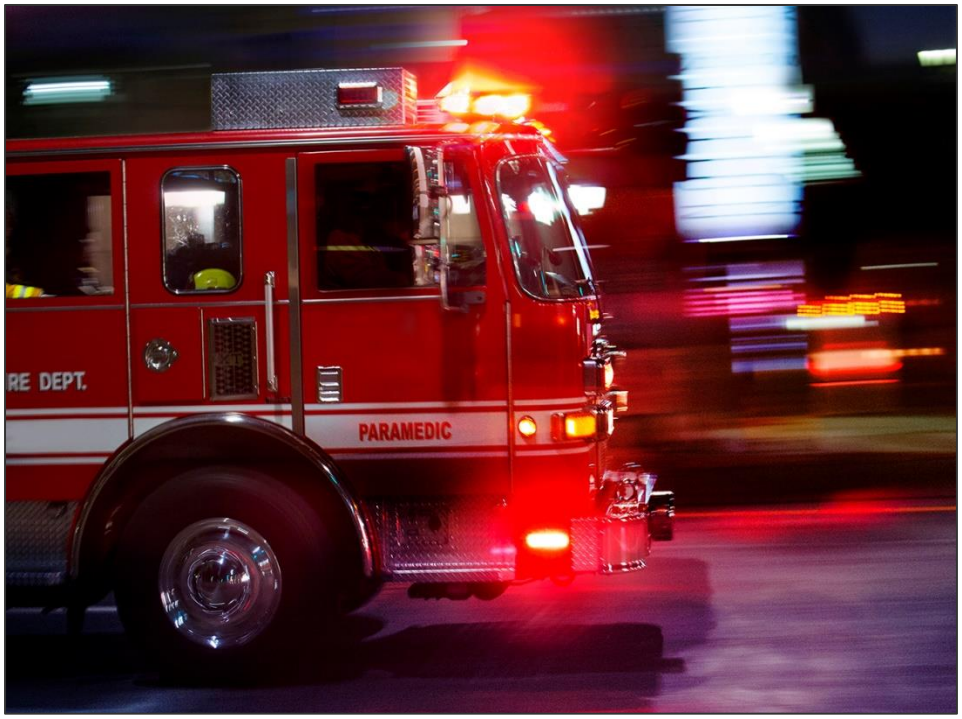
CENTER FOR PUBLIC SAFETY MANAGEMENT, LLC

FIRE OPERATIONAL AND ANALYSIS REPORT

CITY AND TOWN OF CANANDAIGUA, NEW YORK

Final Report: July 2018



CPSM®

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The International City/County Management Association (ICMA) is a 100-year-old, nonprofit professional association of local government administrators and managers, with approximately 9,000 members spanning thirty-two countries.

Since its inception in 1914, ICMA has been dedicated to assisting local governments in providing services to their citizens in an efficient and effective manner. Our work spans all the activities of local government — parks, libraries, recreation, public works, economic development, code enforcement, Brownfields, public safety, etc.

ICMA advances the knowledge of local government best practices across a wide range of platforms including publications, research, training, and technical assistance. Its work includes both domestic and international activities in partnership with local, state, and federal governments as well as private foundations. For example, it is involved in a major library research project funded by the Bill and Melinda Gates Foundation and is providing community policing training in Panama working with the U.S. State Department. It has personnel in Afghanistan assisting with building wastewater treatment plants and has had teams in Central America providing training in disaster relief working with SOUTHCOM.

The **ICMA *Center for Public Safety Management* (ICMA/CPSM)** was one of four Centers within the Information and Assistance Division of ICMA providing support to local governments in the areas of police, fire, EMS, emergency management, and homeland security. In addition to providing technical assistance in these areas we also represent local governments at the federal level and are involved in numerous projects with the Department of Justice and the Department of Homeland Security. In each of these Centers, ICMA has selected to partner with nationally recognized individuals or companies to provide services that ICMA has previously provided directly. Doing so will provide a higher level of services, greater flexibility, and reduced costs in meeting members' needs as ICMA will be expanding the services that it can offer to local governments. For example, The Center for Productivity Management (CPM) is now working exclusively with SAS, one of the world's leaders in data management and analysis. And the Center for Strategic Management (CSM) is now partnering with nationally recognized experts and academics in local government management and finance.

Center for Public Safety Management, LLC (CPSM) is now the exclusive provider of public safety technical assistance for ICMA. CPSM provides training and research for the Association's members and represents ICMA in its dealings with the federal government and other public safety professional associations such as CALEA. The Center for Public Safety Management, LLC maintains the same team of individuals performing the same level of service that it has for the past seven years for ICMA.

CPSM's local government technical assistance experience includes workload and deployment analysis using our unique methodology and subject matter experts to examine department organizational structure and culture, identify workload and staffing needs, and identify and disseminate industry best practices. We have conducted more than 269 such studies in 37 states and 204 communities ranging in size from 8,000 population (Boone, Iowa) to 800,000 population (Indianapolis, Ind.).

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SECTION 1. INTRODUCTION

CPSM was retained by the City and Town of Canandaigua to complete an analysis of the fire services-service delivery and fire staffing models of each entity (city and town). This analysis is designed to provide the city and town with a thorough and unbiased review of services provided to the city by the Canandaigua Fire Department and those fire departments serving the town.

This report provides a benchmark of the city's and town's existing fire service delivery systems and community risk as analyzed in the accompanying comprehensive operational analysis and community risk assessment. The analysis and assessment were performed utilizing information provided by the city and its municipally operated fire department, the town, fire departments serving the town, mutual aid departments, and external sources such as the U.S. Census Bureau and Ontario County. Also included in this report is geographic information systems (GIS) data mapping to support the operational and risk analysis discussions and recommendations.

During the study, CPSM analyzed available performance data provided by the city and town, and examined firsthand the fire response operations. Fire departments tend to deploy resources utilizing traditional approaches, which are rarely reviewed. To begin the review, project staff asked the city and town for certain documents, data, and information. The project staff used the information/data made available to familiarize themselves with the city's and town's fire service delivery system, fire operations, and community risk. The provided information was also used in conjunction with the available response data to determine the existing performance of the fire service delivery system, and to compare that performance to national benchmarks. These benchmarks have been developed by organizations such as the National Fire Protection Association (NFPA), Center for Public Safety Excellence, Inc. (CPSE), Vision 20/20, and the ICMA Center for Performance Measurement.

Project staff conducted a site visit on March 26 and 27, 2018, for the purpose of observing fire department and agency-connected supportive operations; interviewing key staff from each entity, and collectively as many agencies providing fire service to the city and town; and reviewing preliminary data, operations, and community risk. Telephone conference calls were conducted as well as e-mail exchanges between CPSM project management staff, the city and its municipal fire chief, so that CPSM staff could affirm the project scope and elicit further discussion regarding this operational analysis.

CPSM found the current fire service delivery system for the city and town to be challenged, as discussed further in this report. The personnel with whom CPSM interacted with during phone conversations and while conducting the on-site visit are focused on managing all aspects of service delivery to the best of their abilities with available resources. A key aspect of CPSM's analysis is providing observations and recommendations regarding the delivery of fire and first-response EMS services.

This report contains a series of observations and recommendations provided by CPSM that are focused on delivering services more efficiently, effectively, and in some cases, safer.

Recommendations and considerations for continuous improvement of services are presented below in the order they appear in the report. CPSM recognizes there may be recommendations and considerations offered that must be bargained, budgeted for, or for which processes must be developed prior to implementation.

RECOMMENDATIONS

1. The City of Canandaigua and Town of Canandaigua should renegotiate their fire services agreement and delete the stipulation that Station 2 be staffed 24/7. (See p. 30.)
2. The Canandaigua Fire Department should deploy both on-duty firefighters on a single unit, responding from Station 1. (See p. 30.)
3. The City of Canandaigua Fire Department should provide the Erina Hose Company President with the necessary support to continue volunteer recruitment and retention efforts. This can include financial support for marketing and advertising efforts and programs to recruit new and retain existing personnel, providing staff assistance to assist with developing surveys, preparing mailings to all city residents, and other potentially labor intensive support functions. (See p. 34.)
4. The Canandaigua Fire Department, as well as the Cheshire, Bristol, and East Bloomfield Fire Departments, should build at least a portion of their training regimens and tactical strategies around the exterior or transitional attack for when the fire scenario and the number of available units/responding personnel warrants this approach. (See p. 46.)
5. In acknowledgement of the fact that the Canandaigua Fire Department operates in a minimal staffing mode and recognizing the potential for rapid fire spread particularly in the more densely developed areas of the city, the CFD should equip all its apparatus with the appropriate appliances and hose as described herein. It should develop standardized tactical operations that will enable arriving crews to quickly deploy high-volume fire flows of 1,200 to 1,500 gallons per minute (if the water supply will permit this), utilizing multiple hose lines, appliances, and master stream devices. This flow should be able to be developed within four to five minutes after arrival of an apparatus staffed with two or three personnel. (See p. 46.)
6. The City and Town of Canandaigua should require that personnel who staff fire and rescue organizations that respond into the city and/or town on automatic/mutual aid possess the same minimum levels of training that Canandaigua personnel are required to maintain. (See p. 51.)
7. The city and town's automatic/mutual aid agreements with surrounding fire and rescue organizations should stipulate the minimum required training standards for personnel who may respond into either the city or township to assist. The agreements should also stipulate that the ranking officer of each entity must certify in writing on an annual basis that his/her personnel comply. (See p. 51.)
8. The City and Town of Canandaigua, along with their fire service providers, should work with the Ontario County 9-1-1 center in an attempt to reduce call processing time from receipt to dispatch to 60 seconds or less, 90 percent of the time. (See p. 58.)
9. The City and Town of Canandaigua, along with their fire service providers, should work with the Ontario County 9-1-1 center to change the policy that first unit response and on-scene times are from appropriate fire service fire suppression units rather than a member possibly in a private vehicle. (See p. 58.)
10. The City and Town of Canandaigua, along with their fire service providers, should work with the Ontario County 9-1-1 center to change the current time stamp policy to ensure that all units responding to all incidents have complete time stamps that capture all three components of total response time (dispatch, turnout, and travel) to enable more thorough analysis of response time data. (See p. 58.)

11. The City and Town of Canandaigua, along with their fire service providers, should analyze on an ongoing basis their turnout and response/travel times to incidents, along with NFPA 1720 benchmark compliance for number of personnel on scene within recommended timeframes. (See p. 58.)
12. In order to increase the Effective Firefighting Force (EFF) initially deployed, and reduce response times for all units and personnel to arrive on location, the Canandaigua Fire Department and the fire departments that serve the Town of Canandaigua should enter into operational agreements with surrounding mutual aid departments for the simultaneous dispatch of specified resources, on automatic aid, for any reported structure fire that occurs in the City or Town of Canandaigua. (See p. 73.)
13. It is strongly recommended that Canandaigua Fire Department take steps to aggressively recruit, train, and utilize volunteer firefighters to increase daily fire suppression staffing and establish realistic recruitment, retention, and volunteer member utilization goals. (See p. 90.)
14. The Canandaigua Fire Department should work to foster a recruitment and retention program that focuses on: membership flexibility; marketing the volunteer program to millennials; and continuous retention efforts focused on increasing the retention rate of volunteer members through recognition of efforts, a friendly and diverse work environment, mentoring for advancement in the organization, sustaining current incentives, and researching and implementing new incentives as funds are made available. (See p. 90.)
15. The City of Canandaigua should explore various financial incentives for volunteer firefighters, including exploring the feasibility of providing health benefits and implementing a LOSAP program for personnel who meet certain training and response criterion. (See p. 90.)
16. The City and Town of Canandaigua should explore the feasibility of utilizing, and in fact encouraging, city and town employees to perform "dual roles" by serving not only in their full-time positions but also serving the fire departments as volunteer firefighters. (See p. 90.)
17. Once the number of trained and certified volunteer firefighters is increased to a reasonable number, the Canandaigua Fire Department should implement an in- station duty crew program that will supplement the on-duty career staffing, and which will reduce the necessary fire department time commitment for the volunteer personnel. (See p. 90.)
18. In conjunction with the administration of colleges in the Finger Lakes Region, the Canandaigua Fire Department should examine if it is feasible to start a live-in firefighter program. (See p. 90.)
19. Combination career/volunteer departments require strong leadership and specialized fire officer skills to manage firefighters effectively. The Canandaigua Fire Department should enhance its fire officer training to include the volunteer management component. (See p. 90.)
20. The Canandaigua Fire Department should research and determine the most appropriate web-based alerting system for volunteer and off-duty members so that response of individual members can be monitored for each call. Ultimately, the response of dispatched apparatus then can be monitored by command officers so that appropriate emergency scene decisions can be made based on available and responding or potentially responding apparatus. (See p. 90.)
21. The optimum daily career staffing of the Canandaigua Fire Department is four personnel. This level is necessary to manage the potential fire risk identified herein, and provide a single, adequately staffed fire suppression resource available for immediate response. However, CPSM understands the current funding capability of the city does not support this staffing level. Given these current challenges:

- CPSM recommends that the city add one career member per shift over the next three fiscal year periods to enhance staffing levels to a total of three career staff per 24-hour shift period.
- Add one additional career firefighter during the weekday hours to increase on-duty staffing to four.
- Recruit and retain combat volunteer firefighters to augment weeknight and weekend career staffing. (See p. 91.)

22. The Town of Canandaigua should consider reducing the number of organizations that it contracts with for fire protection to two: the City of Canandaigua and the Cheshire Volunteer Fire Department. (See p. 91.)
23. The Town of Canandaigua should negotiate with the City of Canandaigua for automatic response by the career city engine to all calls during the daytime hours when volunteer personnel are less available, and for 24 hours a day for any reported fire or other potentially serious incident. (See p. 91.)
24. The City and Town of Canandaigua, along with any other interested and/or potential partners such as Crystal Beach, should enter into discussions for the purposes of exploring the feasibility of a more regional approach to fire protection delivery systems, and in particular, if a merger or consolidation into a regional fire department may be in their best interests. (See p. 91.)
25. The Canandaigua Fire Department should develop a compelling public education program that can be used by all fire departments in the area and which includes discussing the benefits of installing fire sprinklers in all new construction including residential systems in new one- and two-family dwellings. (See p. 91.)
26. The City and Town of Canandaigua should consider the feasibility and cost/benefits of offering grants for the installation of fire sprinkler systems in buildings that are being renovated/redeveloped. (See p. 91.)

SECTION 2. SCOPE OF PROJECT

The scope of this project is to provide a comprehensive independent review of the fire services provided to the City and Town of Canandaigua, N.Y., so that city and town officials can obtain an external perspective regarding the department's service delivery system and operational staffing. CPSM approached the project with an analysis of the "current state" of the operational department's (city and town) service delivery and staffing models. This approach led us to recommendations linked to increasing the efficiency and effectiveness of the fire services-service delivery, as well as future sustainability of the fire service.

Local government officials often attempt to understand if their fire department is meeting the service demands of the community, and commission these types of studies to measure their department against industry best practices. In this analysis, CPSM provides observations and recommendations where appropriate, and provides input on administrative and operational matters for consideration by the city and town.

Key areas evaluated during this study included:

- CPSM operational team members utilized response data and workload information provided by the city and town through the National Fire Incident Reporting System (NFIRS) to complete the workload and response analysis.
- Conduct of a community risk analysis.
- Determination of the adequacy of current resources, staffing structural design, service deployment, and future needs for staffing to include volunteer, full-time, and on-call members.
- A review and analysis of operational guidelines of the fire services-service delivery system.
- Analysis of the current operational service delivery model for fire services, and development of recommendations on the most viable and sustainable fire service delivery model.
- Provision of specific information and recommendations that will enhance the overall efficiency and effectiveness of the fire services-service delivery system for the City of Canandaigua and the Town of Canandaigua.

SECTION 3. ORGANIZATION AND MANAGEMENT

CITY OF CANANDAIGUA

The City of Canandaigua is in Ontario County, which is situated in west-central New York in what is known as the Finger Lakes Region. Canandaigua was originally incorporated as a village in 1815, then as a city in 1913. The city, which is located on the northern end of Canandaigua Lake (one of the Finger Lakes) is centrally located within Ontario County and serves as the county seat. Although a separate municipality, the city is surrounded by the Town of Canandaigua. The city encompasses 4.85 square miles and had a 2010 census population of 10,545 which was a 6.4 percent decrease from the 2000 census. The 2016 population estimate projected an additional 1.7 percent decline. With a population density of about 2,258 persons per square mile, the city is considered an urban community.

Canandaigua operates under a council-manager form of government. The legislative body is the City Council, composed of a mayor and eight council members, who are elected every two years. A recent amendment to the city charter changed the term of office from two years to four years commencing in 2020. The Mayor presides at meetings of the City Council and is the executive head of the city government, but has no administrative duties. The city is represented on the Ontario County Board of Supervisors by two supervisors, each one representing approximately half of the city. The City Manager is responsible for the day-to-day operation of all city departments, and provides support services to the City Council. The City Council appoints the City Manager, who is responsible for the implementation of policies established by the council and the general administration of city operations.

Canandaigua operates under a traditional organizational chart. The City Manager reports directly to the council, with major functional areas and departments reporting directly to the manager.

