

CENTRAL WASHINGTON COUNTY FIRE REGIONALIZATION STUDY

JULY 2021

**Governor's Center for
Local Government Services**

Daniel P. Wauthier
Fire Peer Consultant

South Strabane Township
Chartiers Township
North Franklin Township
City of Washington



Table of Contents

Introduction	1
Background	2
Municipal Financial Support	2
Municipal Responsibilities for Fire Protection.....	3
Standards of Cover & Municipal Expectations	4
Recruitment and Retention	7
Regional Opportunities - Short Term.....	10
Regional Opportunities - Longer Term	13
Executive Summary.....	13
Bibliography	14

Introduction

The procedures used for this study included a review of fire service literature, national standards, ISO ratings, best management practices, and other manuals and information available via the Internet. An initial meeting to develop the scope of services was held with municipal officials and fire department personnel.

This study was conducted by Daniel P. Wauthier, Fire Chief of the Presto Volunteer Fire Department in the County of Allegheny, Pennsylvania.

I have been involved in the volunteer fire service for 45 years, serving as the Chief of my department for the last 33 years. My certifications include Firefighter 2, Fire Instructor 1, and Fire Officer 1.

In the private sector, I recently retired from a major tele-communications company after 36 years of service. The last 24 years of my career were in front line management, working in both union and non-union environments.

My consulting career with the Department of Community and Economic Development in the Governor's Center for Local Government Services began in March of 2019 and I have completed a number of studies in both the fire and emergency management fields.

The scope of studies for the assessment include:

The possibilities and options for regionalization of the fire service in the four municipalities.

The municipalities and volunteer fire companies were requested to provide specific information relating to this study. The consultant also conducted interviews with officials from the four fire departments involved. Therefore, it is assumed that the information provided to the consultant by all parties involved, is accurate and complete.

Background

The four municipalities involved are located in the central area of Washington County.

The Township of South Strabane has an estimated population of 9,430 living in an area 23.01 square miles. Included in the township is a very large and diverse commercial retail district, along with very busy highways such as Interstate 70 and Pennsylvania Route 19. The municipality is protected by a combination fire department with a paid chief, part time paid staff, and volunteers responding out of two stations. According to NFPA 1720, the Township is classed as a "rural" community.

The City of Washington has an estimated population of 13,532 living in an area of 2.95 square miles. The Washington Hospital and Washington & Jefferson College are two of the notable institutions located in the municipality. The City is protected by a career fire department responding out of two stations. NFPA 1720 rates the municipality as an "urban" community.

The Township of North Franklin has an estimated population of 4,546 living in an area of 7.46 square miles. The area contains the Washington Crown Center shopping mall, a portion of the Washington County airport, and stretches of Interstate 70. The Township is protected by a volunteer fire department operating out of three stations. According to NFPA 1720, the township is a "suburban" community.

The Township of Chartiers has an estimated population of 8,104 located in an area of 24.53 square miles. The Washington County Fairgrounds, Arden Landfill, and numerous natural gas processing facilities are located in the municipality. The area is protected by a volunteer fire department running out of one station. The community is rated as a "rural" district according to NFPA 1720.

As indicated, the municipalities in this region are very diverse in their size and make up. This is also true with the fire departments protecting them. Ranging from a full-time career department to ones that are 100% volunteer.

Municipal Financial Support

Financial considerations are crucial in providing any form of emergency service to the community.

The City of Washington maintains a fully funded career organization, based out of two fire stations, that provides for five to six personnel on duty, in station, to respond to incidents 24 hours a day, 365 days a year. The budget for the department is part of the city's annual process and is funded by taxpayer dollars.

The Township of South Strabane maintains a combination department operating from two fire stations. Part of the municipal funding is provided for a paid Fire Chief, who is responsible on a 24-hour basis and part-time firefighters that are on duty Monday through Friday from 7 AM to 11 PM. The hours that are not covered by the career staff are the responsibility of the firefighters of the volunteer fire department.

