions that may be needed to improve timeliness, clarity and transparency.
- Explore the legality and practicality of providing any tax incentive for active members.

Recruitment and Retention Program Funding

Effective recruitment and retention programs require considerable time, effort and resources. In Lawrence, there is no single point of contact for recruitment, instead, each of the three fire companies approach recruitment in their own way. Some of the fire companies attend career day events at the local high school and at least one company attends the job fair at Rider University. Both of these are excellent recruitment efforts that should be encouraged and enhanced. One novel recruitment approach was described as "Give us your name and will give you a slice of pizza"— apparently it has yielded some positive results. However, providing greater organization and focus to the recruitment process on a Township wide basis is recommended.

With the exception of a requirement for a standardized background check, the application and on-boarding process is different in each fire company. The de-centralized approach currently used in Lawrence can lead to an uneven effort with varying outcomes. Moreover, there is a need to standardize the differing membership application processes among the three fire companies that all serve the same municipality.

A repeated concern was expressed regarding the length of time it takes to complete a background check of prospective members – up to six-months in some cases. It is likely that many, perhaps most, candidates will lose interest if the process stretches into several months. It is essential that a background investigation process be conducted as rapidly as possible.

In recognition of the importance and value of on-going volunteer recruitment and the existing time constraints on volunteers, the federal government makes grants available for recruitment and retention programs. Through the Department of Homeland Security's "Staffing for Adequate Fire and Emergency Response" (SAFER) grant program, funding through competitive grants can be available for a variety of programs. The following volunteer firefighter recruitment and retention efforts were funded by either the FEMA Assistance to Firefighters Grant (AFG), Staffing for Adequate Fire and Emergency Response (SAFER), or Fire Prevention and Safety (FPS) Grant programs:

- Establishing funding for a volunteer incentive program.
- Funding NFPA 1582 compliant firefighter physicals.

- Funding a volunteer recruitment and retention coordinator.
- Funding mileage reimbursements for volunteer firefighters to attend training programs.
- Establish tuition reimbursement programs.
- Provide disability or accidental death insurance for volunteer firefighters.
- Establish a fitness and wellness program for members.

** These projects were funded by the FEMA grants in recent years. The award guidance and priority projects are subject to change each year. Consult the current guidance documents before preparing or submitting a FEMA AFG, SAFER or FP&S grant request.*

Recommendation 32: *Create a single department-wide application, approval, and on-boarding process for firefighter candidates that includes a rapid background investigation.*

Recommendation 33: *The Fire Department should apply for a SAFER grant to fund various initiatives and programs related to enhancing the recruitment and retention efforts.*

Recommendation 34*: The Fire Department should consider engaging a recruiter to assist with the development and delivery of a volunteer firefighter recruitment program.*

Length of Service Award Program (LOSAP)

In an effort to encourage retention of volunteer emergency service members, the Emergency Services Volunteer Length of Service Award Program, more commonly referred to as LOSAP, was signed into law in New Jersey on January 18, 1998. The statute defines LOSAP as "a system established to provide tax-deferred income benefits to active volunteer members of an emergency service organization." An emergency service organization generally includes all forms of volunteer fire and first aid organizations. Lawrence Township has adopted the LOSAP program and provides an annual contribution of $500 to each participant.

As noted elsewhere in this report, the fire company members are currently eligible to receive a uniform allowance incentive that provides a form of annual *recognition* for the member's service. However, the study team believes that the LOSAP program is a more effective instrument to incentivize member *retention*.

The tax-deferred income benefits for emergency services volunteers are funded through contributions made solely by the municipality or fire district, on behalf of those volunteers who meet the criteria of a plan created by the local governing body. The contributions as

set by statute and may range from a low of $100 to a maximum of $1,150 annually. The funds are deposited into an account similar to a deferred compensation plan. These plans permit the governing body or the volunteer to direct the investment of funds in the different investment vehicles that may be permitted under the plan adopted by the governing body.

While the maximum amount is set by statute, if authorized by the enabling referendum it is subject to periodic increases that are tied to the consumer price index (N.J.S.A. 40A:14-185f). The Division of Local Government Services annually certifies the permitted maximum amount.

LOSAP provides both an incentive for joining and a tool for retention of members. This is because the statute provides that a volunteer in an emergency service organization is eligible to participate in a LOSAP immediately upon becoming an active volunteer member. In addition, the law also provides for a five-year vesting of the member's benefits.

LOSAP can be offered to municipal employees that also serve as volunteer firefighters, even when points are earned while on-duty. LOSAP can be given to members that receive LOSAP as volunteer firefighters in another community, provided they do not receive points in multiple communities for the same incident response. Any LOSAP and or stipend program must follow DCA and IRS regulations.