Chapter 9, subsection 9.7 of the City of Canandaigua Charter (amended 11/7/2017) establishes a Fire Bureau within the Department of Public Safety. The charter states that "The Fire Bureau shall include the paid firefighters, as well as the members of the volunteer fire companies." Subsection 9.8 establishes that the head of the Fire Bureau shall be the Fire Chief, who shall be appointed by the Director of Public Safety (currently the City Manager is fulfilling this role) with City Council approval. Subsection 9.9 delineates the powers and duties of the fire chief.

TOWN OF CANANDAIGUA

The Town of Canandaigua is also located in Ontario County. It is situated on the north and west shores of Canandaigua Lake. The town was officially incorporated in 1791. It covers an area of 62.5 square miles and had a 2010 census population of 10,020, which was a 31 percent increase from the 2000 census. The 2016 population was estimated to have increased by 11.4 percent from 2010's figure to 11,161. With a population density of just 196.5 persons per square mile overall the town is considered rural in nature. However, there are areas, particularly adjacent to the city that are much more suburban in nature. Continued rapid growth is projected to continue for the foreseeable future. The town's Sewer Master Plan projects an estimated 18.5% increase in population by 2050 to about 11,875. The Agricultural Enhancement Plan references construction of 100 new dwelling units per year. However, given current growth patterns some unofficial estimates project the town's population to as much as 17,000 by 2030. The increase in residential housing will include both single and multi-family occupancies.

The Town of Canandaigua operates under a Town Board-Town Manager form of government. The Town Board, which is the legislative body, is comprised of four Council members and a Supervisor, all of whom are elected at large. The Town Supervisor is the chief fiscal officer of town government and presides at the meetings of the Town Board. The Town Manager is the chief administrative officer of the town and is responsible for day-to-day operations of the town government and coordinates the development and implementation of local policies and directives by the Town Board.

The Town of Canandaigua also operates under a traditional organizational chart. The Town Manager reports directly to the Town Board, with the majority of functional areas and departments reporting directly to the manager. The current town manager, who was appointed in March 2017, is the town's first professional manager.

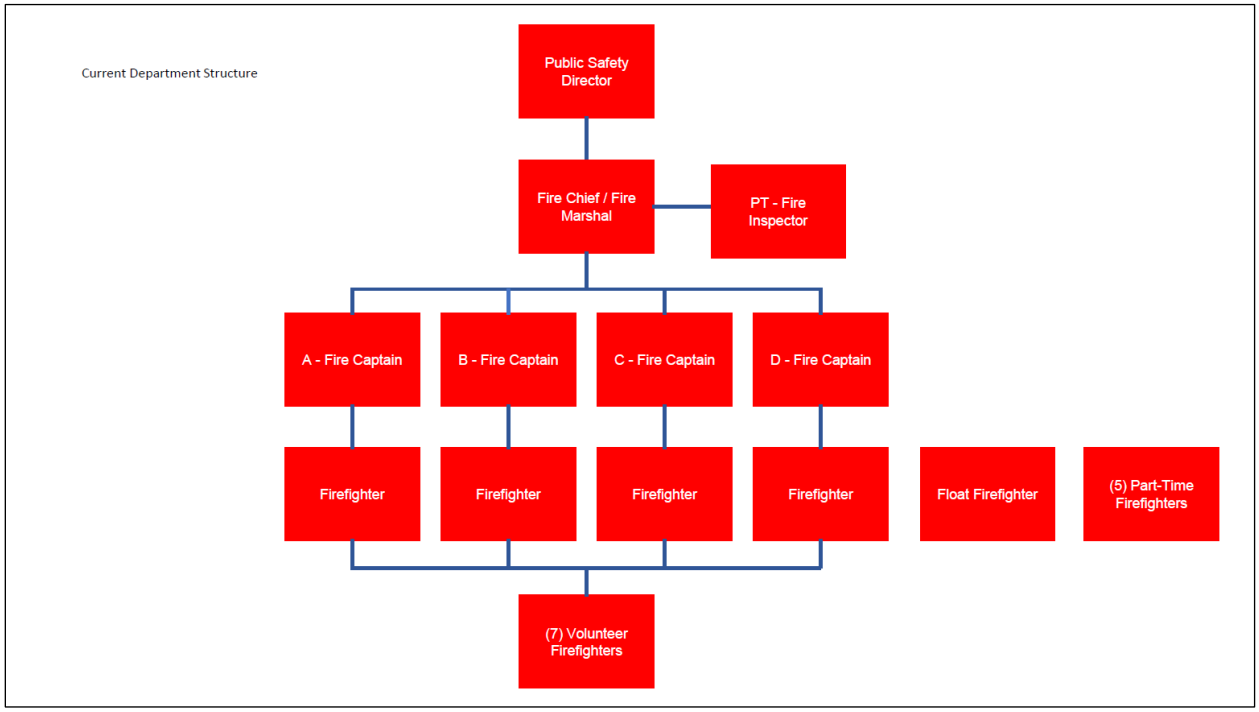
The Town of Canandaigua does not have its own fire department. Instead, the town contracts with several entities, including the City of Canandaigua, to provide fire protection services to the town.

CITY OF CANANDAIGUA FIRE DEPARTMENT

The City of Canandaigua Fire Department (CFD) is a municipal department of the city government. It is a full-service public safety organization which is "dedicated to providing quality, timely, and professional fire and emergency services to those who live in, work in, and visit the City and Town of Canandaigua as well as the surrounding communities." The department is comprised of 10 full-time firefighters (including the Fire Chief), five part-time personnel, and seven volunteer members, four of whom are qualified interior firefighters. All the full- and part-time personnel are covered under the provisions of New York State Civil Service. Only two of five part-time personnel are active at working shifts.

While they are part of the overall Canandaigua Fire Department, the volunteer firefighters are also considered to be members of the city's two volunteer fire companies; Erina Hose Company, which has six active members, and Merrill Hose Volunteer Fire Company, which has just a single active member who serves as fire-police volunteer. A third volunteer fire company, Hook and Ladder Company, was previously disbanded by the State of New York. Figure 3-1 illustrates the organizational chart of the CFD.

FIGURE 3-1: City of Canandaigua Fire Department Organizational Structure



The department normally staffs two fire stations, 24 hours a day, 7 days a week, with two personnel on duty each day, one at each station. Station 1, which also serves as the department's administrative headquarters, is located at 335 South Main St. in downtown Canandaigua. Engine 211, Reserve Engine 212, Tower Ladder 281, Squad 261, and the confined space/technical rescue trailer are housed there.

Station 2 is located at 5298 Parkside Dr., in the Town of Canandaigua. This station is owned by the town; the equipment and personnel are provided by the city through a contract with the town. Quint 282 is normally assigned to this station.

CFD personnel perform a range of emergency responses and calls for assistance. In addition to fire incidents, fire personnel also respond to potential life-threatening emergency medical responses within the city (but not the town), and provide mutual aid to neighboring departments and jurisdictions. The CFD also has personnel trained to handle complex technical rescues. The department functions as the Ontario County confined space rescue team and is the deployment point for the confined space/technical rescue trailer. Some personnel are also certified as hazardous materials technicians and specialists and participate in a multicounty hazardous materials response team that serves Ontario, Seneca, and Yates counties.

In 2017, the CFD responded to a total of 1,433 incidents, an average of 3.9 per day. This represents an increase of 120 (9.1 percent) incidents over 2016 and a 32.2 percent increase since 2013. Of the total incidents:

- 64 were actual fires (4.5 percent).
- 23 were building fires (35.9 percent of fire incidents/1.6 percent of overall incidents).

The department also responds with the Canandaigua Emergency Squad on incidents in the city (but not in its coverage area in the town) that meet advanced life support (ALS/ life threat)

criterion. With 686 total responses (47.9 percent of all responses), these incidents comprise the highest percentage of incidents to which the department responds.

Figure 3-2 illustrates annual CFD responses for 2012 – 2017. Figure 3-3 breaks down the incidents by type of call.

FIGURE 3-2: CFD Annual Responses 2012 – 2017

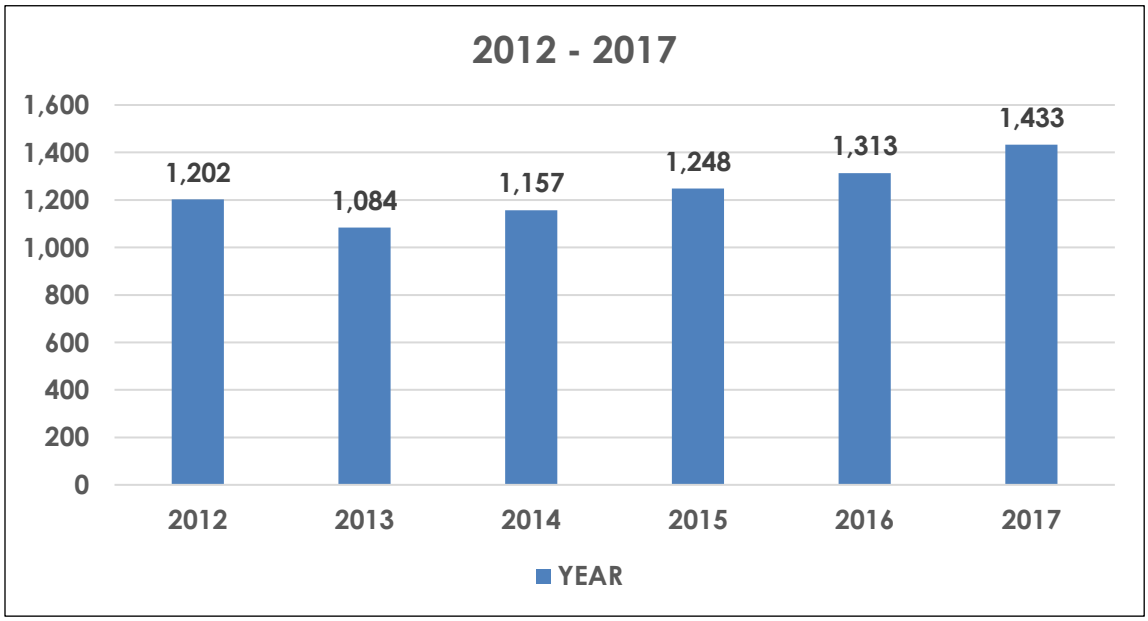
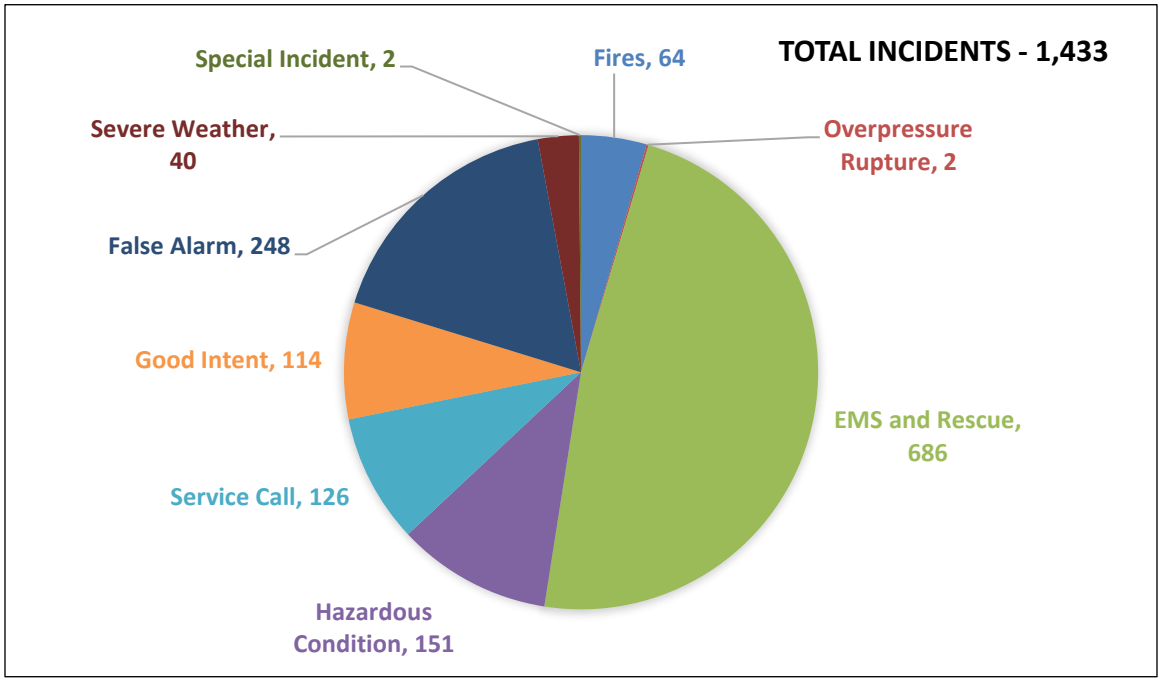
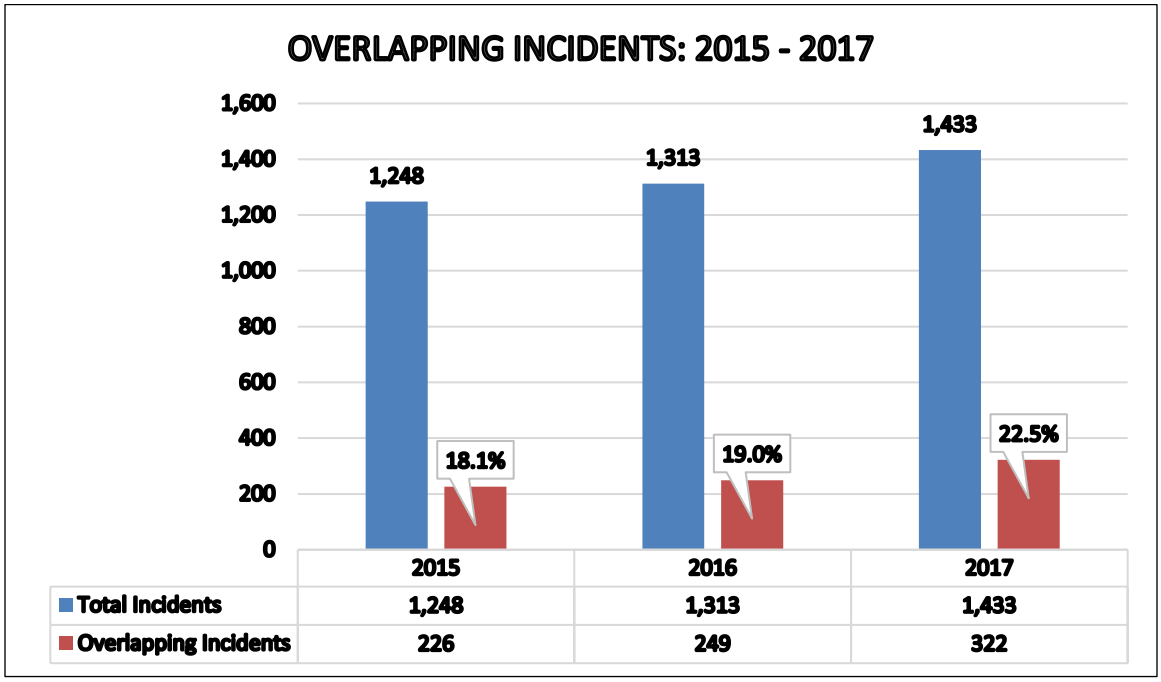


FIGURE 3-3: CFD Incidents by Type 2017



From 2015 through 2017, the number of times that that CFD experienced two or more incidents either simultaneously, or that overlapped with at least one other incident, occurred during 18.1 percent of the incidents in 2015, 19 percent in 2016, and 22.5 percent in 2017. Figure 3-4 illustrates this information.

FIGURE 3-4: CFD Overlapping Incidents, 2015 - 2017



Canandaigua Veteran's Administration (VA) Hospital Fire Department – The VA hospital located within the city also staffs its own full-time, career fire department that is comprised of a total of 12 personnel. Although staffing can at times be as high as five or six personnel, minimum (and normal) staffing is four personnel on duty 24/7. The VA fire department operates one engine and a reserve ambulance. In addition to their firefighting duties the fire personnel perform emergency maintenance functions in the hospital after normal working hours. They have also recently started doing EMS ambulance transports as their staffing permits.

The VA fire department relies on the city for response to any confirmed fire, and, for a ladder to access the multi-floor buildings located on the campus. The city also supports the VA for any type of technical rescue incidents. In return, the VA fire department responds automatically to any confirmed fire in the city. They will normally staff their engine with three personnel for incidents in the city. However, because of the number of other duties and responsibilities they have within their own facility, and, the 2,300 calls per year they handle themselves, the VA fire department is not always available for immediate response. When they are, they are an important resource in the establishment of an initial Effective Response Fore (ERF) for fires in the city.

TOWN OF CANANDAIGUA FIRE SERVICE

The Town of Canandaigua does not have its own fire department as a component of town government. Instead, the town has established the *Town of Canandaigua Fire Protection District*,

which encompasses the entire town. Fire protection is provided through contract with four separate entities as outlined below:

City of Canandaigua – The city fire department is profiled above. It provides fire protection in the areas of the town located north, east, and south of the city along the eastern shore of Canandaigua Lake. Canandaigua Fire Department station 2 is located at 5298 Parkside Dr. within the town. It is owned by the town and leased to the city for $1.00 per year. As required by the fire protection contract, it is staffed with a single firefighter 24/7. In both 2017 and 2018, the annual one-year contract between the city and town was for $400,000.