They are also funded through the township but hold their own fund raisers. The fire stations, equipment, and apparatus are owned by the volunteer fire department.

Chartiers Township and North Franklin Township are serviced by 100% volunteer fire departments. Both volunteer departments receive financial aid from their respective municipality, but each must fund raise to supplement this aid. The volunteer fire departments also own all of the stations (Chartiers has one and North Franklin has three), equipment, and apparatus.

Based on annual filings with the Department of Community and Economic Development for the year 2019, each municipality budgeted the following for fire protection:

Municipality	Total Budget	Allocated for Fire	% of Total Budget
City of Washington	\$33,894,508.00	\$1,831,018.00	5.4%
South Strabane Township	\$11,329,913.00	\$313,123.00	2.7%
Chartiers Township	\$8,656,799.00	\$294,995.00	2.9%
North Franklin Township	\$8,260,654.00	\$128,065.00	1.6%

Please note that these figures may not be direct support to the fire department, but may include insurance premiums, hydrant rental fees, relief association disbursements, etc.

Municipal Responsibilities for Fire Protection

It is widely accepted that the assurance of the provision of fire services is considered to be a local government responsibility. Local government is broadly interpreted to include municipalities, boroughs, cities, towns, villages, and townships.

In February of 2008, amending the Act of February 1, 1966 (1965 P.L.1656, No. 581) entitled "An Act concerning townships of the second class; and amending, revising, consolidation and changing the law related thereto, providing for the establishment of fire and emergency medical services" providing for specific powers of township relating to emergency services, the General Assembly of the Commonwealth enacted House Bill No. 1131 (Appendix B). In amending the Act, a clause was added that the township "shall be responsible for ensuring that fire and emergency medical services are provided within the township by the means and to the extent determined by the township, including the appropriate financial and administrative assistance for these services. The township shall consult the fire and emergency medical service providers to discuss the emergency service needs of the township. The township shall require any emergency services organization receiving township funds to provide to the township an annual itemized listing of all expenditures of these funds before the township may consider budgeting additional funding to the organization." Similar amendments were also made for first-class townships and boroughs, placing the responsibility for providing fire protection on the local governing body.

To attain the delivery of optimum fire services, it is essential that local government recognize and accept that responsibility to fulfill that obligation to provide appropriate guidance and direction to:

- Oversee the formation process of the organization of fire services.
- Ensure that the fire service organization reflects the public interest.
- Protect the service from undesirable external interference.
- Determine basic policies for providing services.
- Legally define the duties and responsibilities of service providers.

Identification of this authority and responsibility is also defined in Section 3-1 of NFPA 1201, *Standard for Delivering Fire and Emergency Services to the Public*, as:

“The government agency responsible for establishment and operation of the fire department shall adopt a formal statement (by laws, resolution, or statute) of purpose and policies for the fire department that includes the type and levels of services that are to be provided, the area to be served, and the delegation of authority to the fire chief and other officers to manage and operate the fire department.”

Standards of Cover & Municipal Expectations

Fire Department performance is generally graded against two benchmarks – Standards of Cover (NFPA 1710 or NFPA 1720) and the Insurance Services Office (ISO) Public Protection Classification Grading Schedule.

The basic premise behind Standard of Cover is that in order to control a building fire with minimal life and property loss, a fire department must be able to place an adequate amount of firefighters and equipment on the fire scene, ready to engage an emergency, within a given timeframe.

The resource needs and timeframe are driven by the growth process of a typical fire. Once ignition occurs, a fire does not grow in a linear fashion, it grows exponentially. Unchecked, it ultimately reaches a point known as “flashover.” At flashover, a fire changes from involvement of a limited area of the room to a full fire involvement of the space. This event occurs almost explosively. Flashover is a critical stage of fire growth for two reasons. First, a person in a flashover room cannot survive. Others within the building will likely be injured and possibly trapped. Second, the rate of combustion and fire spread increases dramatically, making victim location and rescue far more difficult. Fire control will require more hose lines and water flow.