During interviews, several members commented that the municipality's annual contribution of $500 has remained unchanged since adoption of the program. The Township should consider increasing the annual contribution to assure that the LOSAP program remains an attractive retention tool.

> ***Recommendation 35:*** *Lawrence Township should evaluate the effectiveness of the LOSAP and the Volunteer Incentive Programs (VIP) to determine which program best meets the recruitment and retention needs of the Fire Department.*

Alternative Staffing Models

As an organization that relies primarily on volunteers, the Lawrence Fire Division has taken a number of steps to address staffing needs. Prior steps taken include:

- Consolidation of the career firefighters into the Lawrenceville Fire Company station.
- Uniform Allowance Program
- Duty Crew Program

To support the volunteer structure, a number of recommendations have been made to address recruitment and retention efforts. However, to ensure an effective firefighting response, alternative staffing models should be considered. The following are options – some of which have already been implemented:

- **Duty Crew Program**
  Adequate staffing is critical to the operation of all fire departments. The ability of a fire agency to supply a sufficient number of firefighters to quickly respond to an emergency and mitigate the situation has a direct bearing on the overall success or failure of the organization. Volunteer fire organizations face a more challenging task in providing adequate fire coverage. Due to the nature of the volunteer fire service in New Jersey, most volunteer fire departments in the region do not normally staff their fire stations but instead depend on the response of members from home or work to provide manpower for emergency calls. This has been the traditional response model for volunteer fire organizations in the United States for the past 300 years. Many volunteer fire departments in the state are reporting that they are experiencing a drop-in volunteer participation resulting in poor call attendance and longer response times to emergencies.

  Lawrence Township has implemented the Duty Crew Program that provides payment of $20 for an assignment of not less than 10 consecutive hours. Currently, the program operates certain nights, primarily from the Lawrenceville Fire Company station and initial reports are that it is successful. We recommend that the program be expanded to cover the periods when career staffing is not available.

  Recommendation 36: *To assure sufficient and immediate firefighting response, the duty crew program should be expanded to cover the periods when career staffing is not available.*

- **Uniform Allowance Program**
  This is a pay-per-call incentive program that was initiated in December 2019. Program eligibility requires certain experience level, training and certification. Participating members receive a $5 payment for each response with the fire apparatus and $2 payment for standby at the station in the event the apparatus has already responded. Payments of $5 for attendance and participation in regularly scheduled training drills, up to 12 times per year. As a new program, it should be monitored assure it is achieving the intended result as an incentive for member participation.

One concern raised by several members was the requirement to select either to participate in the Uniform Allowance Program or the LOSAP program. It should be noted that the NJ Department of Community Affairs permits a community to provide their members with LOSAP and a clothing allowance as long as it does not exceed their cap. Lawrence Township should consider permitting members to participate in both programs as a way to further incentivize serving as a volunteer firefighter.

- **Live-In Membership**
  As a way to address affordable housing issues and staffing shortages, some fire departments, particularly those in college communities offer in-station housing for selected members. Prince Georges County, Maryland offers this benefit for some of its member departments. In exchange for a rent-free living space, the member is required to provide a minimum number of duty shifts each week. With the presence of Rider University within Lawrence Township, steps should be taken to explore a student live-in program.

  Recommendation 37: *Explore the creation of a student live-in program that will work in partnership with Rider University.*

- **Per-Diem Program**
  This existing program is a cost-effective way to provide coverage for temporary vacancies in the career firefighting staff. Volunteer firefighters have opportunity to participate and receive compensation for the hours worked. This program is an added incentive for the volunteer members and an opportunity for them to more fully explore the option of employment as a career firefighter.

- **Combination Volunteer & Career Staffing**
  The National Fire Protection Association (NFPA) published the "United States Fire Department Profile 2017" that includes extensive information on America's fire service. The report shows that the national average of volunteer firefighters per 1,000 population is 6.71, down from a high of 8.05 in 1987. In Lawrence the ratio is 1.7 based on approximately 57 active members[2] and a population of 33,472. While there is no national standard for number of firefighters per 1,000 population, the reference can be useful for comparison. In addition, it is another indication of a downward trend in the number of volunteers nationally.

[2] Total active members based on ranges provided by officials from each fire company. The high end of each range was used to determine the total number of active volunteer members.