Cheshire Volunteer Fire Department – The Cheshire Fire Department protects the majority of the town south and west of the city and the entire west shore of Canandaigua Lake that is bordered by the town. This response area is about 9.5 miles from north to south and ranges from about 1 to 3.5 miles wide.

The department is fully volunteer and is comprised of approximately 43 actives members, about 27 of whom who are qualified interior structural firefighters.[1] However, the Chief did inform CPSM that about 10 of these personnel were deficient on their most recently quarterly self-contained breathing apparatus (SCBA) training that is needed to remain qualified, so the number of available volunteers at the time of this study was 17.

The Cheshire Fire Department operates from two stations. Station 1 is located at 4285 State Highway 21, South. This station houses one rescue engine, one water tender/engine combination, one squad, one water tender, one brush truck with a trailer for a UTV, and one reserve ladder. Station 2, which opened in 2014, is located at 5439 State Route 5 & 20. It has one engine, one quint,[2] and, one reserve squad deployed from it. In 2017, the department responded to a total of 411 calls.

The town and Cheshire are currently in the final year of a three-year contract that took effect on January 1, 2016 and runs through December 31, 2018. The contract cost was $471,054 in 2016, $480,475 in 2017, and is $490,085 for 2018.

While not a part of the fire services contract, Cheshire responds on E level (most critical life threat) EMS incidents in the old Box 500, adjacent to the city. In the remainder of its response area it provides first responder service on all EMS incidents.

East Bloomfield – Holcomb Volunteer Fire Department – The East Bloomfield - Holcomb Volunteer Fire Department protects the northwest portion of town. Although the Canandaigua Airport is in the portion of the town protected by the city fire department, East Bloomfield-Holcomb responds automatically there, also.

East Bloomfield is a fire district; it is an independent government entity with its own governing board which can levy taxes. The contract that the Town of Canandaigua has for fire protection is with the East Bloomfield Fire District. The fire district in turn then contracts with the fire department to provide actual fire protection services to the district.

1. Different fire departments establish their own criterion for this. The State of New York requires only certification as a Firefighter I to be considered interior structural firefighting qualified. However, the state's Firefighter I training program does not include live fire training. This training is not provided until the Firefighter II training program.
2. A "quint" serves the dual purpose of an engine and a ladder truck. The name quint refers to the five functions that a quint provides: pump, water tank, fire hose, aerial device, and ground ladders.

The department is fully volunteer and reports that it has about 30 active members, 14 of whom are qualified interior firefighters.[3] It operates with two engines, one mini-pumper, one 2,000-gallon water tender, and one brush truck from a single station located at 105 Main St. in East Bloomfield.

The town and fire district are in the second year of a five-year contract that took effect on January 1, 2017 and runs through December 31, 2021. The contract pays the district $36,320 per year for the fire protection services it provides.

Bristol Volunteer Fire Department – The Bristol Volunteer Fire Department protects a small area of the western part of the town between the Cheshire and East Bloomfield response areas. It is by far the smallest of the town's various protection areas. However, the department has had a contract with the town since the 1960s, based upon response times to that section of the town.

The department is fully volunteer and reports it has about 38 active members, of which 12 are qualified interior firefighters.[4] Three additional senior members can also be counted as interior firefighters when necessary. In addition to state-required training to be interior firefighter qualified, Bristol requires its personnel to complete a 32-hour SCBA mask confidence course, and Ontario County's 32-hour Smoke Diver Class. At the time of this study the department had three additional probationary smoke divers who were working on finishing their interior qualifications.

The department operates from two stations. Station 1 is located at 4350 Route 64, and Station 2 is at 3792 County Road 2. The department operates three engines, one of which is a combination engine/water tender, one light rescue truck, one 2,300-gallon water tender, one off-road vehicle, and one command/rehab trailer. It responded to 207 calls in 2017, 6 of them in its contract area, and an additional 13 to assist Cheshire.

The department is involved in various county technical rescue teams, including high angle, swift water, and ice rescue specialties. Four members of the department are also members of the county hazardous materials team. In August 2017, the department had its most recent Insurance Services Office (ISO) evaluation completed and this resulted in an improvement from a Class 5 rating to a 4/4Y.

Bristol also provides EMS first responder service to its entire response area, including the town contract area. This service is something the department just does, it is not part of the fire services contract.

The annual payment from the town to Bristol is $20,800.

In the three-year period from 2014 through 2016 there were a total of 882 fire incidents in the town, an average of 294 per year, or 0.81 per day. Automatic fire alarms accounted for the largest number of incidents at 398 (45.1 percent). Fifty-three (6.0 percent) were structure fire incidents, an average of 17.7 per year or 1.5 per month. An additional 92 (10.4 percent), an average of 30.7 per year or 2.6 per month, were some other type of fire incident. Table 3-1 shows the fire responses by department. Figure 3-5 shows the incidents by type.

3. Different fire departments establish their own criterion for this. The State of New York requires only certification as a Firefighter I to be considered interior structural firefighting qualified. However, the state's Firefighter I training program does not include live fire training. This training is not provided until the Firefighter II training program.
4. Ibid.

TABLE 3-1: Town Fire Responses by Department

	2014	2015	2016
Bristol	0	2	0
Canandaigua	87	105	92
Cheshire	144	171	177
East Bloomfield	8	11	10
Cancelled Calls	25	23	18
Total	**266**	**319**	**297**

FIGURE 3-5: Town Fire Incidents by Type 2014 - 2016

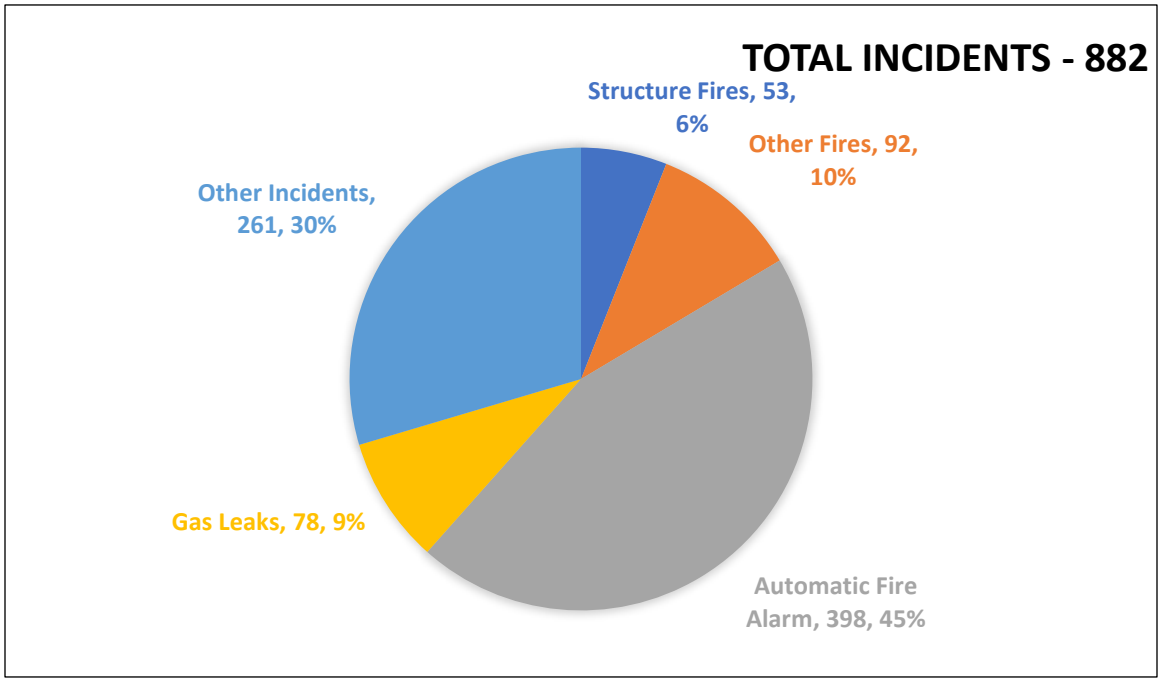
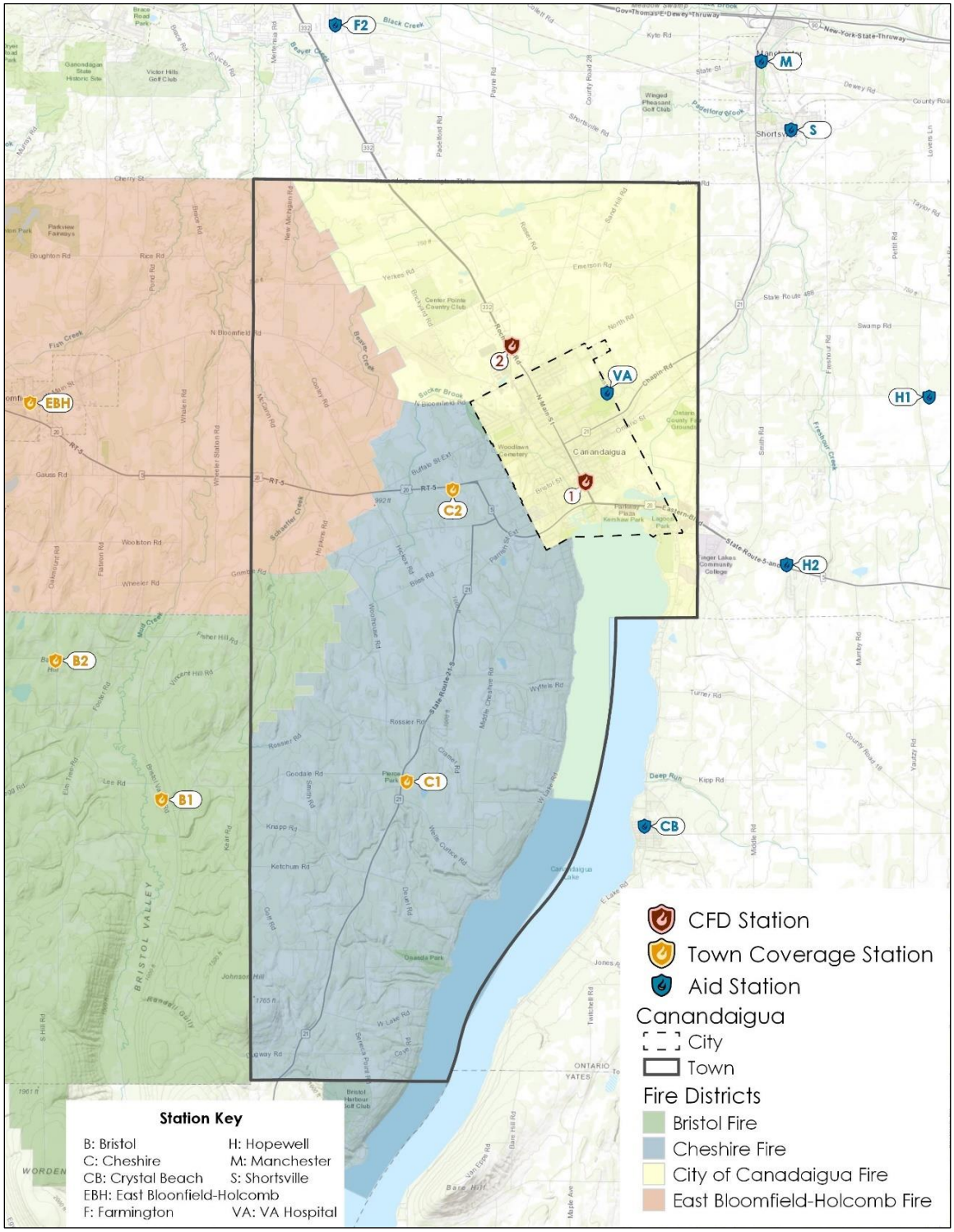


Figure 3-6 on the next page illustrates the location of stations and the station fire response zones that service the Town of Canandaigua.

FIGURE 3-6: Town of Canandaigua Fire Protection Response Areas



STAFFING AND DEPLOYMENT OF RESOURCES

The fire service has experienced tremendous technological advances in equipment, procedures, and training over the past 50 years. Better personal protective equipment (PPE), the widespread use of self-contained breathing apparatus (SCBA), large diameter hose, better and lighter hand lines and nozzles, and thermal imaging cameras are just a few of the numerous advances in equipment and procedures that have allowed firefighters to perform their duties more effectively, efficiently, safely, and with fewer personnel. However, the fact remains that the emergency scene in general, and the fireground involving a structure fire in particular, is a dynamic, dangerous, frequently unpredictable, and rapidly changing environment where conditions can deteriorate very quickly and can place firefighters in extreme personal danger, particularly if there are not enough on scene to handle all the critical tasks.

The operations necessary to successfully extinguish a structure fire, and do so effectively, efficiently, and safely, requires a carefully coordinated and controlled plan of action where certain operations such as venting ahead of the advancing interior hose line(s) must be carried out with a high degree of precision and timing. Multiple operations, frequently where seconds count, such as search and rescue operations and trying to cut off a rapidly advancing fire, must also be conducted simultaneously. If there are not enough personnel on the incident initially to perform all the critical tasks, some will, out of necessity, be delayed. This can result in an increased risk of serious injury, or death, to building occupants and firefighters, and, increased property damage.

Staffing and deployment of fire services is not an exact science. While there are many benchmarks that communities and management utilize in justifying certain staffing levels, there are certain considerations that are data driven and reached through national consensus that serve this purpose as well. CPSM has developed metrics it follows and recommends that communities consider when making recommendations regarding staffing and deployment of fire resources.

Staffing is one component and the type of apparatus the staff is deployed on and from where (station locations) are the other two components that determine how fire and EMS services are delivered. Linked to these components of staffing and deployment are eleven critical factors that drive various levels and models from which fire and EMS departments staff and deploy. These factors are:

Fire Risk and Vulnerability of the Community: A fire department collects and organizes risk evaluation information about individual properties and based on the rated factors then derives a "fire risk score" for each property. The community risk and vulnerability assessment are used to evaluate the community as a whole.

Population, Demographics, and Socioeconomics of a Community: Population and population density drives calls for local government service, particularly public safety. The risk from fire is not the same for everyone, with studies telling us age, gender, race, economic factors, and what region in the country one might live in contribute to the risk of death from fire. Studies also tell us these same factors affect demand for EMS, particularly population increase and the more frequent use of hospital emergency departments as many uninsured or underinsured patients rely on EDs for their primary and emergent care, utilizing prehospital EMS transport systems as their entry point.

Call Demand: Demand is made up of the types of calls to which units are responding and the location of the calls.

Workload of Units: The types of calls to which units are responding and the workload of each unit in the deployment model. This tells us what resources are needed and where.

Travel Times from Fire Stations: Looks at the ability to cover the response area in a reasonable and acceptable travel time when measured against national benchmarks. Links to demand and risk assessment.

NFPA Standards, ISO, OSHA requirements (and other national benchmarking).

EMS Demand: Community demand; demand on available units and crews; demand on non-EMS units responding to calls for service (fire/police units); availability of crews in departments that utilize cross-trained EMS staff to perform fire suppression.

Critical Tasking: The ability of a fire and EMS department to comprise an effective response force when confronted with the need to perform required tasks on a fire or EMS incident scene defines its capability to provide adequate resources to mitigate each event.

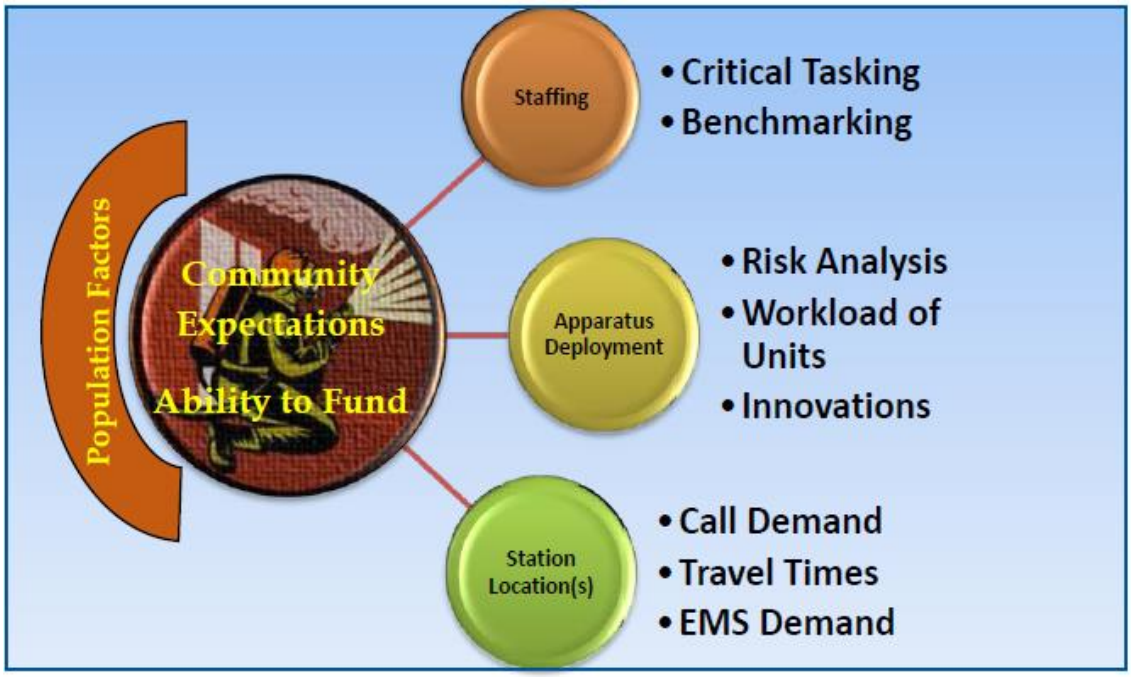
Innovations in Staffing and Deployable Apparatus: The fire department's ability and willingness to develop and deploy innovative apparatus.