Control of a pre-flashover fire can be safely accomplished with a minimum amount of resources. When a small crew of firefighters is able to begin fire control activities on a small appliance fire, a cooking accident, an overheated motor, a smoldering mattress or similar incident prior to flashover, the chance of injury or loss of life is low, and damage is usually minor.

On the other hand, once a flashover occurs, a large complement of firefighters will be needed for fire control and the likelihood of life loss or injury to both occupants and firefighters is high. Damage will be

substantial often resulting in total destruction of the building and contents. Clearly, a fire department's best opportunity to alter the course of the emergency, stop loss and minimize the negative consequences is to intervene as early as possible in the fire timeline.

Recognizing that a quickly arriving unit may be able to engage a fire before flashover, Standard of Cover for career fire departments establishes two-time benchmarks, one for the arrival of the first unit, and a second for arrival of the remaining resources. Therefore, in a suburban community, the standard expects an initial firefighting unit staffed with a minimum of four personnel and at least six additional personnel on a subsequent unit(s) to arrive within a total of 10 minutes from the time of dispatch. Setup time is a function of the magnitude of the fire upon arrival, the ease of deployment of hose lines, and the number of firefighters arriving and their level of skill and training. Thus, setup time will be longer for more serious incidents and in situations with personnel shortages.

Substantial research on resource needs for fire control has been conducted by the National Fire Protection Association (NFPA), the Commission on Fire Accreditation International (CFAI), and several large city fire departments. The data collected determined that at a fire in an occupied structure, a minimum of eight tasks must be simultaneously conducted to stop the loss of civilian lives, stop further property loss and keep the risk to firefighters at a reasonable level. The critical tasks on the initial alarm are for a response to a structural fire in a typical 2,000 ft², two-story, single-family occupancy without a basement and with no exposures (detached home) is as follows:

- (1) Establishment of incident command outside of the hazard area for the overall coordination and direction of the initial full alarm assignment. A minimum of one individual shall be dedicated to this task.
- (2) Establishment of an uninterrupted water supply of 400 gpm for 30 minutes. Supply line(s) shall be maintained by an operator who shall ensure uninterrupted water flow application.
- (3) Establishment of an effective water flow application rate of 300 gpm from two hand lines, each of which shall have a minimum of 100 gpm. Each attack and backup line shall be operated by a minimum of two individuals to effectively and safely maintain the line.
- (4) Provision of one support person for each attack and backup line deployed to provide hydrant hookup and to assist in line lays, utility control, and forcible entry.
- (5) A minimum of one victim search and rescue team shall be part of the initial full alarm assignment. Each search and rescue team shall consist of a minimum of two individuals.
- (6) A minimum of one ventilation team shall be part of the initial full alarm assignment. Each ventilation team shall consist of a minimum of two individuals.
- (7) If an aerial device is used in operations, one person shall function as an aerial operator who shall maintain primary control of the aerial device at all times.
- (8) Establishment of a Rapid Intervention Crew that shall consist of a minimum of two properly equipped and trained individuals.

Based on this scenario, the hazards presented of which are not unusual, as all communities respond to fire incidents in this type of structure on a regular basis, a minimum of 15 firefighters are needed to accomplish these tasks. Other occupancies and structures in the community that present greater hazards should be addressed by additional firefighter functions and additional responding personnel on the initial full alarm assignment.

The ability of adequate fire suppression forces to greatly influence the outcome of a structural fire is undeniable and predictable. Data generated by NFPA provide empirical data that rapid and aggressive interior attack can substantially reduce the human and property losses associated with structural fires.