The NFPA also records the staffing models used by fire departments to protect communities of various sizes. The table on the following page illustrates the staffing models and populations served:

Population Protected	All Career	Mostly Career	Mostly Volunteer	All Volunteer	Total
25,000 – 49,999	52.2%	22.3%	19.2%	6.25	100%
10,000 - 24,999	21.6%	25.1%	35.9%	17.9%	100%
5,000 – 9,999	6.3%	8.6%	40.4%	44.8%	100%

The Township of Lawrence – at a population of 33,472 – is in the category where the majority of fire departments – 52.2% -- are all career, just 6.25%, the smallest number, are all volunteer. The category “mostly volunteer” means that at least 51% of the members are volunteers. Similarly, “mostly career” indicates a department where at least 51% of the members are career personnel. It is important to point out that there is no standard for establishing the staffing delivery method (career, volunteer or combination) based on population. However, as in the case of firefighters per 1,000 population, it offers a useful comparative model. There are many approaches available with regard to augmenting volunteer staffing several have been noted in this report.

Combination fire departments (volunteer and career members) have the advantage of being able to distribute and schedule a known number of firefighters in shifts to ensure fire personnel are available to respond to calls for service at all times of the day while being bolstered with greater staffing depth by volunteers. Critically, the role of volunteer member remains essential in a combination department to assure that adequate staffing is delivered in a cost-effective way.

In an excellent report on transitioning to combination fire departments published by the International Association of Fire Chiefs[3], it was noted that when a system develops problems, people often are aware of them before they are willing to take action. Identifying “Indicators for Change” as early warning signs in advance of problems, is an important way for decision makers to proactively address issues before they result in catastrophic events. Some of the Indicators for Change identified in the report were:

[3] Lighting the Path of Evolution – The Red Ribbon Report – Leading Transition in Volunteer & Combination Fire Departments. International Association of Fire Chiefs, Volunteer & Combination Officer Section. November 2005

- Community Growth. Emergency services are directly impacted by community growth—more people, more businesses, and more emergencies. The larger a community, the higher level of service people expect. In many areas people moving to "suburbs" assume wrongly that emergency services are delivered in the same way they are provided in the more established cities and towns. A history of community growth and projected increases in demand can help managers forecast and plan for changes in the delivery of emergency services. In some cases, population growth projections might even help a department determine to limit its services based on available staffing.

- Community Aging. A fire department's ability to recruit new members in part depends on the supply of new, younger people who can be tapped for service. A community's age profile can be an indicator of problems ahead. The age factor in your community is revealed by data showing who are moving in and moving out. If the younger people are moving away, or if schools are showing or expecting declining enrollment, the fire department may have a difficult time maintaining appropriate levels of service in the future.

- Missed Calls. When an emergency call goes unanswered the fire department has a serious problem, not just because life and property are at stake, but also because it is a failure highly visible to the public. Equally serious is a department's over-reliance on mutual aid for coverage and the lack of adequate personnel to handle subsequent calls when primary units are on an assignment.

- Extended Response Times. When units regularly fail to get out of the fire station in a timely manner because of inadequate staffing resources, the community is endangered and fire department managers have a reliability problem. Response time is a critical factor for any fire department determined to provide appropriate service to the public.

- Reduced Staffing. Units responding with fewer than the required number of people needed to perform that unit's functions pose a serious problem for the safety of citizens and the responders. This is another indicator of reduced service capability.

A review of the Lawrence Fire Division operations was made more challenging because of the lack of verifiable data. However, the anecdotal evidence identified that missed calls, overreliance on mutual aid and reduced staffing are significant issues.

There are several staffing models that can be considered for career staffing, including part-time, weekday or full-time, 24/7 coverage. We recommend that the existing career staffing initially be expanded to provide daytime coverage during holidays and weekends. The shift schedule times should be modified to provide seamless coverage with the expansion of the volunteer duty crew program. For example, if the duty crew program

provides coverage from 1800 hours to 0600 hours, the career staff coverage should be scheduled from 0600 hours to 1800 hours.

Based on the adoption of the proposed Fire Division reorganization, some costs associated with increased staffing levels may be offset through additional EMS revenues and potentially through cross training of at least some existing EMS personnel. Federal grant funding is available for the initial funding of career firefighting positions through the SAFER program.

In any event, response times and staffing performance must be closely monitored to identify any gaps in service delivery and to take the steps needed to provide the appropriate level of fire protection for the community.

> ***Recommendation 38:*** *Expand the career staffing to provide daytime coverage during holidays and weekends. Grant funding to support the cost of adding career staffing should be applied for through the Staffing for Adequate Fire and Emergency Response (SAFER) program.*

PLAN FORTHE IMPLEMENTATION OF OUR RECOMMENDATIONS

The most effective and efficient way to address the recommendations identified in this report is to develop a long-term strategic plan. The success of a transition to a combination fire department is dependent in large part on the level of planning that takes place in advance of the change. Development of a thorough communication and strategic plan will go a long way to guide the organization and its various stakeholders through the process.

Equally important is the need for strong leadership to shepherd the transition of the organization and to ultimately lead a combination department. Leadership requirements of the organization should be addressed during the strategic planning process.