Community Expectations: Measuring, understanding, and meeting community expectations.

Ability to Fund: The community's ability and willingness to fund all local government services and understanding how the revenues are divided up to meet the community's expectations.

These factors are further illustrated in Figure 3-7.

FIGURE 3-7: Staffing and Deploying Fire and EMS Departments



While each component presents its own metrics of data, consensus opinion, and/or discussion points, aggregately they form the foundation for informed decision making geared toward the implementation of sustainable, data- and theory-supported, effective fire and EMS staffing and deployment models that fit the community's profile, risk, and expectations.

The City and Town of Canandaigua had not completed analysis of these elements prior to this study. However, part of CPSM's analysis involved the completion of a community fire risk and target hazard analysis. In addition, there appears to be a shifting of community expectations regarding service and the companion issue regarding continued levels of funding.

To effectively respond to and mitigate requests for emergency services, an agency must have a thorough understanding of its community's risk factors. Once identified and understood, each category or level of risk is associated with the necessary resources and actions required to mitigate it. This is accomplished through a critical task analysis. The exercise of matching operational asset deployments to risk, or critical tasking, considers multiple factors including national standards, performance measures, and the safety of responders.

Critical tasks are those activities that must be conducted in a timely manner by responders at emergency incidents to control the situation and stop loss. Critical tasking for fire operations is the minimum number of personnel needed to perform the tasks required to effectively control a fire. To be effective, critical tasking must assign enough personnel so that all identified functions can be performed simultaneously. However, it is important to note that secondary support functions may be handled by initial response personnel once they have completed their primary assignment. Thus, while an incident may end up requiring a greater commitment of resources or a specialized response, a properly executed critical task analysis will provide adequate resources to immediately begin bringing the incident under control.

The specific number of people required to perform all the critical tasks associated with an identified risk is referred to as an *Effective Response Force* (ERF). The goal is to deliver an ERF within a prescribed time frame. National Fire Protection Association (NFPA) 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* (2014 Edition) is a nationally recognized consensus standard on staffing and deployment by volunteer/call, and primarily (85 percent or more) volunteer/call fire departments. It provides a benchmark for an ERF.[5]

Some of the key provisions of NFPA 1720 are as follows:

- Paragraph 4.3.1 on *Staffing and Deployment* states that the fire department shall identify minimum staffing requirements to ensure that a sufficient number of members are available to operate safely and effectively.
- Paragraph 4.3.2 on *Staffing and Deployment* states that the NFPA 1720 matrix shown in Table 3-2 shall be used by the authority having jurisdiction (AHJ) to determine staffing and response time objectives for structural firefighting, based on a low-hazard occupancy such as a 2,000 square foot, two-story, single-family residence without basement or exposures.

5. It is important to note that compliance with NFPA 1720 has not been mandated in the State of New York or by the federal government. It is considered a "best practice" that fire departments strive to achieve.

TABLE 3-2: Staffing and Response Time Table from NFPA 1720

Demand Zone	Demographics*	Minimum Staff to Respond	Response Time** (minutes)	Meets Objective (% of time)
Special risks	AHJ	AHJ	AHJ	90%
Urban	>1000 people/sq. mi.	15	9	90%
Suburban	500-1000 people/sq. mi.	10	10	80%
Rural	< 500 people/sq. mi.	6	14	80%
Remote*	Travel dist. > 8 mi.	4	Dependent upon travel distance	90%

* The City of Canandaigua is an urban community by definition with an average of 2,258 residents per square mile, while overall the Town of Canandaigua is rural with an average of 196.5 residents per square mile.
** Response time for the purpose of NFPA 1720 compliance begins at the completion of dispatch notification and ends at the time interval shown in the table.

- Paragraph 4.3.4 on *Staffing and Deployment* states that upon assembling the necessary resources at the emergency scene, the fire department should have the capability to safely commence an initial attack within two minutes, 90 percent of the time.
- Paragraph 4.6.1 *Initial Firefighting Operations* states that initial firefighting operations shall be organized to ensure that at least four members are assembled before interior fire suppression operations are initiated in a hazardous area.
- Paragraph 4.7.1 *Sustained Firefighting Operations* states that the fire department shall have the capability for sustained operations, including fire suppression; engagement in search and rescue, forcible entry, ventilation, and preservation of property; accountability of personnel; the deployment of a dedicated rapid intervention crew (RIC); and the provision of support activities for those situations which are beyond the capabilities of the initial attack.
- Paragraph 4.7.2 *Sustained Firefighting Operations* also states that the capability to sustain operations shall include sufficient personnel, equipment and resources to effectively, efficiently, and safely conduct the appropriate operations.

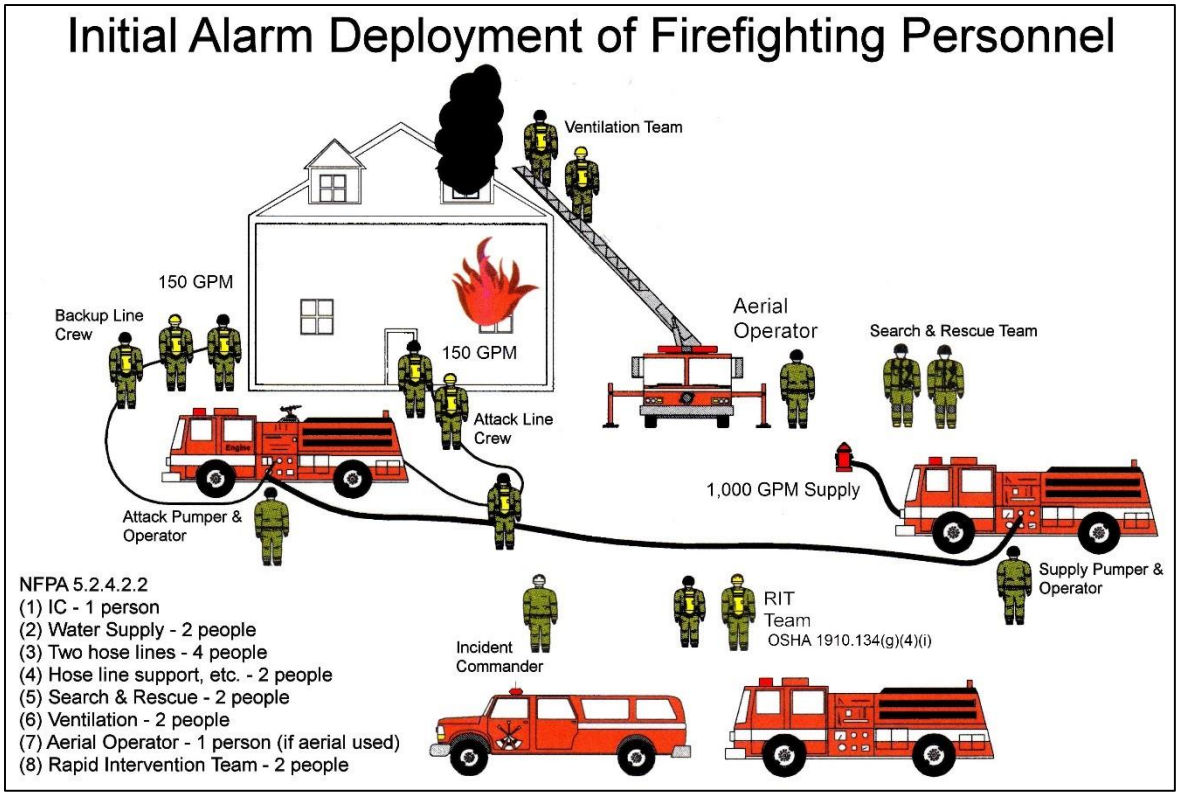
The NFPA's companion standard to 1720, Standard 1710 – *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* (2016 Edition) recommends a staffing deployment model and provides critical tasking guidelines for an ERF across several types of occupancies.

The initial full alarm assignment to a structural fire in a typical 2000 square-foot, two-story, single-family dwelling without a basement and with no exposures must provide for a minimum of 14 members (15 if an aerial device is used). Table 3-3 depicts the allotment of personnel to meet the critical tasking for this incident type, while Figure 3-8 further illustrates this deployment.

TABLE 3-3: Critical Tasking: Single Family Dwelling

Critical Task	Personnel
Incident Command	1
Continuous Water Supply	1
Fire Attack via Two Handlines	4
Hydrant Hook-Up, Forcible Entry, Utilities	2
Primary Search and Rescue	2
Ground Ladders and Ventilation	2
Aerial Operator (if Aerial is Used)	1
Establishment of an IRIT (Initial Rapid Intervention Team)	2
Effective Response Force	**14/15**

FIGURE 3-8: Initial Deployment of Firefighting Personnel/ERF Recommendation: Single-family Dwelling



These are the proverbial "bread and butter" structural fire incidents that fire departments respond to, and which are, by far, the most common type of structure fire. Personnel requirements for fires involving large, more complex structures such as commercial or industrial facilities or multifamily residential occupancies will require a significantly greater commitment of personnel. The 2016 edition of NFPA 1710 recommends a minimum of 27/28 personnel on the initial response for fires involving garden-style apartments and strip shopping centers, and, up to 42/43 personnel for fires in high-rise structures.

The NFPA *Fire Protection Handbook*[6] classifies buildings and occupancies by their relative risk and provides recommendations on the minimum ERF that will be needed to handle fire incidents in them. These include:

High-hazard Occupancies: Schools, hospitals, nursing homes, explosive plants, refineries, high-rise buildings, and other high life safety-hazard or large fire-potential occupancies.

Medium-hazard Occupancies: Apartments, offices, and mercantile and industrial occupancies, not normally requiring extensive rescue by firefighting forces.

Low-hazard Occupancies: One-, two-, or three-family dwellings and scattered small business and industrial occupancies. This represents the majority of occupancies found in many communities.

Regarding the implementation of an ERF and its aggregate effect on fireground operations, there has been much research done by a number of fire departments on the effects of various staffing levels. A recent comprehensive yet scientifically conducted, verified, and validated, study titled *Multiphase Study on Firefighter Safety and the Deployment of Resources* was performed by the National Institute of Standards and Technology (NIST) and Worcester Polytechnic Institute (WPI), in conjunction with the International Association of Fire Chiefs, the International Association of Fire Fighters, and the Center for Public Safety Excellence. For the first time, quantitative evidence has been produced regarding the impact of crew size on accomplishing critical tasks. Additionally, continual research from UL has provided tactical insights that shed further light on the needs related to crew size and firefighter safety. This body of research includes:

- An April 2010 report on *Residential Fireground Field Experiments* from the National Institute of Standards and Technology (NIST).
- An April 2013 report on *High-Rise Fireground Field Experiments* from the National Institute of Standards and Technology (NIST-HR).
- A December 2010 report on the *Impact of Ventilation on Fire Behavior in Legacy and Contemporary Residential Construction* (UL).

As stated, some of these studies' findings have a direct impact on the exercise of critical tasking. For example, as UL studied the impact of ventilation on fire behavior, it was able to obtain empirical data about the effect of water application on fire spread and occupant tenability. The research clearly indicates that the external application of a fire stream, especially a straight stream, does not "push fire" or decrease tenability in any adjacent rooms. Therefore, during the deployment of resources for the critical task of fire attack, consideration must be given to the option of applying water to the fire from the exterior when able. This approach enables a fire attack that can begin prior to the establishment of an IRIT as well as decreases the time to getting water on the fire, which has the greatest impact on occupant survivability.

The NIST studies examined the impact of crew size and stagger on the timing of fireground task initiation, duration, and completion. Although each study showed crew size as having an impact on time-to-task, consideration must be given to what tasks were affected and to what extent. For example, four-person crews operating at a low-hazard structure fire completed all fireground tasks (on average) 5.1 minutes or 25 percent faster than three-person crews.

6. Cote, Grant, Hall & Solomon, eds., *Fire Protection Handbook* (Quincy, MA: NFPA 2008), 12-3

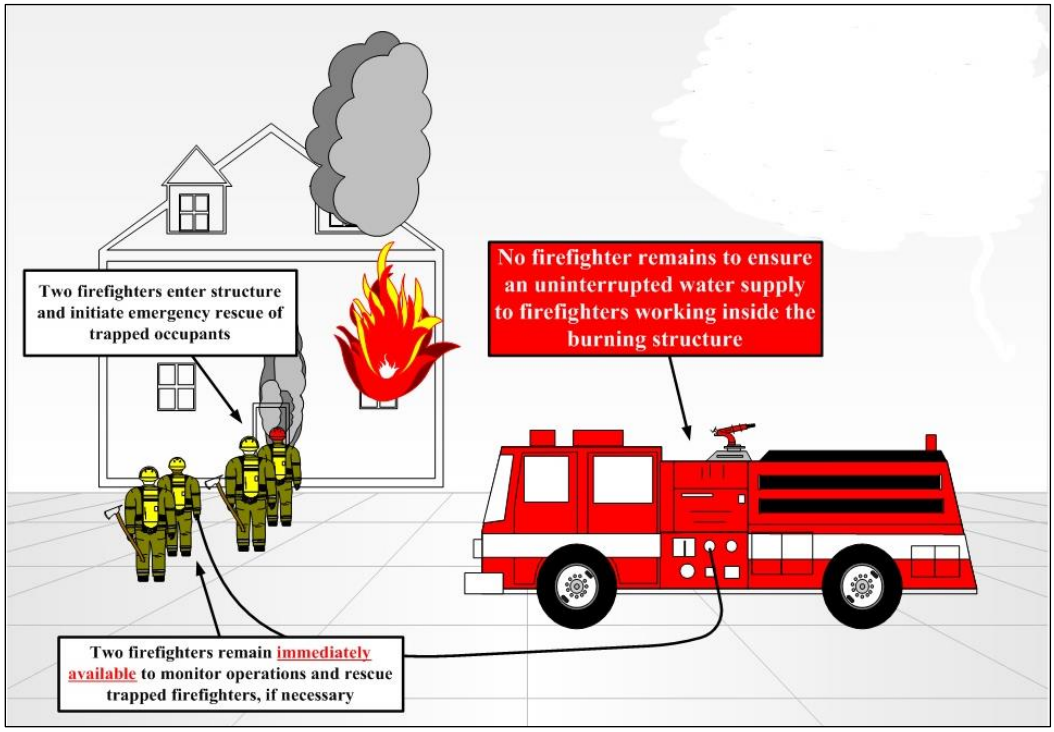
- Four-person firefighting crews were able to complete 22 essential firefighting and rescue tasks in a typical residential structure 30 percent faster than two-person crews and 25 percent faster than three-person crews.
- The four-person crews were able to deliver water to a similar sized fire 15 percent faster than the two-person crews and 6 percent faster than three-person crews, steps that help to reduce property damage and reduce danger/risks to firefighters. The latter time represents a 34-second difference.
- Four-person crews were able to complete critical search and rescue operations 30 percent faster than two-person crews and 6 percent faster than three-person crews. The latter time represents a 23-second difference. The "rescue time" difference from a four-person to a three-person crew is only seven seconds.

When considering critical tasking for the deployment of an ERF, the City and Town of Canandaigua will need to consider both their own resources, as well as the potential availability of mutual aid from surrounding communities. It is also important to note that the impact of crew size as it relates to high-risk categories is greater than its low-risk implications and should be considered when staffing units that cover a greater amount of risk.

There is no New York State or federal requirement that specifies staffing levels on fire apparatus. The closest thing that approaches a requirement for staffing levels is the OSHA 29 CFR 1910.134 standard, often referred to as the ***"Two-in/Two-out"*** guideline. This standard, which is a safety mandate that has application to municipal firefighting, requires the use of four personnel (two inside the structure and two outside the structure) when conducting interior firefighting activities in a hazardous work environment (that is, an environment that is immediately dangerous to life or health, or IDLH). It is important to note that the potential for an IDLH atmosphere to exist is not just limited to structure fires. They can exist on natural gas leaks, carbon monoxide incidents, confined space emergencies, chemical spills, and even automatic fire alarm activations where there is an actual fire in progress.

Figure 3-9 on the next page illustrates one example of how this standard is intended to be implemented.

FIGURE 3-9: OSHA "Two-in/Two-out" Rule Illustrated



The OSHA requirement has two key provisions that allow considerable flexibility regarding staffing:

- One provision specifies that the four personnel who engage in interior firefighting are required at the incident (assembled) and are not a staffing requirement for the individual responding unit.
- The second provision is that an exception is provided when crews are performing rescue operations where there is the **potential** for serious injury or death of the occupants. In this case the standard allows the entry of two personnel to conduct the rescue activity without two firefighters outside immediately available to monitor operations and rescue trapped firefighters, if necessary.