Table 7 – Fire Extension in Residential Structures 1994 - 2004

Rate per 1000 Fires			
Extension	Civilian Deaths	Civilian Injuries	Dollar Loss per Fire
Confined to the room of origin	2.32	35.19	\$ 3,185
Beyond the room but confined to the floor of origin	19.68	96.86	\$22,720
Beyond the floor of origin	26.54	63.48	\$31,912
Note: Residential structures include dwellings, duplexes, manufactured homes (also called mobile homes), apartments, row houses, townhouses, hotels and motels, dormitories, and barracks.			

National Fire Protection Standard 1720, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments was developed in 2001 as the benchmark standard for defining levels of service, deployment capabilities, and staffing levels for substantially volunteer fire departments. The purpose of this standard is to specify the minimum criteria addressing the effectiveness and efficiency of the volunteer public fire suppression operations, emergency medical service, and special operations delivery in protecting the citizens of the jurisdiction. The requirements of the standard address functions and outcomes of fire department emergency service delivery, response capabilities, and resources. The standard also contains minimum requirements for managing resources and systems, such as health and safety, incident management, training, communications, and pre-incident planning.

The NFPA staffing and response benchmarks for volunteer departments are based on community demographics:

Table 8: NFPA 1720 Response Benchmarks for Volunteer Departments

Demand Zone	Demographics	Staffing and Response Time	Percentage
Urban	>1,000 people/mi. ²	15/9	90%
Suburban	500 – 1,000 people/mi. ²	10/10	80%
Rural	<500 people/mi. ²	6/14	80%

Combining the time benchmarks and resource needs, a fire department should be able to place at least one firefighting unit and a minimum of ten firefighters at a fire scene within ten minutes of dispatch in suburban areas and at least one firefighting unit and six firefighters at a fire within fourteen minutes of dispatch in rural areas. These response goals should be met at least 80% of the time. It must also be noted that these are the minimum acceptable standards for substantially volunteer departments and they are based on a fire in a relatively small detached dwelling.

Based on total population and population density, Chartiers Township and South Strabane Township would be defined as having “rural” areas. For “rural” areas, the department should be capable of assembling six (6) firefighters on the scene of a fire in a residential dwelling within 14 minutes of dispatch, eighty percent (80%) of the time.

In North Franklin Township, classified as a "suburban" community, this would be 10 firefighters on scene within 10 minutes dispatch, eighty percent (80%) of the time.

For the City of Washington, NFPA 1710 states the department should have 16 personnel on scene of a single-family dwelling fire with 8 minutes of dispatch.

Recruitment and Retention

Volunteer firefighters are a highly valued community resource. It is estimated that volunteers save communities over \$139.8 billion annually. The 2019 estimated value of a volunteer’s time was \$25.43 per hour. With the average volunteer firefighter spending 8 hours per week, volunteer firefighters contribute \$10,580.00 worth of their time annually to their community.

One of the issues identified, not only in Washington County, but also nationally, is declining volunteerism. Recruiting sufficient numbers of qualified members has become one of the greatest challenges facing volunteer fire departments today. At one time, most communities had little difficulty attracting members. Often, multiple generations of the same family would belong to departments for long terms. Frequently, many of the firefighters worked locally and on rotating shifts. In many cases

local businesses would allow firefighters to leave work to attend fires. This was sustainable because only a small number of fires would occur during work hours.

At the same time, demands on firefighter's time were minimal. Required training was nonexistent in many departments and minimally required in others. Fundraising was important, but the relative cost to run a fire department was low.

Today, this has all changed. Fire departments face tremendous competition for firefighter's time. Most families have two wage earners or have the main breadwinner working two or more jobs. More opportunities exist for children today than ever before. Just transporting children to and from their activities consumes a large amount of a parent's time. Today's workforce is far more transient than previous. As the region's industrial base has eroded, less people work in the communities where they live and smaller numbers work shifts. Additionally, fewer employers allow employees to leave work to fight fires.