As we have already completed a significant portion of the required research for such a plan, the next phase would be its development. Implementation of a two-year strategic plan will provide the necessary structure and process to take on the challenge of addressing our recommendations. Through the use of Specific, Measurable, Achievable, Relevant and Timely objectives, a clear and concise strategic plan can prioritize recommendations and provide for allocation of staff toward specific activities to successfully achieve the Municipality’s goals.

ASSESSMENT TEAM BIOGRAPHIES

Christopher J. Cotter Christopher Cotter served as the administrator for the City of Summit, NJ from 2005 - 2015. He was responsible for 200 full-time employees, a municipal budget of $45 million and an annual capital budget of $6 million. As city administrator he oversaw the reorganization of the police department and the department of community services and was responsible for instituting several shared services programs. He served as member of the leadership team that implemented a shared 9-1-1 communications center for fire, police and EMS in three municipalities spanning two counties.

During the period 2006 – 2015 he served as the emergency management coordinator for the City of Summit. During that period, he reorganized the office of emergency management and oversaw the renovation of the City's emergency operation center.

During the period 2003 – 2005 he served as the director of Summit's Department of Community Services, responsible for public works, engineering and code enforcement. While director of community services he oversaw the merging of recreation department and public works maintenance operations.

From 1976 – 2003 he served as a member of the Summit Fire Department; the last ten years as chief. During his tenure as chief, he was responsible for a major renovation of fire headquarters and implemented comprehensive standard operating procedures for the department and for the City's 9-1-1 communications center.

He holds undergraduate degrees in fire science and public administration and a graduate degree in administrative science from Fairleigh Dickson University where he has served as an adjunct faculty member.

A graduate of the Executive Fire Officer Program at the National Fire Academy, he is also a Chief Fire Officer designee from the Center for Public Safety Excellence. He serves as a subject matter expert for the New Jersey Civil Service Commission and is a member of the Fire Science Advisory Board of New Jersey City University. During the period 2014 – 2016, he served as a commissioner for the Center for Public Safety Excellence – Commission on Professional Credentialing. He currently serves as a contract instructor in fire service leadership and officer development training programs at the National Fire Academy, Emmitsburg, Maryland.

Joseph Houck - Chief Joseph Houck retired from the City of Summit, New Jersey Fire Department in 2015, having served since 1985. He was the Fire Director/ Chief for his last seven years before retirement. The combination fire department was staffed by 32 career firefighters, 15 volunteer firefighters, seven civilian dispatchers and an administrative assistant.

While Fire Director/Chief, the Summit Fire Department achieved International Fire Service Accreditation through the Center for Public Safety Excellence and improved its ISO rating to Class 2. In addition, the Department participated in a shared services study with the Millburn Fire Department and implemented a regional emergency services dispatch center with the Township of Millburn and Borough of New Providence.

Chief Houck served as a Deputy Municipal Emergency Management Coordinator in Summit between 2005 and 2015. He is a member of the International Association of Fire Chiefs' Emergency Management committee and was a member of the New Jersey Office of Homeland Security's Emergency Services Sector Working Group.

He received a Fire Science degree from Union County College and a bachelor of arts in Public Administration from Fairleigh Dickinson University. Chief Houck is a graduate of the Executive Fire Officer Program at the National Fire Academy. He completed the Certified Public Manager program and is a certified Fire Inspector/Fire Official, Fire Instructor, Level 2 and a New Jersey Certified Emergency Manager. He is currently working as a contractor in the Port Authority of NY & NJ Office of Emergency Management.

Richard DeGroot - Deputy Chief Rick DeGroot retired from the City of Summit NJ Fire Department after a 36-year career. The Summit Fire Department, a combination department staffed by 32 career members, 15 volunteer members and 7 support staff, serves an urban/suburban area 15 miles west of New York City in the NY/NJ Metro Area. The department handles an average of 2400 fire, rescue and first-responder EMS calls per year while serving a population of approximately 21,000 in the first due area. The agency promotes the use of and actively participates in several automatic aid and mutual aid agreements with surrounding fire agencies.

While serving as Accreditation Manager, DC DeGroot successfully guided the agency through the Commission on Fire Accreditation International (CFAI) agency accreditation process and the agency was awarded Accredited Agency status in August of 2011. Prior to his retirement, he successfully guided the department through the Insurance Services Office (ISO) review process achieving a Public Protection Classification rating of Class 2, one of only 18 communities in the state to have achieved this prestigious rating.