In addition, the 2018 edition of NFPA 1500, *Standard on Fire Department Occupational Safety, Health, and Wellness*, section 8.8.2, states: "In the initial stages of an incident where only one crew is operating in the hazardous area at a working structure fire, a minimum of four individuals shall be required, consisting of two individuals working as a crew in the hazardous area and two individuals present outside this hazardous area available for assistance or rescue at emergency operations where entry into the danger area required." This standard also stipulates the utilization of a stand-by crew member assigned another task (i.e., apparatus operator) is allowable so long as abandoning his/her task does not jeopardize the operating crews.

As with the OSHA standard, NFPA 1500 does support entry into a hazardous area with less than four personnel assembled if initial attack personnel find an imminent life-threatening situation where the immediate action could prevent loss of life or serious injury.

The Center for Public Safety Excellence (CPSE) has also established benchmarks regarding staffing and deployment. CPSE sets standards for agencies seeking and achieving accreditation through the Commission on Fire Accreditation International (CFAI). CFAI uses standards set forth

in the *Community Risk Assessment Manual: Standards of Cover*, 6th edition, to provide guidance in staffing and deployment to agencies desiring accreditation through Core Competencies.

Core Competency 2C.4 requires that the agency conduct a critical task analysis of each risk category and risk class to determine the first due and effective response force capabilities, and to have a process in place to validate and document the results. The process considers the number of personnel needed to perform the necessary emergency scene operations. Completion of the process also helps to identify any gaps in the agency's emergency scene practices.

Ultimately, overall on-duty fire department staffing is a local government decision. It is also important to note that the OSHA standard (and NFPA 1500/1710/1720) specifically references "interior firefighting." Firefighting activities that are performed from the exterior of the building are not regulated by this portion of the OSHA standard. However, **in the end, the ability to assemble adequate personnel, along with appropriate apparatus to the scene of a structure fire, is critical to operational success and firefighter safety.**

City of Canandaigua Fire

The CFD is comprised of:

- 1 – Fire Chief.
- 4 – Captains.
- 5 – Firefighters.
- 5 – Part-time Firefighters.
- 7 – Volunteer Firefighters (4 interior qualified).

This equates to a total of 22 personnel, 18 of whom are certified interior firefighters. Eight of the full-time personnel work a rotating shift schedule to provide around-the-clock coverage. One of them is a "floater" who does not have an assigned shift, rather he "floats" from shift to shift to fill in for vacancies created by other personnel on leave. If there are no personnel scheduled off, the floater is utilized as needed to supplement the on-duty staffing. The Fire Chief works a regular Monday to Friday daytime work schedule. All the career personnel except for the Fire Chief are represented by Local 2098 of the International Association of Firefighters.

At one time the CFD had 15 career personnel and staffed three or four personnel per shift. In 2010, due to fiscal constraints, the number of career personnel was reduced from 15 to six through layoffs. The number was later restored to the current nine (not counting the Fire Chief).

The department's career personnel work a rotating four-platoon system comprised of 24 hours on duty followed by 72 hours off duty. This averages out to a 42-hour work week. Because NY law and the current collective bargaining agreement specify a 40 hour work week, personnel are paid overtime for hours worked above this number. Some variation of the four-platoon work schedule is most common for fire departments located in the northeastern part of the United States, even in smaller communities such as Canandaigua. In most of these states, the four platoon, 42-hour work week has been established through the collective bargaining process and is subject to negotiation. However, as of January 1, 1974, New York Consolidated Law Service, Unconsolidated Laws, Chapter 143-A, § 2 (NY CLS Unconsol, CH. 143-A, § 2) Maximum Hours of labor of certain municipal and fire district firemen states that "…*no fireman shall be required to work more than an average of forty hours per week,…*". This leaves the city with few options for fire department shift scheduling including the ability to shift to the more common three-platoon, 56-hour work week schedule utilized in many regions of the county.

The part-time personnel are utilized primarily to fill in for shift vacancies created by full-time personnel on leave. Most of them work as full-time firefighters in other area fire departments, so their availability is limited. The Fire Chief informed CPSM that in the seven months he had been on the job he had yet to meet two of the part-time personnel. As a result, their availability is going to be limited, particularly for coming into work to assist with unscheduled events such as fires. The part-time personnel fall under the auspices of the state civil service regulations and system the same as their full-time counterparts. However, personnel who are occupying a roster spot without contributing to the department and its operations (or training) are providing no benefit to the city. The city should contact the current part-time personnel, particularly those who have not taken any shifts in over six months, to discuss their continued employment. Looking ahead, the city should consider establishing appropriate and reasonable work standards for their part-time personnel as permitted by civil service regulations.

Normal staffing of the CFD is two personnel on duty 24/7. One of these personnel is deployed from Station 1, while the other is deployed from Station 2. Both personnel respond from their respective stations with their assigned apparatus (driver only) to all incidents. The city's current contract with the Town of Canandaigua requires that Station 2 be staffed 24/7.

The practice of staffing each fire station with a single firefighter, who together with the single firefighter at the other station, often comprise the extent of the initial firefighting response force. This has a negative impact on initial emergency operations, presents a false sense of security regarding the level of fire protection available, and compromises firefighter safety. There are numerous reasons why this staffing model is not recommended. Among them are:

- In the station, before an incident is even dispatched, a single firefighter is at risk should they fall and get injured, suffer a medical emergency, or be confronted by an intruder.
- The primary duty of these personnel is to drive and operate the apparatus. On actual fire incidents the role of pump operator is a critical task necessary for effective and safe operations, and requires a dedicated person to properly handle the mission tasks. However, since there is often no one else responding initially except their partner from the other station, they must often perform many of those other critical tasks as well as stretching and starting to operate hose lines, forcible entry, and most importantly, search and rescue of potentially trapped victims.
- There have been two incidents in the past several years where the single firefighter arrived on the scene of an actual fire incident with civilians reported to be trapped. In both instances, the firefighter was forced to enter the structure alone and without a hose line, which is an extremely dangerous mixture, to perform search and rescue operations. In both cases the victims were located and removed successfully, but in one instance the size of the victim severely challenged the physical capabilities of the lone rescuer. Either of these incidents could very easily have had a different outcome for either the victims and/or the firefighter.
- Crew integrity and accountability are non-existent.
- One of the two on-duty firefighters holds the rank of Captain, which is a supervisory officer position. As such, his job is to provide direction to the crew during response, perform a size-up of the incident upon arrival, establish initial command of the incident until relieved by a higher-ranking officer, determine incident priorities along with initial strategies and tactics, and provide overall scene coordination including safety. However, under the current staffing model, the Captain is in effect, just a higher paid apparatus driver. They do not exert direct supervision over anyone and depending upon the situation encountered may not be able to perform any of their own critical incident management tasks.
- A single firefighter has virtually no ability to mount any type of an effective fire suppression operation, nor to do so safely.

- Responding multiple apparatus on incidents that could be handled with a single unit with an appropriate crew unnecessarily increases wear and tear on the vehicles and increases the potential for an accident involving responding apparatus.

CPSM was also informed that there is a requirement that Station 2 must be staffed as part of a 1998 decision on a construction variance appeal related to the Uniform Fire Prevention and Building Code, which was filed by Tenneco Packaging regarding the construction of a 792,000 square-foot facility at 2484 Rochester Rd. in the Town of Canandaigua. In that decision, dated October 1, 1998, item #6, under Findings of Fact, states that there is a manned fire station within one-quarter mile of the building. However, there is no stipulation in the decision that the station must be staffed and there is no legal obligation on either the town or city to do so, other than the current fire services agreement between the two. **A single firefighter responding from Station 2 will have zero impact on any incident, even a small one, occurring in a 792,000 square-foot facility.**

Recommendations:

- The City of Canandaigua and Town of Canandaigua should renegotiate their fire services agreement and delete the stipulation that Station 2 be staffed 24/7. (Recommendation No. 1.)
- The Canandaigua Fire Department should deploy both on-duty firefighters on a single unit, responding from Station 1. (Recommendation No. 2.)

Figure 3-10 illustrates the benchmark 240-seconds (four-minutes) travel time bleeds comparatively for Stations 1 and 2. On the left, if only Station 1 were staffed, the entire city would be within the recommended travel time along with some areas of the town, primarily the old Box 500 southeast of the city. Conversely, most of the city's fire service response area in the town, north of the city, would fall outside of the 240-second travel time mark. However, with just 92 total incidents in the town area in 2016 representing about 6.4 percent of total CFD responses, even if none of them achieved a 240-seconds on-scene response, the department would still be exceeding the 90 percent on-scene time recommended benchmark.

On the right, if Station 2 were staffed rather than Station 1, the portions of the town fire response area that fall within the 240-seconds travel time mark would still do so. However, the southern one-third of the city would fall outside the time benchmark.

FIGURE 3-10: Comparative 240-seconds Travel Times from Stations 1 and 2

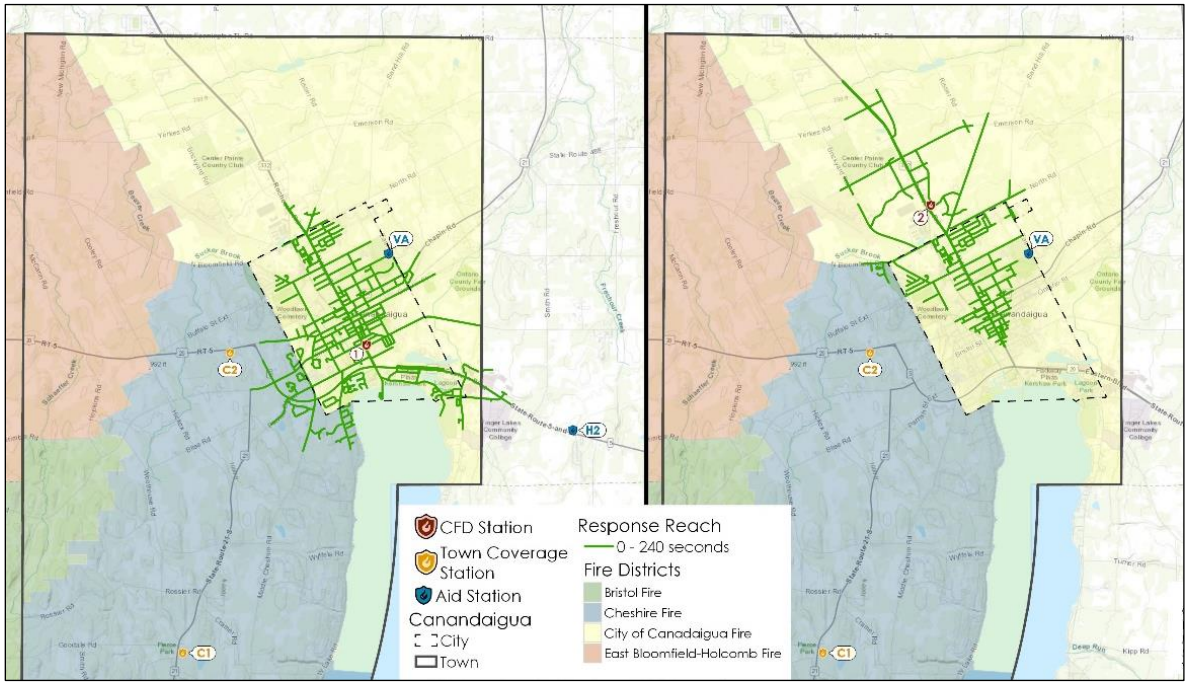
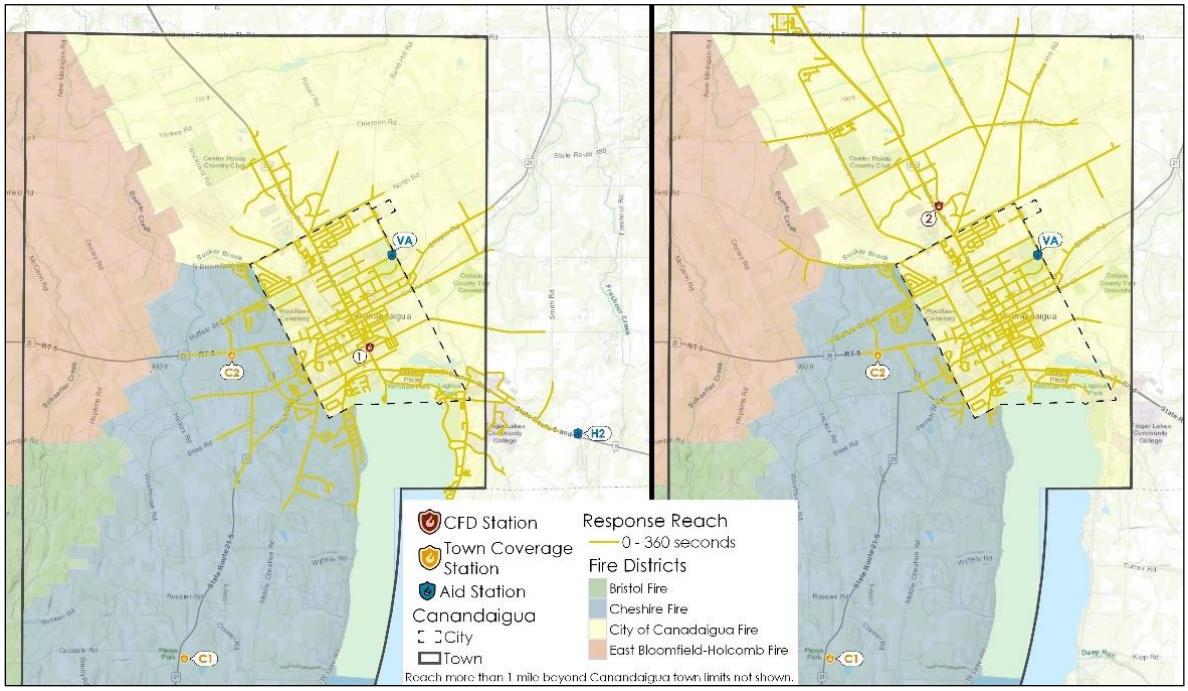


Figure 3-11 compares Station 1 and 2 utilizing a 360-seconds (six-minutes) travel time. On the left, from Station 1 the area of the town which is within the current 240-seconds travel time falls within the 360-seconds time, along with areas in all other directions around the city. On the right, if only Station 2 is staffed, the entire city falls within the 360-seconds travel time along with most of the town north of the city.

FIGURE 3-11: Comparative 360-seconds Travel Times from Stations 1 and 2



Even with both on-duty personnel deployed from a single location, the CFD will normally be able to initially provide only 50 percent of the necessary staffing to comply with the requirements of the OSHA "Two-in/Two-out" regulation. This fact will limit the department's initial on-scene strategic and tactical options at many incidents and require more defensive, rather than offensive operations. **However, this staffing model is more efficient and effective than a single firefighter staffing and responding from each of two stations.**

The lack of adequate on scene staffing is a frequent finding in National Institute for Occupational Safety and Health (NIOSH) firefighter fatality investigation reports. The final NIOSH report on the death of a firefighter in Sedgewick County, Kansas, in the early 1990s cited a number of "preventable events" that contributed to the firefighter's death, not the least of which was an inadequate number of personnel on the initial response. The report went on to say, "A two-firefighter engine is, at minimum, 50 percent under-staffed and increases the work effort of the two firefighters by a factor of 3." Almost every NIOSH line-of-duty death report recommends that fire departments "provide adequate firefighter staffing to ensure safe operating conditions."

The CFD's career firefighters do get recalled for duty for fires, if they are available. When this occurs, they receive pay at their overtime rate with no minimum amount of time specified. The city and union are currently in contract negotiations that may result in revisions to that provision. Previously, if they returned to duty for a fire that ended up being minor in nature they were compensated a flat $25.00 for the first hour and time and half overtime for anything longer.

The part-time firefighters are primarily utilized to provide in-station staffing when necessary to fill vacancies created by personnel on various types of leave. They can also respond to significant incidents when the full-time personnel are recalled to duty. **Only two of the five current part-timers, however, are reported to be active with the CFD.** The need to determine their long term status and for the city to consider the establishment of work standards for part time personnel has previously been discussed.

Like many communities throughout New York, the CFD has a long and proud tradition of volunteer fire companies serving the community. Under current practice the volunteer personnel are dispatched to assist for structure fires and other significant incidents. However, they are not permitted to drive any apparatus except for the squad. The volunteer personnel are also reportedly not permitted to sleep overnight in the fire stations for liability reasons.

At one time, three different volunteer fire companies served the city. Today, that number has been reduced to two, and one of these companies has just a single fire-police member. The other existing company has just seven active members, four of whom are interior qualified firefighters. This is not an indictment of the volunteer system, nor is it a situation that is limited to Canandaigua, upstate New York, or even the northeast; the sagging numbers of volunteers has been occurring across the country for many years.

In March 2004, the International Association of Fire Chiefs (IAFC) issued a report by the Volunteer and Combination Officers Section (VCOS), entitled *A Call for Action: Preserving and Improving the Future of the Volunteer Fire Service*. Among other things, the report highlighted the fact that the ranks of volunteer/call firefighters nationwide are declining due, at least in part, to an increasing demand for services. A 2016 study in neighboring Pennsylvania, which also has a long tradition of volunteer fire departments, estimated that over the past four decades the number of volunteer firefighters in Pennsylvania declined from around 300,000 in 1976 to about 50,000 in 2016. There are also various other factors that have led to the reduction in the number of volunteer and on-call firefighters in communities such as Canandaigua. Among them is that the demographics of many communities today do not support a sufficient number of the type of

person who is attracted to the fire service in the 21st century, that is, someone with time to dedicate to public service or a young person who wants to make a career of it.