These changes have taken place at a time when firefighter time demand has increased dramatically. Firefighter training has rightfully become mandatory in most departments. Minimum required training to become a basic firefighter now runs well over 200 hours. Standards now stipulate minimum levels of hazardous materials, right-to-know and incident management training. Safety was once given nothing more than lip service. Today it has become a cornerstone of fire department training programs. Concurrently, calls for service have increased substantially. Connected alarm systems, carbon monoxide detectors, vehicle accidents, medical assists and service calls are all responsible for creating a demand overload at a time when fire department membership is dwindling.

That said, there are still a substantial number of people who are willing to become volunteer firefighters if the right incentives are in place. To recruit members, a community needs to identify what they are offering potential members. Recruiting for the fire department should not be all that difficult because the service has a lot to offer - excitement, friendship, respect, the chance to save a life, and a host of other positives. But these things alone are often insufficient to attract new members. There also has to be flexibility that allows people to volunteer in a manner that fits their needs or meets their schedule. There must also be a marketing effort to reach out to potential candidates and illustrate the benefits of membership.

Initiatives that have worked for other fire departments include:

1. Implement a "Duty-shift Program". This initiative can often pay dividends by attracting individuals to volunteer who prefer to schedule blocks of time to serve rather than be subjected to being on call at all times. This is not unlike performing volunteer work for hospitals, nursing homes and schools. With this program, the fire department establishes minimum participation guidelines and minimum training requirements. Persons wishing to become a "Duty-shift Member" would agree to be at the fire station for a specified number of time blocks per month. In return, the volunteer would receive a small stipend, and be entitled to all the benefits of volunteer membership.

This program is definitely not for everyone and is a departure from the traditional volunteer fire department model. As such, it would not be rapidly accepted. That said, many departments in the suburban Washington, DC area have found great success by implementing a "Duty-shift Program". They have found that there is a segment of their population that is willing to volunteer, but is too busy with family, jobs and other obligations to participate on an on-call basis. An additional benefit to the "Duty-shift" program is additional credits given for personnel in the Insurance Services Office (ISO) Grading Schedule.

2. A successful firefighter recruiting campaign must create a community awareness of the fire department and its needs. To accomplish this, the department should be marketed via as many media sources as possible. Publish a fire department web site; send direct mailings; distribute flyers in the schools; create a speaker's bureau for community groups; consider lawn signs and billboards; produce an informational video to air on the local cable access channel. Most, if not all of these initiatives, can be accomplished with community talent at little or no cost.
3. Engage the community by conducting a "Citizen's Fire Academy". There are several benefits to such a program. Conducted similar to a major league baseball "fantasy camp", a Citizen's Fire Academy provides the opportunity for interested citizens to participate in a multi-faceted program of instruction of the activities of a fire department. Typically, there are eight to twelve sessions on topics ranging from fire operations to rescue operations, emergency management, CPR and AED usage, department history and operations, and fire prevention. Participants are able to take part in many activities within their physical abilities and safety.

The programs tend to be self-sustaining from favorable word of mouth and minimal advertising. Most people who participate are amazed at the depth and breadth of fire department activities and the dedication and commitment of the firefighters. They invariably become strong supporters of the fire department. They also share their experiences with friends and relatives which results in a great deal of good will in the community.

4. Develop incentives. Volunteer firefighters are not free, just less expensive than career firefighters. In an effort to compete for people's time, many departments have created a package of incentives and rewards. Some of the components that a total benefits package might include:
 - Tax incentives. Reduced property or earned income taxes or waived occupational privilege taxes are possibilities. Recently, Pennsylvania passed Act 172-2016, the Volunteer Firefighter Tax Credit legislation allowing communities to provide tax credits to volunteer firefighters
 - Free use of local recreation facilities.
 - Education/tuition assistance plans.
 - Individual and team recognition awards.
 - Length of service (LOSAP) remuneration plans.

- Retirement plans.
- Life and health insurance policies.
- Credit union memberships.
- Wellness programs.
- Training and fire conference attendance.
- Clothing and uniform provisions.
- Accident insurance.
- College tuition credits.

Regional Opportunities - Short Term

There are many advantages to the four fire departments cooperating on a regional level that do not involve complicated interactions.