Deputy Chief DeGroot served as a senior fire instructor for more than a decade with the Sussex County Fire Academy and Sussex County Community College. He holds multiple Pro Board and IFSAC professional certifications including Fire Instructor Level 2, Fire Official, and Fire Officer Level 1 and is a graduate of the Certified Public Manager program at Fairleigh Dickinson University. He is currently employed by the Chester County PA Department of Emergency Services serving as a fire instructor at the Public Safety Training Academy with a concentration on developing and presenting fire officer development and leadership curriculum.

Frank E. Rodgers retired as the Deputy Superintendent of the New Jersey State Police in 2007 at the rank of Lt. Colonel after twenty-five years of service. While serving in the second highest ranking position in the largest police department in the State of New Jersey, he led the Investigations Branch which consisted of in excess of 900 detectives, analysts and scientists assigned to 57 different units with an annual budget of in excess of seventy-five (75) million dollars. A strong advocate of police professionalism, strategic planning and accountability, he initiated and directed a complete restructuring of the organization's investigative assets predicated on the principles of "Intelligence Led Policing". During his tenure as the Deputy Superintendent of Investigations, he directed the development of the "Practical Guide to Intelligence Led Policing" which was published by the Center for Policing and Terrorism at the Manhattan Institute and was adopted in February 2009 by the U.S. Department of Justice as a national model for conducting law enforcement operations.

Following his career with the State Police, he was appointed as the first Police Director of the newly formed New Jersey State Park Police in the Department of Environmental Protection. During his tenure in that position, he developed the force of 120 officers who are responsible for protecting the eighteen (18) million annual visitors to the state's fifty-one (51) parks into a CALEA (Commission on the Accreditation for Law Enforcement Agencies) nationally recognized and New Jersey State Association of Chiefs of Police Accredited agency.

In 2008, Rodgers formed his own private consulting company. He was immediately contracted to serve as Team Leader of the baseline capabilities assessment of the national network of seventy-two (72) intelligence fusion centers commissioned by the Office of the Director of National Intelligence. To date, the company has been contracted to develop policy and provide customized training services to in excess of two hundred enforcement agencies. In 2008, he was certified as an Assessor for the Commission on Accreditation for Law Enforcement Agencies (CALEA) and the New Jersey Law Enforcement Accreditation Program. In 2009, he was selected to serve as the President

of the Advisory Council of the New Jersey Public Safety Accreditation Coalition. He is recognized by the Superior Court of the State of New Jersey and the United States District Court as an expert in law enforcement procedures, policy, training and supervision. In 2011, he founded and now leads the Center for Public Safety & Security at Stockton University in New Jersey.

Rodgers holds a Master of Arts Degree in Education from Seton Hall University and is a graduate of the FBI National Academy. He is the co-author of a comprehensive published history of the New Jersey State Police and the Internal Affairs Investigations Manual for Investigators. He is also the recipient of the organization's highest award, the 1990 Trooper of the Year for his investigative work.

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- Standard Operating Guidelines
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- United States Census 2010
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Appendix A

Model Standard Operating Guideline Manual

Section 100 – MANAGEMENT AND GENERAL ADMINISTRATION
Section 200 – PREVENTION AND SPECIAL PROGRAMS
Section 300 – GENERAL EMERGENCY OPERATIONS
Section 400 – FIRE SUPPRESSION
Section 500 – EMERGENCY MEDICAL RESPONSE
Section 600 – HAZARDOUS MATERIALS RESPONSE
Section 700 – TECHNICAL RESCUE
Section 800 – DISASTER RESPONSE

Section 100 – MANAGEMENT AND GENERAL ADMINISTRATION:
Subsection 101- General Administration: Procedures related to activities that maintain and support the organization, including financial management, resource management, information processing, and maintenance and development of the organizational infrastructure.
Subsection 102 – Member Health and Assistance Programs: Procedures affecting member health, fitness, and performance, to include assessment, enhancement, and enforcement activities.
Subsection 103 - ORGANIZATIONAL PLANNING AND PREPAREDNESS: Procedures affecting organizational analysis and planning systems for management, administration, and emergency operations.
Section 200 – PREVENTION AND SPECIAL PROGRAMS
Subsection 201 - PUBLIC INFORMATION AND EDUCATION: Procedures to promote awareness of hazards, provide emergency information, encourage prevention, and foster good will and support in the community.
Subsection 202 - BUILDING INSPECTIONS AND CODE ENFORCEMENT: Procedures for evaluating and enforcing safety in buildings and commercial operations.
Subsection 203 - SPECIAL PROGRAMS
Section 300 – GENERAL EMERGENCY OPERATIONS
Subsection 301 – OPERATING EMERGENCY VEHICLES: Procedures for the safe and effective operation of emergency vehicles and special apparatus, including fire engines, ambulances, trucks, tankers and other fleet vehicles.
Subsection 302 - SAFETY AT EMERGENCY INCIDENTS: General procedures outlining safety considerations for agency personnel at various types of emergency incidents.
Subsection 303 – COMMUNICATIONS: General procedures governing communications during emergency incidents.
Subsection 304 - COMMAND AND CONTROL: General procedures directing use of the Incident Command/ Incident Management System and controlling inter-agency coordination.