The City of Canandaigua Fire Department has made intermittent efforts over the years to recruit new volunteer firefighters. These efforts have been met with limited success. CPSM was informed by numerous stakeholders that one of the major obstacles was the previous fire department leadership. There has also been the occasional conflict between the career and volunteer firefighters. Although this is not uncommon in combination organizations, it suggests the need for each contingent to understand the value the other brings to the department, and an enhanced level of integration and joint training between the two. Looking forward, it is essential that career and on-call staff continue to be more fully integrated, train together, and maintain positive relationships.

The city does provide information on how to become a fire department volunteer on the fire department website. There is no prominent banner on either the main city or fire department home pages.

Like most of the other departments in the area, the CFD participates in the RecruitNY recruitment program sponsored by the Fireman's Association of the State of New York. This program, which is built around an annual open house event in April at fire companies across the state, provides the foundation of the program. Unfortunately, most of the fire company representatives from the Canandaigua area that we interviewed had experienced little, if any, success from this initiative. In fact, several were considering not participating in 2018 and beyond.

The restoration of an active and vibrant volunteer component to the CFD will require that current efforts be expanded. Over the next five years, a significant effort will need to be put forth regarding the recruitment and retention of volunteer personnel. Although Canandaigua is not alone in dealing with a reduction in volunteer staff, it is essential that addressing this situation become a primary focus of the fire department and the city. In fact, to attain success will require the development of new strategies and a monetary investment to retain a viable volunteer or on-call component of the department.

Once an individual becomes interested in becoming a volunteer firefighter, they must achieve a level of ever-increasing specialized skills that requires a significant commitment of personal time. Often, exit interviews reveal that the training commitment alone is daunting and one of the primary reasons that volunteer personnel resign. To become a certified firefighter takes several hundred hours plus an additional 200 hours to become a state-certified emergency medical technician. Then there are the dozens of hours annually spent on maintaining firefighter and EMT skills and certifications. The average citizen does not want to spend a great deal of personal time dedicated to the fire service, especially when family commitments take priority. In addition, many volunteer firefighters in departments that have a career force handling the day-to-day emergencies find it hard to stay motivated if they are not being utilized frequently. Other reasons for waning volunteer participation include:

- An overall reduction in leisure time.
- Employment obligations and the common need to maintain more than one job.
- The virtual elimination of an employer's understanding and flexibility relating to this form of community service.
- Generational differences and increased family demands.

It is easy to believe that increasing the number of volunteer firefighters can cure staffing problems. Unfortunately, in 2018, this is a difficult solution to achieve and many organizations are increasing career staff to ensure that the service level expected by the community is delivered.

In Canandaigua, the president of the Erina Hose Company has taken an active role on attempting to recruit new members into the department. One of the things that he has done is attempt to get the fire department more involved in community events and with local charities such as the Fire and Ice Festival and Polar Bear Plunge. In March 2018, he prepared an analysis of the challenges that fire department's today face when trying to recruit, and perhaps more importantly retain, new members. His analysis also identified a long, and excellent, list of potential incentives or motivators that could be utilized to attract new members into the department and retain them as long-term members. (Appendix A). CPSM commends the Erina Hose Company President for his efforts and encourages the city and fire department leadership to fully support him. However, the president also correctly notes the reality that volunteer recruitment and retention activities are very time-consuming endeavors in and of themselves.

Recommendation:

- The City of Canandaigua and Canandaigua Fire Department should provide the Erina Hose Company President with the necessary support to continue volunteer recruitment and retention efforts. This can include financial support for marketing and advertising efforts and programs to recruit new and retain existing personnel, providing staff assistance to assist with developing surveys, preparing mailings to all city residents, and other potentially labor-intensive support functions. (Recommendation No. 3.)

The federal government has a version of the SAFER (Staffing for Adequate Fire and Emergency Response) Act that pertains strictly to volunteer and on-call firefighters. It provides competitively awarded funds to municipalities to retain and recruit on-call and volunteer firefighters. The grants provide funds for college curriculum in fire science or other approved majors, for EMT and paramedic training, health insurance, physical fitness, uniforms, and other tax incentives to attract candidates to join fire departments. The bottom line, though, is that if a community's demographics will not support a volunteer firefighting force, the federal grant program will be of little assistance. However, we believe that Canandaigua can attract and support a more active volunteer staff.

The CFD also has a student firefighter program. The purpose of this program is to encourage young people who are members of other volunteer fire departments to volunteer time for the CFD in exchange for up to $2,750 per semester of tuition and other fees that are not covered by other forms of financial aid. The program currently has just two participants, one of whom is active, regularly pulling one 12-hour shift per week. Most of those who have participated in the student firefighter program do not live in Canandaigua or even Ontario County. As with the volunteer personnel, the student firefighters cannot drive the apparatus nor sleep overnight in a fire station.

Town of Canandaigua

Staffing for fire protection operations in the Town of Canandaigua is determined by the individual entities with which the town contracts for service in the various sections of the municipality. The staffing practices and concerns relative to the area of the town protected by the city fire department have been discussed in detail in the previous section.

The contract that the town has with each organization that provides fire protection to it states, "the [Fire Department], in providing the services shall use its own means and methods, which shall not be subject to control, direction, or supervision by the Town." Consequently, the town has no direct control over how these entities staff for various operations. The fire companies are required to submit an annual report to the town that includes the date, time, and nature of each fire call in their designated fire protection area, as well as each mutual aid call to other fire

protection service areas with the town fire district. Part of this report requires information on the timeliness of the response along with a description of staffing and equipment responding. However, since the contract establishes no standards of cover, or staffing benchmarks, these reports are informational only.

The Cheshire Volunteer Fire Department informed CPSM that it averages approximately 9.75 total personnel for structure fires. It did not have a breakdown between interior qualified personnel and those who can only operate outside of the building. It also did not have a breakdown of day versus night responses. For mutual aid responses, the Cheshire Fire Department responds with a minimum of three personnel on each piece of apparatus, with four being preferred. When responding with three personnel, at least two must be interior qualified.

The East Bloomfield-Holcomb Volunteer Fire Department informed CPSM that it can normally respond with eight to ten personnel during the day. It did not provide figures on how many of those personnel were interior qualified. However, it stated that it has two or three drivers and officers who are normally available for daytime responses.

The Bristol Volunteer Fire Department informed the CPSM team that it averages about nine personnel responding to each incident. The department officers interviewed indicated that response during the day was generally still good and they average about three personnel responding with each apparatus.

It is often difficult to get a good handle on the actual staffing numbers in many volunteer fire service organizations. Available personnel from the same station often varies at different times during the day, different days of the week, and sometimes even from incident to incident depending upon what the nature is (service call versus structure fire). Most members of volunteer fire companies have a primary job, other than the fire department, that often limits their availability to respond, mostly during normal business hours. Those who are often counted in the number of personnel who responded may arrive very late in the incident, or may have stood by at the station rather than actually responding to the incident. These long-held practices for awarding credit can often skew the actual number of personnel and make staffing for the volunteer companies appear better than it really is. Although no one wanted to identify those who were having problems by name, several stakeholders, both internal and external, informed CPSM that at least a few of the companies that provide protection in the Canandaigua area have difficulty getting out, particularly during the day.

When discussing staffing it must also be noted that although many of the members of the fire companies are certified firefighters, a number still are not. Personnel who are not certified as firefighters and up-to-date in their training, even though they may still arguably be able to contribute, should not be counted toward active "firefighter" numbers. They cannot be counted towards unit staffing for incidents. Depending upon their level of training (or lack thereof in some cases) they could actually be a liability to the company and the town since the fire services contracts state that the town assumes liability for the actions of the fire companies in the performance of their duties.

SECTION 4. COMMUNITY RISK ANALYSIS

The cost of providing fire protection and EMS to a community has the potential to escalate; therefore, there is a need to examine the planning processes and deployment models involved in providing services is paramount. The initial step in this planning process is determining the community's risk. Each jurisdiction decides what degree of risk is acceptable to the citizens it serves. This determination is based on criteria that have been developed to define the levels of risk (e.g., of fire) within all sections of the community.[7] To this end, a comprehensive planning approach that includes a fire risk assessment and hazard analysis is essential in determining local needs.

The term *integrated risk management* refers to a planning methodology that recognizes that citizen safety, the protection of property, and the protection of the environment from fire and related causes must include provisions for the reasonable safety of emergency responders. This means assessing the risk faced, taking preventive action, and deploying the proper resources in the right place at the right time. A fire department typically collects, organizes, and evaluates risk information about individual properties to derive a "fire risk score" for each property. The fire risk score is based on several factors, including:

- Needed fire flow if a fire were to occur.
- Probability of an occurrence based on historical events.
- The consequence of an incident in that occupancy (to both occupants and responders).
- The cumulative effect of these occupancies and their concentration in the community.

The community risk and vulnerability assessment are used to evaluate community properties and assigns an associated risk as one of low, moderate, or high/maximum risk. The NFPA *Fire Protection Handbook*[8] defines these hazards as:

High-hazard Occupancies: Schools, hospitals, nursing homes, explosive plants, refineries, high-rise buildings, and other high life safety-hazard or large fire-potential occupancies.

Medium-hazard Occupancies: Apartments, offices, and mercantile and industrial occupancies not normally requiring extensive rescue by firefighting forces.

Low-hazard Occupancies: One-, two-, or three-family dwellings and scattered small business and industrial occupancies.

In addition to identifying occupancies of various hazard levels, a hazard analysis should include critical facilities, such as police and fire stations, public works facilities, hospitals and shelters, 911 emergency call centers, the emergency operations center, and other critical facilities that are vital to service delivery. No fire departments serving the city or town have a comprehensive target hazard listing or plan book.

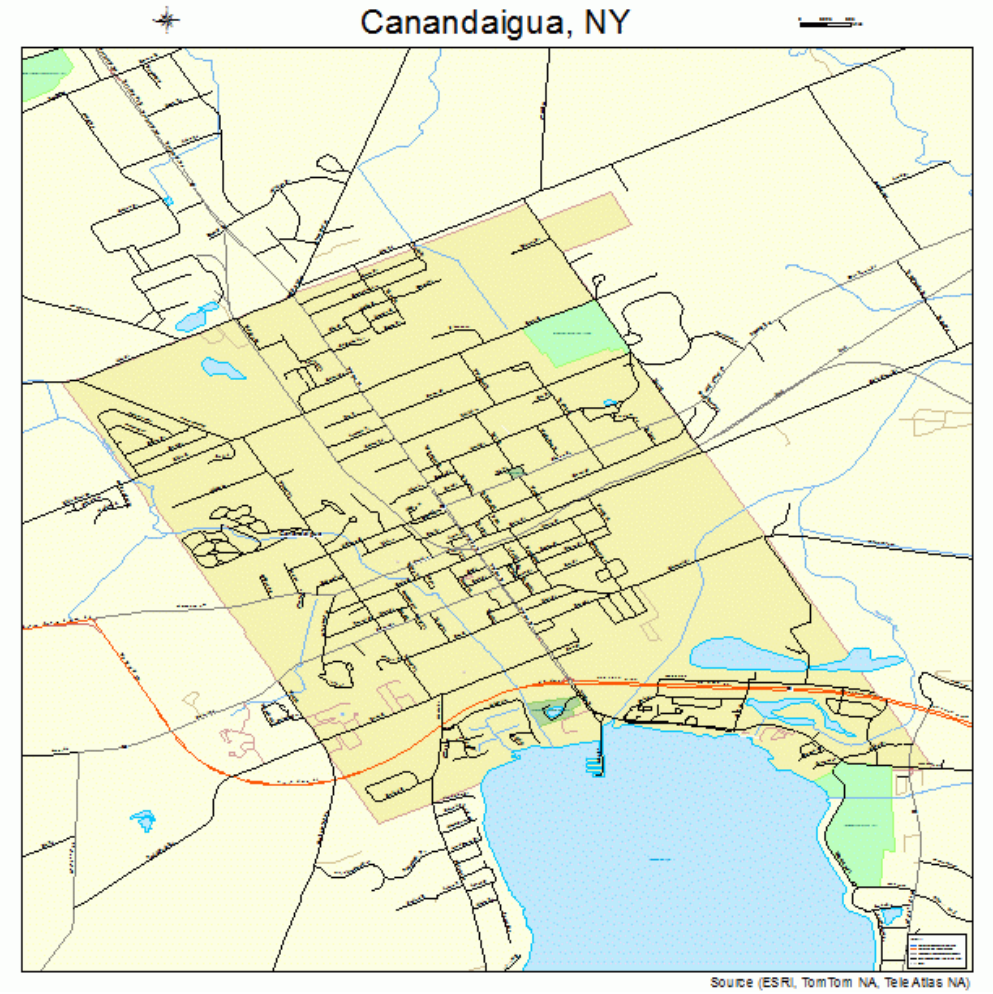
The **City of Canandaigua** lies within the Town of Canandaigua in Ontario County, N.Y. The city is located on the northern end of Canandaigua Lake; it is about 24 miles southeast of Rochester and 58 miles west of Syracuse.

Canandaigua Lake is the potable water source for the city. The surface elevation is 688 feet with a maximum depth of 276 feet. Figure 4-1 illustrates the city in proximity with Canandaigua Lake.

7, Compton and Granito, *Managing Fire and Rescue Services*, 39.
8. Cote, Grant, Hall & Solomon, eds., *Fire Protection Handbook* (Quincy, MA: NFPA 2008), 12-3

The lake poses no immediate threat to the city; however, there is the risk for contiguous shoreline boating and other water emergencies involving property and people.

FIGURE 4-1: City of Canandaigua and Canandaigua Lake



A critical aspect of community risk assessment is identifying the community's distinct demographics and characteristics that impact risk as well as the vulnerability of the population and property to these risks. Census Bureau data, national fire incident reports, city planning documents, housing survey data and reports, and local hazard maps all provide invaluable information that help identify and determine the degree of risk faced by a community. According to the U.S. Census Bureau, the city's population is estimated to be 10,289 as of July 2017, which is a several percent decrease since the 2010 decennial Census count.[9]

Specific to risk, relevant City of Canandaigua data includes:

- 20.4 percent of the city's population is over 65 years of age.
- 4.8 percent of the population is under the age of 5, and 19.6 percent is under the age of 18.
- 1.0 percent are black or African-American.

9. U.S. Census Bureau, Quick Facts, https://www.census.gov/quickfacts/fact/table/canandaiguacitynewyork,US#viewtop

- 7.4 percent of persons over the age of 65 are without health insurance.
- 7.6 percent of persons under the age of 65 have a disability.
- 3.7 percent of residents are foreign born.
- 5.2 percent of residents speak a language other than English at home.
- 55.3 percent of residents are in owner-occupied housing.
- There are 5,343 housing units.
- The average per capita income is $31,326 and the median household income is $43,635.
- 16.3 percent of the population live in poverty as defined by the U.S. government.
- The population density is 2,295.4 people per square mile.[10]

The U.S. Fire Administration, through the National Fire Incident Reporting System (NFIRS), and the National Fire Protection Association (NFPA), issue annual reports on fire deaths and injuries and fire losses. Since they were initiated these annual reports have shown that the highest fire death rates are found to be among African-Americans, lower income groups, the indigent, the elderly (over 65), the very young (under 5), and those that have less formal education.

The city has some risk with the share of its population over the age of 65 (20.4 percent) and with the share of its population that is lower income (16.3 percent of the population below the poverty level).

The City of Canandaigua provides a mix of structural challenges and hazards that must be protected by its fire department; these hazards are predominately low- to medium-hazard. The greatest fire safety concern is the potential life loss in fires that occur in non-sprinklered, single- and multifamily residential dwellings during sleeping hours, which is consistent with national trends. The city has an older center core and downtown area with numerous closely spaced, abutting, and even some interconnected buildings. Many of these buildings date to the later part of the 19th and early years of the 20th century. These types of structures and areas can contribute to rapid fire spread from one building to another; this situation requires an aggressive attack to contain and control.

Buildings more than three stories in height pose a special risk in an emergency. Fire on higher floors may require the use of ladder trucks to provide an exterior standpipe to be able to deliver water into a building that does not have a system in place. For victims trapped on higher floors, a ladder truck may be their only option for escape.

Interspersed throughout this area are some newer and refurbished buildings and complexes. This includes a number of large, multifamily structures and apartment complexes. Not all of these buildings are equipped with automatic fire suppression systems, which increases the potential life hazard and fire spread concerns.