1. Recruitment and Retention

As stated in the section above, some of these programs are on an individual municipal basis. But, some may be done on a regional basis to send out a cooperative message across the area and allowing all concerned to share in the costs, responsibilities, and hopefully, benefits.

Example:

The "Citizen's Fire Academy" can have sessions scheduled at the various fire department locations to expose residents to the emergency services in the area, possibly generating more interest.

2. Training

When asked about inter agency training, it was stated that little or no training between the four departments occurred on a regular basis. This is a very basic way for all departments involved to familiarize each other with personnel, equipment, and tactics.

Example:

Training in and adoption of the "Blue Card" methodology to incident command would bring a tremendous advantage to all involved by using common terminology on incident scenes.

3. Automatic / mutual aid incidents

Due to disparities in the Emergency Reporting system, the exact use of automatic and mutual aid between the four departments is not readily available. In speaking to officials of the departments, all four do not utilize each other on a regular basis. For regional purposes, all four departments should strive to work together in one form or another, both in emergency and non-emergency scenarios.

Example:

Chartiers VFD and North Franklin VFD have very little, if any, interaction in each other's district. Opportunities should be identified by the two departments as to where they can benefit from utilizing each other's resources.

4. Standard Operating Guidelines

The establishment of one set of agreed upon Standard Operating Guidelines will allow all departments to operate on the incident scene in a consistent manner and will eliminate confusion as to the task at hand. Several automatic/mutual aid departments in our area have established working guidelines to be used at all incidents.

Examples:

The SAFER group was formed by five fire departments in southwestern Butler County "to promote and increase the safety and abilities of all through unified operations, standardized training, and reality-based response coverage." This cooperative effort has been very successful for this area.

In southern Allegheny County, the Brentwood VFC, Mt. Oliver VFC, Baldwin VFC, and Option VFC have formed an alliance to train together on a continuing basis and utilize all departments for certain emergency scenarios.

5. Purchasing

Joint purchasing of equipment, from small items up to and including vehicles, usually brings a distinct advantage as far as pricing and functionality. The greater a quantity that is being requested drives more competition, thus lowering the potential cost. This lower cost may benefit the end purchaser by allowing them to upgrade to a higher model than the base offering.

Example:

The PA COSTARS program, along with the numerous Council of Government bidding programs, are proof that quantity purchasing works to everyone's advantage.

6. Standardization of equipment

Joint purchasing will allow the departments to purchase equipment at lower cost and also place the same exact equipment in everyone's hands. This standardization of equipment and how it is deployed will allow for greater interoperability between the departments and increase the efficiency and effectiveness of operations on an emergency scene.

Example:

If all departments utilized the same equipment and techniques, a firefighter from any of the involved departments would be able to utilize any equipment off of any apparatus at an emergency scene and be proficient with its' operation. The packing and deployment of pre-connects, along with the use of solid bore or combination nozzles on those lines, is one of the simplest methods of interoperability between departments.

7. Duty Shift Program

A coordinated duty shift program would allow the scheduling of personnel during potential "low staffing hours" as identified by the officials of the volunteer fire departments. By creating a pool of firefighters in station during these times and utilizing each other's capabilities, a guaranteed crew of qualified individuals would be available.

This is also an avenue, if allowed under the union contract, for the City of Washington to supplement, not replace, their existing scheduled shifts with qualified volunteers.

Examples:

The Bower Hill VFD and Glendale HC#1 in Scott Township, Allegheny County, have a cooperative duty shift program scheduling two firefighters at each station, Monday through Friday, 0800 to 1600 hours. For all incidents in their districts, both departments are dispatched simultaneously, affording them four firefighters responding in a timely manner.

The Mt. Lebanon FD utilizes a duty shift program for their volunteers. Qualified volunteers sign up for a shift in the station when he or she is available to do so. They respond with the career staff to all incidents during their shift.