Subsection 305 - SPECIAL OPERATIONS: Procedures for special emergency response operations and situations.

Subsection 306 - POST-INCIDENT OPERATIONS: Procedures for activities after incidents designed to assess and document actions, restore capabilities, address problems, and improve future results.

Section 400 - FIRE SUPPRESSION

Subsection 401 - FIRE SUPPRESSION RISK MANAGEMENT: Procedures designed to minimize risk to responders and implement aspects of the department's health and safety program at fire suppression incidents.

Subsection 402 - COMPANY OPERATIONS: Procedures covering activities related to specific company operations.

Subsection 403 - TACTICAL/STRATEGIC GUIDELINES: Procedures that guide fire and emergency personnel in remediation of fire suppression incidents.

Subsection 404 - SPECIAL FACILITIES/TARGET HAZARDS: Procedures for response to and operations at special structures or hazards.

Subsection 405 - SPECIAL FIRE SUPPRESSION OPERATIONS: Procedures covering special fire suppression response situations and operations.

Section 500 - EMERGENCY MEDICAL RESPONSE

Subsection 501 - EMERGENCY MEDICAL RESPONSE RISK MANAGEMENT: Procedures designed to minimize risk to responders and implement aspects of the department's health and safety program at emergency medical incidents.

Subsection 502 - PRE-HOSPITAL EMS FIRST RESPONSE: Procedures directed at the personnel delivering the first pre-hospital EMS resources to the incident scene.

Subsection 503 - PATIENT DISPOSITION AND TRANSPORTATION: Procedures directed at how the Fire/EMS Organization assures the safe and effective delivery of the patient to the appropriate facility.

Subsection 504 - MANAGEMENT OF EMS OPERATIONS: Procedures directed maintaining organizational readiness to provide emergency medical services in compliance with applicable laws, regulations, and standards.

Subsection 505 - SPECIAL EMS OPERATIONS: Procedures covering special emergency medical response situations and operations.

Section 600 - HAZARDOUS MATERIALS RESPONSE: Standard operating procedures for hazardous materials response are not just for hazardous materials response teams. Fire and EMS departments that respond, or are subject to respond, to any type of incident involving hazardous materials must develop written SOPs. This is a mandatory federal requirement under the Superfund Amendments and Reauthorization Act (SARA) passed in 1986. Both the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) promulgate regulations under SARA Title I, Section 126. OSHA 29 CFR § 1910.120, Hazardous Waste Operations and Emergency Response (commonly known as HAZWOPER) and EPA 40 CFR § 311 are essentially identical regulations applicable to all emergency responders within the United States regardless of their location or status (i.e., as a paid or volunteer employee). These regulations define five training levels for emergency responders based on the functions they may be expected to perform at a hazardous materials incident:

Subsection 601 - HAZARDOUS MATERIALS RESPONSE RISK MANAGEMENT: Procedures designed to minimize risk to responders and implement aspects of the department's health and safety program at hazardous materials incidents.

Subsection 602 - FIRST RESPONDER OPERATIONS: Procedures defining recommended work practices and response techniques for First Responder Operations personnel.

Subsection 603 - SPECIAL HAZMAT OPERATIONS: Procedures covering special hazardous materials response situations and operations.

Section 700 - TECHNICAL RESCUE - As defined here, Technical Rescue includes emergency response activities designed to locate endangered persons (and sometimes animals), extricate them from entanglements, and remove them from potentially hazardous conditions. Standard operating procedures for emergency patient treatment and transport, often considered part of rescue operations, are covered under Emergency Medical Response. Personnel who perform both roles would be subject to both sets of SOPs.

Subsection 701 - TECHNICAL RESCUE RISK MANAGEMENT: Procedures designed to minimize risk to responders and implement aspects of the department's health and safety program at technical rescue incidents.

Subsection 702 - RESCUE OPERATIONS: Procedures that direct activities related to search and rescue operations, including vehicle rescue, agricultural rescue, and extrication from industrial equipment.

Subsection 703 - SPECIAL RESCUE OPERATIONS: Procedures covering special rescue activities or programs.