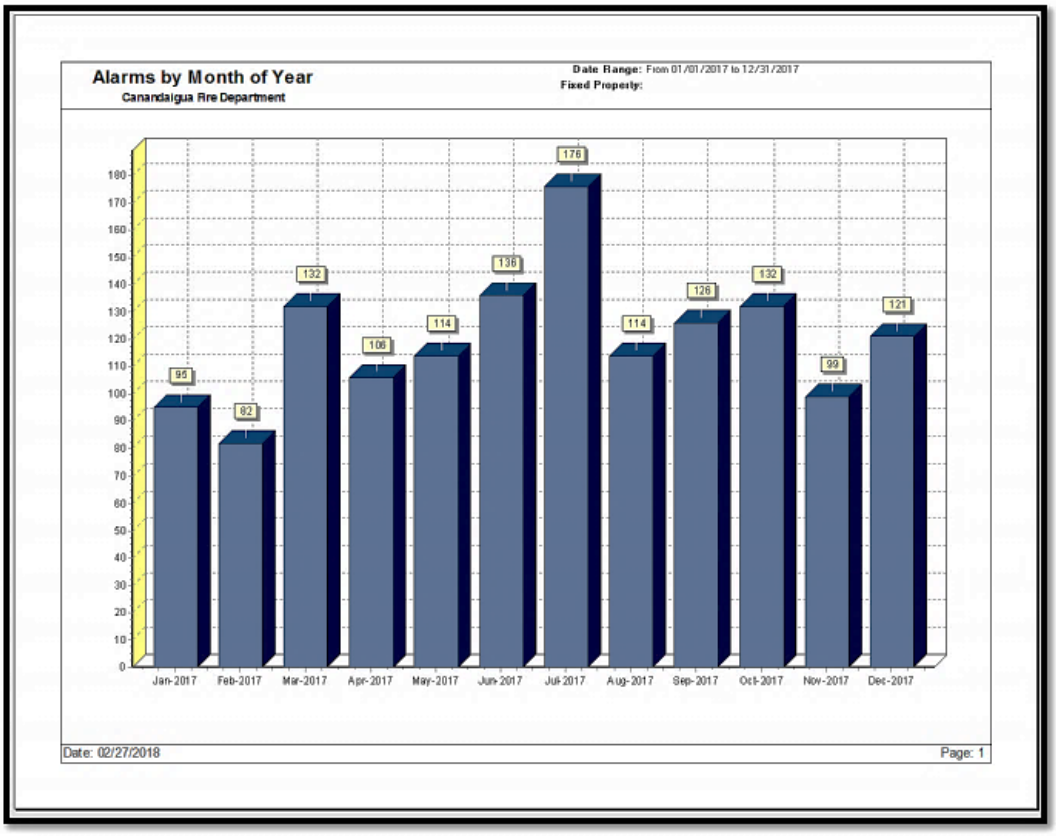
Much of the city's housing stock is older, wood frame construction of a type known as balloon frame. In this type of construction, the interior of the walls of the building are open from the basement to the attic, allowing for the rapid spread of fire within the building. Only an aggressive and well-coordinated fire attack will enable the quick extinguishment of fires in these types of structures. In many areas of the city these dwellings are built close to each other, as was the practice when they were constructed. This can allow rapid spread of fire to the buildings on either side. The limited number of newer homes in the city feature modern, lightweight

10. https://www.census.gov/quickfacts/fact/dashboard/canandaiguacitynewyork,US/AGE775216#viewtop

construction which can fail rapidly when exposed to a fire situation, resulting in an early collapse of the entire structure.

Call demand is an important part of hazard analysis. Knowing where the current calls come from, and predicting how changes to the community may affect this, are important to creating a plan that best meets the current and future needs of the community. In 2017, 1,433 calls for service were handled by the CFD. Figure 4-2 depicts the call demand for the CFD and Figure 4-3 depicts call demand for the town.

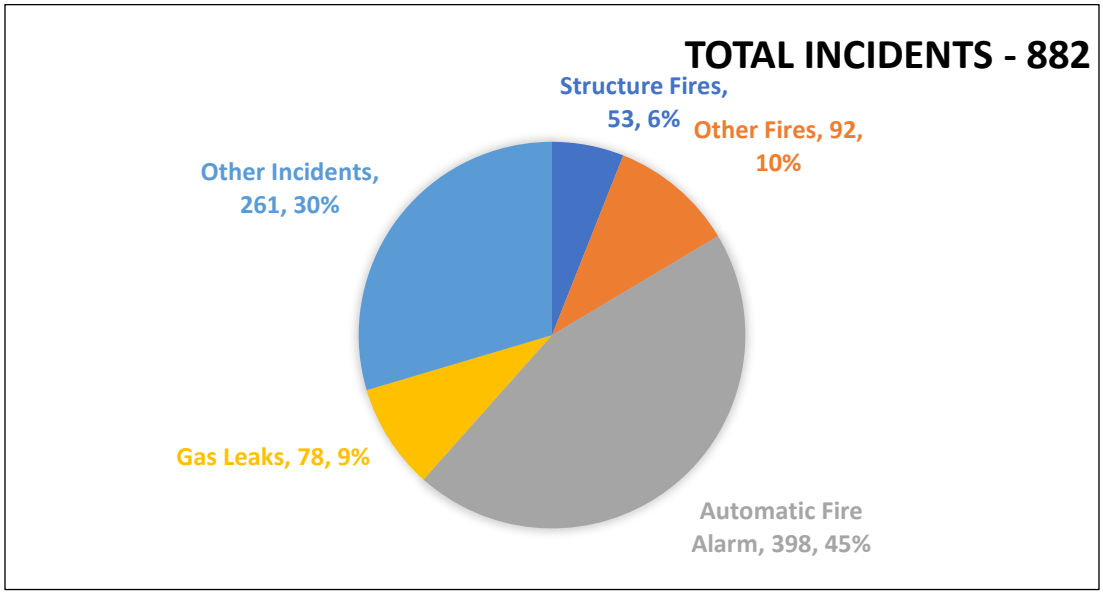
FIGURE 4-2: Canandaigua Fire Department Call Demand



A breakdown of the 2017 annualized calls for service tells us that of the 1,433 calls for service:

- 43 percent (627) were emergency medical in nature.
- 10.6 percent (152) were for smoke detectors/sprinkler activations.
- 11.6 percent (167) were miscellaneous/lines down, etc.
- 9.9 percent (143) were for service/clean-up/police/public service.
- 6.9 percent (100) were cover/good intent or canceled en route.
- 6.3 percent (91) were hazardous materials/gas leak, etc.
- 5.2 percent (75) were fire related.
- 2.8 percent (40) were weather or flood related.
- 2.6 percent (38) involved extrication/removal of victims.

FIGURE 4-3: Town of Canandaigua Call Demand



Transportation Assessment

Ground transportation routes traversing from east to west in the City of Canandaigua are: U. S. 20 in the southern part of the City; Ontario Street in the middle portion; Gibson Street slightly north of center of the city and North Street; and North Road on the northern portion.

Highway 21 in the town traverses from north to south and Highway's 364 and 332 from north to south on the east side of Canandaigua Lake. Otherwise, the normal capillary and residential roads are used to move about the town.

Figure 4-4 illustrates the main ground transportation routes for the city and the town.

FIGURE 4-4: Canandaigua Main Transportation Routes

The **Town of Canandaigua** incorporated in 1791 is in Ontario County, New York. The U.S. Census estimates the town's population at 11,130.[11] Specific to risk, relevant data includes:

- 21.3 percent of population is over 65 years of age.
- 5.1 percent of the population is under the age of 5, and 19.6 percent is under the age of 18.
- 4.6 percent of persons over the age of 65 are without health insurance.
- 9.6 percent of persons under age 65 have a disability.
- 4.3 percent of residents are foreign born.
- 5.2 percent of residents speak a language other than English at home.
- 68.5 percent of residents are in owner-occupied housing.
- There are 4,438 housing units.
- The average per capita income is $34,349 and the median household income is $61,731.
- 9.8 percent of the population live in poverty as defined by the U.S. government.
- The population density is 176.4 people per square mile.[12]
- 10.5 miles of contiguous Canandaigua Lake shoreline with the potential for accessional flooding, along with boating and other water emergencies involving property and people.

11. U.S. Census Bureau, Quick Facts, https://www.census.gov/quickfacts/fact/table/canandaiguacitynewyork,US#viewtop
12. https://www.census.gov/quickfacts/fact/dashboard/canandaiguacitynewyork,US/AGE775216#viewtop

The town has some risk with the segment of its population over the age of 65 (21.3 percent) and with its population of lower income citizens (9.8 percent of the population at or below the poverty level).

The town itself is still primarily rural but starting to develop suburban characteristics, with newer construction, including commercial buildings and a few industrial facilities, which are predominately low- to medium-hazard. Fortunately, many of these commercial and industrial structures are equipped throughout with complete automatic fire suppression (sprinkler) systems, which considerably reduce the overall risk of these structures. However, the firefighting and emergency response challenges that may confront firefighters in these types of commercial structures and occupancies are none-the-less much more complex, often require significantly more resources to mitigate, and are potentially more dangerous from a life-safety perspective to both occupants and firefighters, than those usually found in single-family dwellings. While built-in fire protection should significantly reduce the spread of fire, it may not completely extinguish the fire. Firefighters still need to complete the extinguishment and perform ventilation, overhaul, and salvage operations.

The town's housing stock structural risk ranges from older wood/balloon frame structures, to newer lightweight construction. These present all of the same challenges as those described earlier in the discussion on the city's risks. There are also several multifamily residential complexes that are being built; however, for the most part these newer occupancies are equipped with fire suppression systems.

The remainder of the town's structural risk, particularly south of the city along the west side of the lake, is comprised of more widely spaced single-family dwellings. Many of the newer homes being built in this area are not only built utilizing lightweight construction that is prone to rapid spread of fire and early collapse; they are also much larger than a typical single-family home, often consisting of large square footages of 4,000 square feet and up. Fires in these types of homes require a larger commitment of resources including firefighters, apparatus, and water, to successfully effect fire extinguishment.

Rural communities that do not have a municipal, pressurized water supply must supply their needs from other sources. This is the situation with significant areas of the town into which the municipal water supply system has not been extended. In these areas the fire department must often utilize water tankers/tenders to carry or shuttle the needed water supply from the source to the incident scene.

In addition, in communities without staffed fire stations, there is an inherent delay in the response to a building fire. This delay is due to the fire department members having to respond to the station from wherever they are when an alarm is received, to staff and respond with the apparatus. This inherent delay allows the fire to increase in size before the arrival of the fire department. This situation can exacerbate the need for an adequate and sustainable water supply.

The Finger Lakes Railway originates in Syracuse, New York, and terminates in the Town of Canandaigua at the Pactiv Corporation. The railway has four junctions or stops in Ontario County. Commodities hauled include steel, scrap metals, pulpboard, scrap paper, canned goods, sand, chemicals, salt, aggregates, grain, fertilizers, plastic, corn syrup, clay, soda ash, lumber, and building materials like shingles, roofing, panel products, and pipe.[13] ***These represent moderate to potentially high-risk, dependent on the consist mix.***

13. http://www.fingerlakesrail.com/freight.html

Canandaigua Airport, located just north of the city, covers an area of 46 acres at an elevation of 814 feet above mean sea level. It has one runway designated 13/31 with an asphalt surface measuring 5,500 by 100 feet.

Canandaigua Airport is a relief airport. A relief airport is an airport that is built or designated to provide relief or additional capacity to an area when the primary commercial airport(s) reach capacity. In some cases, a relief airport is an existing one that is designated to handle a specific class of aircraft such as general aviation.[14] ***There are approximately 30,000 gallons of Jet A and Av Gas fuels stored at the airport, representing a risk.***

The following aircraft are based at the airport:

- Total aircraft based on the field: 57.
  - Single engine airplanes: 52.
  - Multi-engine airplanes: 2.
  - Ultralights: 3.
- Two air ambulances also operate from this airport (Mercy Flight Central).

Hazardous Materials and Other Major Hazards

Hazardous materials from fixed facilities and transportation incidents pose possible threats. The Finger Lakes Railway, which runs northeast to west through the northern part of Ontario County, and parallel to Main Street in the city, carries chemicals to Pactiv Corporation. In addition to obvious threats of train derailments, BLEVE's (Boiling Liquid Expanding Vapor Explosions), etc., five-minute long trains also present an emergency vehicle access problem to one of the largest target hazards in the city, Pactiv Corporation.

Ontario County Al-hazard Mitigation Plan Identifies Hazards and Risks

The City and Town of Canandaigua are located in the Central Planning Region of Ontario County. Table 4-1 on the next page depicts the hazards identified that have the potential to affect the Central Planning Region and the city.

14. https://www.airnav.com/airport/KIUA#stats

TABLE 4-1: Ontario County All-hazard Mitigation Hazards

List of Top Rated Hazard Types		
Hazard	Rated Hazards High (H)	Rated Hazards Moderately High (MH)
Flood	Northwest	County, Central, East, South
Ice Storm	South	County, Northwest, Central, East
Terrorism		County, Northwest, Central, East, South
Hazmat (In Transit)	Northwest	County, East
Severe Storms		County, Northwest, East, South
Explosion	County	Northwest, East
Winter Storm (Severe)		County, Northwest, East
Transportation Accident		County, Northwest, Central
Tornado		County, Northwest
Fire		Northwest, Central
Hazmat (Fixed Site)		Northwest, East
Extreme Temperatures		Northwest, East
Water Supply Contamination		Central, East
Utility Failure		East, South
Agri-Terrorism		Northwest
Oil Spill		Central
Wildfire		Northwest
Epidemic		Central
Earthquake		East

This area does not have significant navigational waterways for which to move large quantities of hazardous materials.

Wildland fire threat is minor to moderate considering the fuel load and type of ground cover. Wildland-urban interface is always a concern based on fuel location and proximity to structures and ambient conditions.

Summary and Observations:

- The structural risk for the city and town is for the most part low- to medium-risk.
- The city and town have some risk with their population of people over the age of 65 and those who live at or below the poverty level.
- Ground transportation routes and risks are normal to those cities and towns that are similar to Canandaigua.
- A short-line railroad line traverses both the city and the town and carries varying commodities and hazardous materials.
- Wildland fire threat is minor to moderate.
- The Ontario County All-hazards Mitigation Plan identifies only one high hazard for the city and town (explosion). Other hazards specific to the city and town according to the plan are moderately high and include flooding, ice storms, terrorism, transportation Haz-Mat incidents, severe storms, winter storms, transportation accidents, tornado, fire, water supply contamination, oil spill, and epidemic.
- Canandaigua Airport presents a risk of an airplane accident and fuel spill/fire.
- Canandaigua Lake presents a risk of boating and other water related emergencies throughout the year.

SECTION 5. OPERATIONAL RESPONSE APPROACHES

The city and town deploy their fire services with a diverse mix of operational challenges that each must address. The city, with a population density of 2,258 residents per square mile, is an urban community. The city is typical of many older northeastern urban areas that have numerous closely constructed structures in both the commercial and residential areas. Throughout the city are an assortment of commercial, industrial, and residential buildings including a number of multifamily occupancies. The population density of the city is 91.3 percent higher than that of the town.

The town, with an overall population density of 196.5 residents per square mile, is considered to be a rural community. However, with the current as well as projected growth in the town the area is transitioning from rural to more suburban in nature. In addition, the town is host to a growing number of large very lakefront homes that present their own unique operational challenges in a fire situation, as they can be compared to commercial structures by virtue of size, mass, and fire load.

Regardless of the characteristics of a community, if a fire grows to an area in excess of 2,000 square feet, or extends beyond the building of origin, it is certain that additional personnel and equipment will be needed because initial response personnel will be taxed beyond their available resources. From this perspective it is critical that all the various fire protection entities respond quickly and initiate extinguishment efforts as rapidly as possible after notification of an incident. It is, however, difficult to determine in every case the effectiveness of the initial response in limiting the fire spread and fire damage. Many variables will impact these outcomes, including:

- The time of detection, notification, and ultimately response of fire units.
- The age and type of construction of the structure.
- The presence of any built-in protection (automatic fire sprinklers) or fire detection systems.
- The contents stored in the structure and its flammability.
- The presence of any flammable liquids, explosives, or compressed gas canisters.
- Weather conditions and the ready availability of sufficient water for extinguishment.

Subsequently, in those situations in which there are extended delays in the extinguishment effort or the fire has progressed sufficiently upon arrival of fire units, there is actually very little that can be done to limit the extent of damage to the entire structure and its contents. In these situations, suppression efforts may need to focus on the protection of nearby or adjacent structures (exterior exposures) with the goal being to limit the spread of the fire beyond the building of origin, and sometimes the exposed building. This is often termed ***protecting exposures***. When the extent of damage is extensive, and the building becomes unstable, firefighting tactics typically move to what is called a ***defensive attack***, or one in which hose lines and more importantly personnel are on the outside of the structure and their focus is to merely discharge large volumes of water until the fire goes out. In these situations, the ability to enter the building is very limited and if victims are trapped in the structure, there are very few safe options for making entry.

Today's fire service is actively debating the options of interior firefighting vs exterior firefighting. These terms are self-descriptive in that an ***interior fire attack*** is one in which firefighters enter a burning building in an attempt to find the seat of the fire and from this interior position extinguish the fire with limited amounts of water. An ***exterior fire attack***, also sometimes referred to as a ***transitional attack***, is a tactic in which firefighters initially discharge water from the exterior of the building, either through a window or door and knock down the fire before entry in the building is made. The concept is to introduce larger volumes of water initially from the outside of the building, cool the interior temperatures, and reduce the intensity of the fire before firefighters enter the building. A transitional attack is most applicable in smaller structures, typically single family, one-story detached units which are smaller than approximately 2,500 square feet in total floor area. For fires in larger structures (including the large lakefront homes in the town), the defensive type, exterior attacks generally involve the use of master streams capable of delivering large volumes of water for an extended period of time.