In all of these examples, the duty shift firefighters are financially compensated for their time on shift.

8. Grants

There are a number of existing grant opportunities available for fire departments to apply for. Most, if not all, of the governmental programs strongly encourage regional applications. This allows the funding to be utilized not only in a cost-effective manner, but to reach a greater percentage of the population.

Also, all of these grants are of a competitive nature, so regional applications are given priority status in most cases. The four departments, working together, make an effective regional grant candidate.

Examples:

Assistance to Firefighter's Grants, Federal Emergency Management Agency (FEMA), is a nationwide grant program to specifically address the needs of fire departments with a priority on safety, replacing outdated equipment, and supporting the health of the firefighter.

Staffing for Adequate Staffing and Response, SAFER Grant, also a FEMA grant program targets staffing levels by furnishing funds to pay for additional staffing or rehiring laid off staff. It also supports the volunteer service by offering monies for recruitment campaigns, costs associated with new firefighters, and programs to retain existing firefighters.

Regional Opportunities - Longer Term

Opportunities for further regional cooperation are plentiful. But these opportunities will involve considerable financial investment by the municipalities. The primary goal is to provide prompt emergency response 24 hours a day, 365 days a year. The volunteer fire departments involved in this study cannot be expected to "foot the bill."

The City of Washington already has this model in place but guaranteed local outside resources would benefit them greatly.

South Strabane Township has partially achieved this goal, but nights and weekends are still a concern. Every effort must be made, without forgetting the existing volunteer's contributions, to establish a 24/7 presence in the fire stations.

In both Chartiers Township and North Franklin Townships, the current volunteer staff must be supplemented with station staffing on a regular basis during low volunteer turn out hours. This can be accomplished by the hiring of qualified firefighters by the municipality or by contracting with an outside agency to provide in station coverage.

Once this coverage benchmark is achieved, then the discussion can be turned toward a "regional fire district" concept where station location, equipment needs, and staffing are directed at serving all four communities, not the individual entities.

Executive Summary

Regionalization in the fire service is a subject that must continue to be investigated. The cost of equipment, volunteer personnel shortages, ever increasing training requirements, and liability issues are just a few of the concerns driving this. Serving our populace, our customers, should be the main focus of both fire department officials, as well as municipal officials.

This study was a challenge due to the diversity in the makeup of the fire departments involved; from 100% career to 100% volunteer with a combination department in between. The contributions of the volunteers must be recognized, as well as the dedication of the career staff, in addition to the pride that both have in serving their community.

The concept of regionalization can work in this area, but it will not be a quick, painless, or inexpensive endeavor. Each department must start working with each other, as suggested above, in an effort to start this process. The relationships between the municipality and fire department must become stronger with the ultimate goal of serving their public as the guiding rule.

Bibliography

Federal Emergency Management Agency (August 2001). *Fires in the United States, 1989 – 1998*. (12th Ed.). Washington, DC: Federal Emergency Management Agency.

General Assembly of Pennsylvania (2008). House Bill No. 1133. Harrisburg, PA: General Assembly of Pennsylvania.

International Association of Fire Chief, Metro Chief's Division (2009). *Fire Service Deployment: Assessing Community Vulnerability*. Quincy, MA. NFPA.

International City/County Managers Association (2002). *Managing fire and rescue services*. Washington. D.C.: International City/County Managers Association.

National Fire Protection Association (2008). *Fire protection handbook* (20th Ed.). Quincy, MA: National Fire Protection Association.

National Fire Protection Association (2015). *NFPA 1201, Standard for providing fire protection to the public*. Quincy, MA: National Fire Protection Association.

National Fire Protection Association (2014). *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*. Quincy, MA: National Fire Protection Association.

Pennsylvania Department of Community and Economic Development, Governor's Center for Local Government Services, Municipal Statistics, Municipal Annual Financial Reports, munstats.pa.gov, accessed May 3, 2021.

United States Census Bureau, www.census.gov, accessed May 3, 2021.