Section 800 - DISASTER OPERATIONS: Modern society is increasingly vulnerable to man-made and natural hazards. As a result, fire departments over the past decade have become increasingly involved in disaster preparedness and response, also known as Emergency Management. Disaster operations involve responses to incidents that exceed the community's standard emergency service response capabilities. In addition to physically preparing department facilities, apparatus, and personnel for disasters, fire departments typically must undertake non-routine missions and tasks, often under dangerous and demanding conditions. Resource and coordination requirements change and expand. To fulfill their new responsibilities, fire departments must develop SOPs that clarify procedures before such emergencies occur. This section outlines some of those special requirements.

Subsection 801 - ORGANIZING FOR DISASTER SITUATIONS: Procedures that address modified organizational missions and personnel assignments during disaster operations.

Subsection 802 - DISASTER OPERATIONS RISK MANAGEMENT: Procedures designed to minimize risk to responders and implement aspects of the department's health and safety program in disaster operations.

Subsection 803 - DISASTER OPERATIONS: Procedures providing general guidance for disaster operations, including methods and actions that differ from routine alarm response and coordination with other local, state, and federal disaster agencies and community groups.

Subsection 804 - DISASTER-SPECIFIC GUIDELINES: Procedures to address disaster missions and response requirements that are specific to different types of hazards. The need to develop SOPs in this category will vary significantly from community to community depending on potential hazard vulnerability and local comprehensive emergency management plans. Potential hazards that might be addressed include the following:

Appendix B

LAWRENCE TOWNSHIP FIRE DIVISION **STANDARD OPERATINGGUIDELINE**			
VOLUME:	**CHAPTER:**	**# OF PAGES:**	
SUBJECT:			
BY THE ORDER OF:		**REFERENCES:**	
EFFECTIVE DATE:	**SUPERSEDES ORDER #:**		

PURPOSE:

POLICY:

PROCEDURES:

I. Title of Section

Appendix C

MODEL FIRE and EMS DEPARTMENT SOCIAL MEDIA POLICY
International Association of Fire Chiefs

I) PURPOSE

The fire and EMS department endorses the secure use of social media to enhance communication and information exchange; streamline processes; and foster productivity with its employees. This policy establishes this fire and EMS department's position on the use and management of social media and provides guidelines on the management, administration, and oversight. This policy is not meant to address one particular form of social media; rather social media in general in general terms, as technology will outpace our ability to discover emerging technology and create policies governing its use.

II) PHILOSOPHY

Social media provides a valuable means of assisting the fire and EMS department and its personnel in meeting community education, community information, fire prevention, and other related organizational and community objectives. This policy identifies possible uses that may be evaluated and utilized as deemed necessary by fire administrative and supervisory personnel. This department also recognizes the role that social media tools may play in the personal lives of department personnel. The personal use of social media can have an effect on fire departmental personnel in their official capacity as firefighters. This policy is a means to provide guidance of a precautionary nature as well as restrictions and prohibitions on the use of social media by department personnel.

II) DEFINITIONS

1) Blog: A self-published diary or commentary on a particular topic that may allow visitors to post responses, reactions, or comments.

2) Post: Content an individual shares on a social media site or the act of publishing content on a site.

3) Profile: Information that a user provides about himself or herself on a social networking site.

4) Social Media: A category of Internet-based resources that enable the user to generate content and encourage other user participation. This includes, but is not limited to, social networking sites: Facebook, Twitter, YouTube, Wikipedia, blogs, and other sites. (There are thousands of these types of sites and this is only a short list.)
5) Social Networks: Platforms where users can create profiles, share information, and socialize with others using a range of technologies.

6) Speech: Expression or communication of thoughts or opinions in spoken words, in writing, by expressive conduct, symbolism, photographs, videotape, or related forms of communication.

IV) POLICY

1. Strategic Policy

a) Determine strategy

i. Each social media page shall include an introductory statement that clearly specifies the purpose and scope of the agency's presence on the website.

ii. Social Media page(s) should link to the department's official website.

iii. Social media page(s) shall be designed for the target audience(s) such as the community, civic leadership, employees or potential recruits.

b) Procedures

i. All department social media sites or pages shall be approved by the Fire Chief or designee and shall be administered by the departmental information services section or designee.

ii. Social media pages shall clearly indicate they are maintained by the fire department and shall have the department logo and contact information prominently displayed.

iii. Social media content shall adhere to applicable laws, regulations, and policies, including all information technology and records management policies of the department.

iv. Social media content is subject to open public records laws. Relevant records retention schedules apply to social media content.

ii. Content must be managed, stored, and retrieved to comply with open records laws and e-discovery laws and policies.

v. Social media pages should state that the opinions expressed by visitors to the page(s) do not reflect the opinions of the department.

vi. Social media pages shall clearly indicate that posted comments will be monitored and that the department reserves the right to remove obscenities, off-topic comments, and personal attacks.

vii. Social media pages shall clearly indicate that any content posted or submitted for posting is subject to public disclosure.

2. Department-Sanctioned Use

a) Department personnel representing the department via social media outlets shall do the following:

i. The use of department computers by department personnel to access social media is prohibited without authorization.

ii. Conduct themselves at all times as representatives of the department and, accordingly, shall adhere to all department standards of conduct and observe conventionally accepted protocols and proper decorum.

iii. Identify themselves as a member of the department.

iv. Post, transmit, or otherwise disseminate confidential information, including photographs or videos, related to department training, activities, or work-related assignments without express written permission.

v. Do not conduct political activities or private business.

vi. Department personnel use of personally owned devices to manage the department's social media activities or in the course of official duties is prohibited without express written permission.

vii. Employees shall observe and abide by all copyright, trademark, and service mark restrictions in posting materials to electronic media.

3. Potential Uses

a) Social media is a valuable investigative tool when providing information about

i) Road closures,
ii) Special events,
iii) Weather emergencies, and
iv) Major ongoing events in the jurisdiction that affects the entire community.

b) Employment Opportunities - Persons seeking employment and volunteer positions use the Internet to search for opportunities.

c) Background Checks - For authorized members to conduct a background check on potential employees or volunteers

i) Candidates applying for employment with this department must sign a release document enabling an assigned employee to conduct a background check using any resource to include social media.

ii) This department has an obligation to include Internet-based content when conducting background investigations of job candidates.

iii) Searches should be conducted by Human Resources or with permission from the Fire Chief and only for the purposes or providing possible background material on an employee candidate.

1. Information pertaining to protected class status shall be filtered out prior to sharing any information found online with decision makers.

iv) Persons authorized to search Internet-based content should be deemed as holding a sensitive position.

v) Search methods shall not involve techniques that are a violation of existing law.

vi) Vetting techniques using social media as one of many resources to provide valid and up to date information shall be applied uniformly to all candidates.

vii) Every effort must be made to validate Internet-based information considered during the hiring process.

1. This shall not be the only mechanism to provide background information on a possible candidate.

4. Personal Use

a) Precautions and Prohibitions

i. Department personnel shall abide by the following when using social media.

1. Department personnel are free to express themselves as private citizens on social media sites to the degree that their speech does not impair or impede the performance of duties, impair discipline and harmony among coworkers, or negatively affect the public perception of the department.

2. As public employees, department personnel are cautioned that their speech either on or off duty, and in the course of their official duties that has a nexus to the employee's professional duties and responsibilities may not necessarily be protected speech under the First Amendment.

a. This may form the basis for discipline if deemed detrimental to the department.

b. Department personnel should assume that their speech and related activity on social media sites will reflect upon their position within the department and of this department.

3. Department personnel shall not post, transmit, or otherwise disseminate any information to which they have access as a result of their employment without written permission from the Fire Chief or designee.

4. Department personnel are cautioned not to do the following:

a. Display department logos, uniforms, or similar identifying items on personal web pages without prior written permission.

b. Post personal photographs or provide similar means of personal recognition that may cause you to be identified as a firefighter, fire officer or employee of this department without prior written permission.

b. When using social media, department personnel should be mindful that their speech becomes part of the World Wide Web.

5. Adherence to the department's code of conduct is required in the personal use of social media. In particular, department personnel are prohibited from the following:

a. Speech containing obscene or sexually explicit language, images, or acts and statements or other forms of speech that ridicule, malign, disparage, or otherwise express bias against any race, any religion, or any protected class of individuals.

c. Department personnel may not divulge information gained by reason of their authority; make any statements, speeches, appearances, and endorsements; or publish materials that could reasonably be considered to represent the views or positions of this department without express authorization.

d. Department personnel should be aware that they may be subject to civil litigation for publishing or posting false information that harms the reputation of another person,

group, or organization otherwise known as defamation to include:

i. Publishing or posting private facts and personal information about someone without their permission that has not been previously revealed to the public, is not of legitimate public concern, and would be offensive to a reasonable person;

ii. Using someone else's name, likeness, or other personal attributes without that person's permission

for an exploitative purpose; or

iii. Publishing the creative work of another, trademarks, or certain confidential business information without the permission of the owner.

6. Department personnel should be aware that privacy settings and social media sites are constantly in flux, and they should never assume that personal information posted on such sites is protected.

7. Department personnel should expect that any information created, transmitted, downloaded, exchanged, or discussed in a public online forum may be accessed by the department at any time without prior notice.

V) VIOLATIONS

1) Reporting violations.

a. Any employee becoming aware of or having knowledge of a posting or of any website or webpage in violation of the provision of this policy shall notify his or her supervisor immediately for follow-up action.

2) Violation of this social media policy may result in suspension or termination.