There are a number of factors that have fueled this debate. The first and most critical of these factors is the staffing level. Since fire departments may operate with minimal levels of staffing, or face staffing shortages at certain times during the day, and this staff may be arriving at the scene from greater distances, there is little option for a single fire unit staffed with less than four personnel (or multiple units staffed with just a single firefighter) but to conduct an exterior attack.

When using an exterior attack, the requirement of having the four persons assembled on-scene, prior to making entry, as discussed in other sections of this report, would not apply. Recent studies by UL have evaluated the effectiveness of interior vs. exterior attacks in certain simulated fire environments. These studies have found the exterior attack to be equally effective in these simulations.[15] This debate is deep-seated in the fire service and traditional tactical measures have always proposed an interior fire attack, specifically when there is a possibility that victims may be present in the burning structure. The long-held belief in opposition to an exterior attack is that this approach may actually push the fire into areas that are not burning or where victims may be located. The counterpoint supporting the exterior attack centers on firefighter safety.

The exterior attack limits the firefighter from making entry into those super-heated structures that may be susceptible to collapse. From CPSM's perspective, there is at least some likelihood that a seriously understaffed crew will encounter a significant and rapidly developing fire situation. It is prudent that therefore that the CFD and the town fire companies build at least a component of their training and operating procedures around the tactical concept of the exterior fire attack when the situation warrants such an approach.

Recommendations:

- The Canandaigua Fire Department, as well as the Cheshire, Bristol, and East Bloomfield Fire Departments, should build at least a portion of their training regimens and tactical strategies around the exterior or transitional attack for when the fire scenario and the number of available units/responding personnel warrants this approach. (Recommendation No. 4.)
- In acknowledgement of the fact that the Canandaigua Fire Department operates in a minimal staffing mode and recognizing the potential for rapid fire spread particularly in the more densely developed areas of the city, the CFD should equip all its apparatus with the appropriate appliances and hose as described herein. It should develop standardized tactical operations that will enable arriving crews to quickly deploy high-volume fire flows of 1,200 to 1,500 gallons per minute (if the water supply will permit this), utilizing multiple hose lines, appliances, and master stream devices. This flow should be able to be developed within

15. "Innovating Fire Attack Tactics", U.L.COM/News Science, Summer 2013.

four to five minutes after arrival of an apparatus staffed with two or three personnel. (Recommendation No. 5.)

As currently staffed, the Canandaigua Fire Department has virtually no chance of handling even fires in single-family dwellings that are limited in size and intensity without the extensive use of automatic and mutual aid, and the recall of off-duty personnel. In addition, the department is challenged to initiate an interior attack on a fire unless there are potential rescues, until additional automatic of mutual aid resources arrive on scene. Likewise, the ability of the volunteer fire companies that protect the town may face the same challenges depending upon the time of day, and how quickly their automatic and mutual aid partners can arrive on scene to assist.

All fire and EMS resources in Ontario County are dispatched through the county dispatch center which operates under the auspices of the Ontario County Sheriff's Department. The county does not dictate resources or assignments that each organization includes on their responses. Each company makes those determinations individually. The only established standard for what is known as the Mutual Aid Box Alarm System (MABAS) is that when a water tender task force is requested it includes four water tenders and one engine.

RESPONSE PROTOCOLS

City of Canandaigua

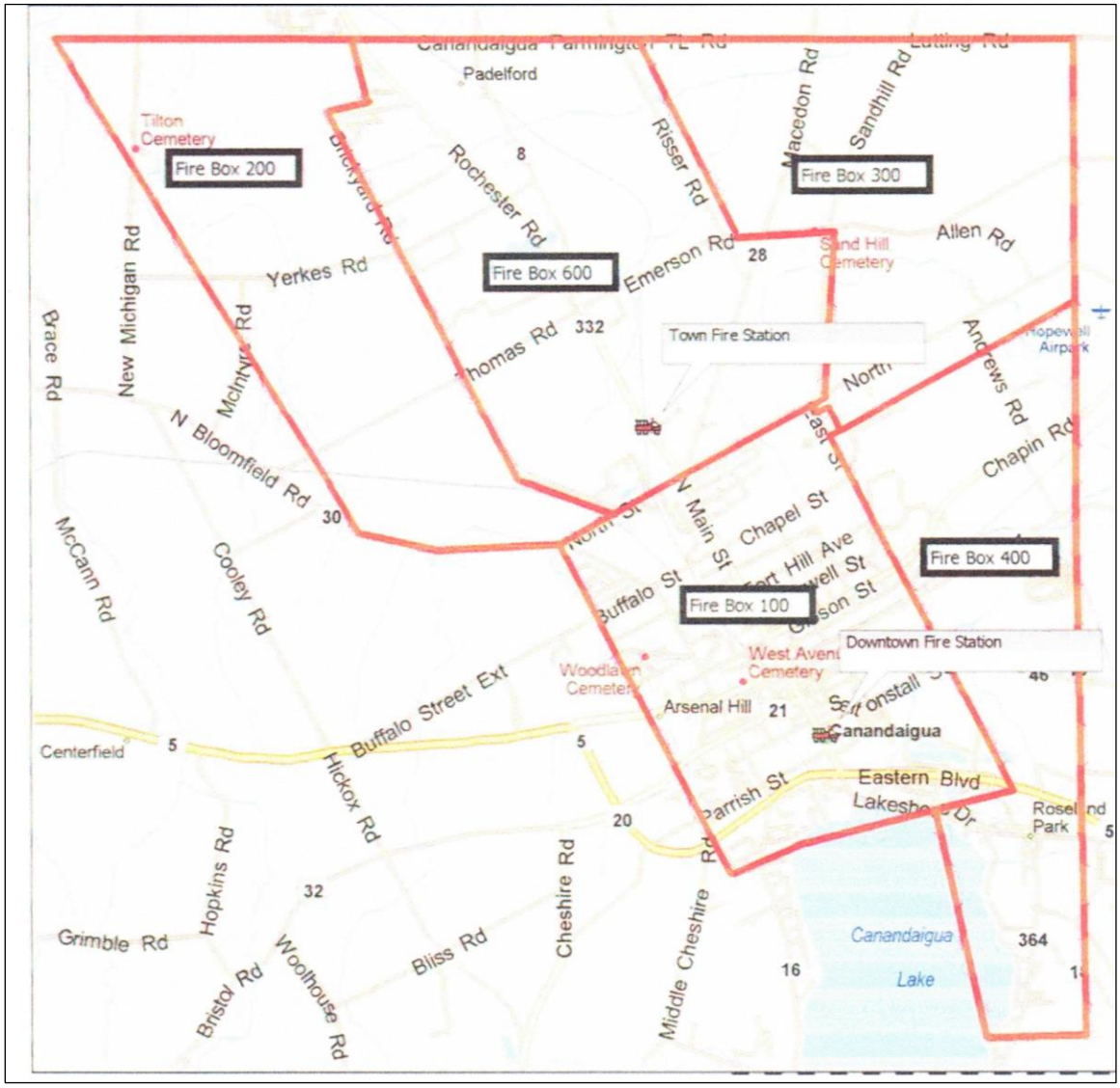
The City of Canandaigua uses a box alarm system that divides its district into five different response "boxes."

- Box 100 – City of Canandaigua.
- Box 200 – Town of Canandaigua, northwest of the city.
- Box 300 – Town of Canandaigua, northeast of the city.
- Box 400 – Town of Canandaigua, east and southeast of the city.
- Box 600 - Town of Canandaigua, north-northwest of the city.

There is currently no Box 500. This area was previously the area of the Town of Canandaigua west of the city. During a previous round of contract negotiations for fire protection in the town it was determined that responsibility for fire protection in this area would be transferred from the city to the Cheshire Volunteer Fire Department. Cheshire's new Station 2 is in the old Box 500 area.

Figure 5-1 on the next page illustrates the city's box alarm areas.

FIGURE 5-1: Canandaigua Fire Department Box Alarm Areas



For all the CFD's box alarms, the initial dispatch is the city fire department alone, along with Canandaigua Ambulance. In reality, many times this results in an initial response to a structure fire of two personnel on two pieces of apparatus. During the day when the Chief is working, and those days when the floater may be on duty as an extra person, the initial response could be up to four personnel. The lone exception to this is for structures and aircraft-related incidents at Canandaigua Airport. For incidents at the airport in addition to Canandaigua units, East Bloomfield is dispatched for an engine, water tender, and mini-pumper, and the Victor Fire District is dispatched for an engine/tender and a utility unit with foam.

For the remainder of the city's response area additional resources are not dispatched until the first fire unit arrives on scene and performs a size-up, information received while responding indicates that there is the potential for a serious fire, or the number of calls and information received indicate a serious incident. Once a second alarm is struck, in addition to Canandaigua being re-dispatched, additional mutual aid resources are then requested. For most of the city's response areas the Veteran's Administration Hospital Fire Department and Crystal Beach are dispatched along with at least one other mutual aid department, depending upon location.

Part of this process also involves relocating additional resources to cover the city's fire stations. The city's run cards cover up to a fourth alarm assignment.

Town of Canandaigua

The Cheshire and Bristol Volunteer Fire Departments both utilize box alarm assignments similar to the city's. Both also respond with the other, on automatic aid, for any reported structure fire within their respective areas. As the incident escalates both have run cards that specify the resources to be dispatched on greater alarms. Neither department utilizes the city on initial incident responses.

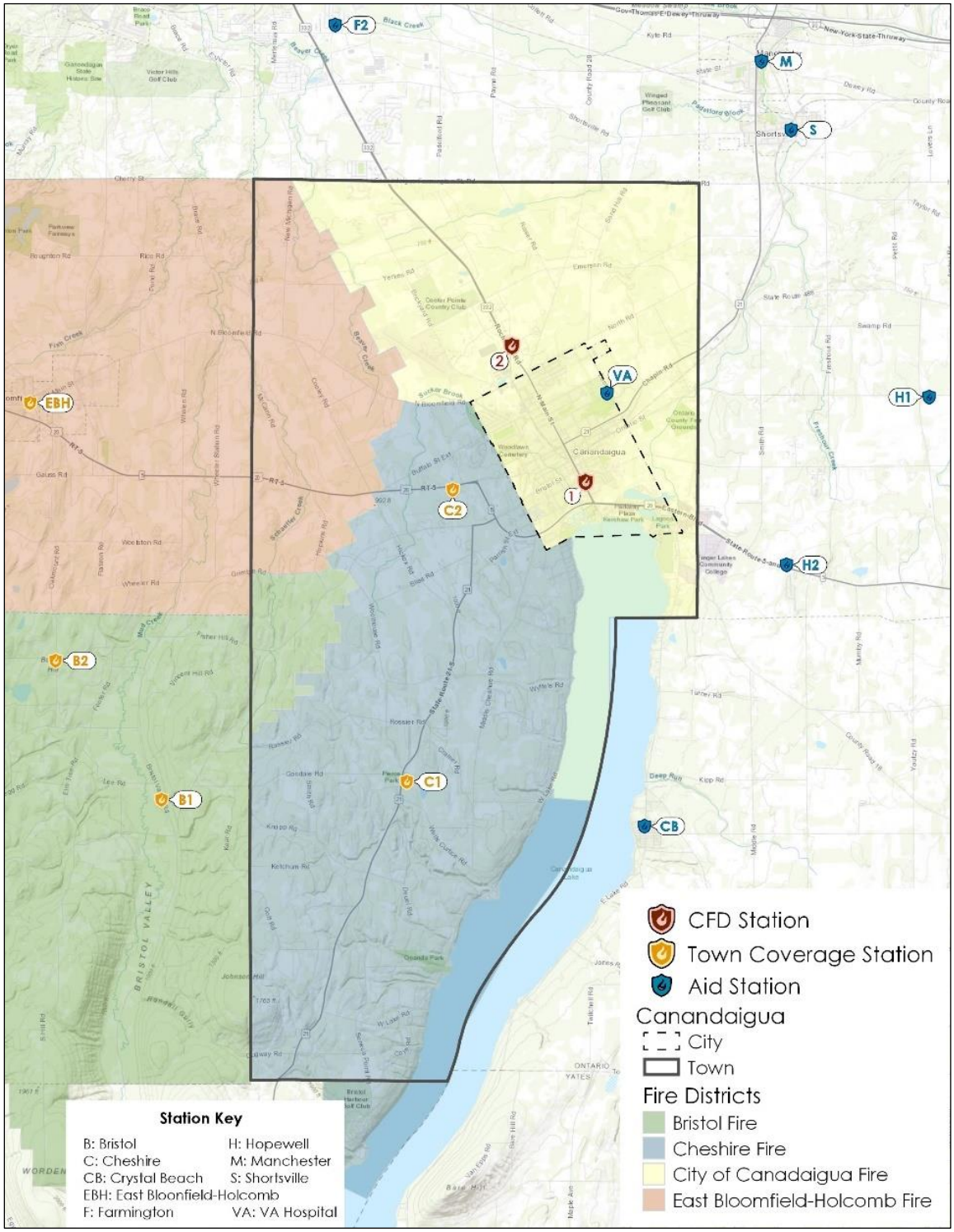
The East Bloomfield Volunteer Fire Department informed CPSM that at the time of this study it does not utilize box alarms. Calls for additional assistance with the incident are based upon location and the request of the chief. It is working on developing box assignments, a process it hopes to have completed by June 2018. East Bloomfield also has a small area in its town service area that is more than five miles from its station. The CFD responds first due into this area.

MUTUAL AID/AUTOMATIC RESPONSE

Mutual aid is an essential component of almost every fire department's operations. Except for the largest cities no fire department can, or should, be expected to have adequate resources to respond to and safely, effectively, and efficiently mitigate large-scale, complex incidents. Mutual aid is shared between communities when their day-to-day operational fire, rescue, and EMS capabilities have been exceeded, and ensures that the citizens of the community are protected even when local resources are overwhelmed. Automatic aid is an extension of mutual aid, where the resources from adjacent communities are dispatched to respond at the same time as the units from the jurisdiction where the incident is occurring. Automatic and mutual aid are generally provided without charge among the participants.

The CFD and the fire departments that protect the Town of Canandaigua participate in a robust automatic and mutual aid system with their surrounding departments. This includes both fire and other related incidents such as water and other types of rescues. Figure 5-2 illustrates the location of both city and town fire stations along with the location of automatic/mutual aid partner stations. Red stations are city-staffed stations, orange are stations that provide contract service to portions of the town, and blue stations provide automatic or mutual aid to the city and town. Mutual aid partners in addition to those who are under contract with the town include the Canandaigua Veteran's Hospital Fire Department, Crystal Beach Volunteer Fire Department, Shortsville Fire Department, Farmington Fire Association, Hopewell Fire Department, and the Manchester Fire Department. For larger incidents, departments such as the Geneva Fire Department and Victor Fire District can also be requested for assistance.

FIGURE 5-2: City, Town, and Automatic/Mutual Aid Partner Station Locations



The CFD and the town fire departments also provide mutual and/or automatic aid to many of these same departments when they are dispatched for, or have, a structure fire. Any fire incident in the county that results in the utilization of mutual aid receives a response by at least one deputy county fire coordinator who assists the incident commander with coordination of requested resources of various types.

The CFD also provides automatic aid to Crystal Beach for all incidents during weekdays from 8:00 a.m. to 4:00 p.m. when Crystal Beach has a shortage of available volunteer personnel. CFD responds 24/7 on first alarm, automatic aid to any reported structure in the town.

The issue of which companies should respond to certain areas on mutual or automatic aid is often the subject of debate within the emergency services. While the simple answer is to say the closest should always be called, the reality is not that clear cut. Often, long-held animosities between companies can hinder working relationships. In many cases, the current leadership of the various organizations are not even aware of the root cause of the issues between their companies.

A significant issue that is closely related to automatic and mutual aid is the training of departments and personnel who are participating. In large part due to the lack of mandatory firefighter training requirements (in many cases even basic Firefighter I training is not mandatory) the training of personnel from fire company to fire company can vary widely. This is particularly true in the volunteer fire service. It also creates a major dilemma for fire chiefs of well-trained organizations and can create serious operational and safety issues on the emergency scene. In short, personnel who are not adequately trained can be a serious detriment on the emergency scene and present liabilities to the municipality in which the incident is taking place. Ultimately, the incident commander is responsible for the safety and conduct of everyone on the scene regardless of their organizational affiliation.

It is certainly not unreasonable for the Canandaigua Fire Department, and in a larger context the city and town as a whole, to expect that companies coming into the city or town on automatic and/or mutual aid be required to meet certain minimum training requirements as long as they are valid and reasonable. These minimum training requirements should be spelled out in the formal, signed automatic/mutual aid agreements that should exist between various communities and/or fire and rescue organizations. A provision in those agreements could stipulate that the fire chief or other designated individual must certify in writing annually that all his personnel (at least those who are supposed to be interior structural certified and that might respond on mutual aid) continue to meet the requisite training standards. Several fire chiefs in southern New Jersey have informed surrounding mutual aid departments that personnel with beards[16] are not permitted to respond into their communities on mutual aid.

Recommendations:

- The City and Town of Canandaigua should require that personnel who staff fire and rescue organizations that respond into the city and/or town on automatic/mutual aid possess the same minimum levels of training that Canandaigua personnel are required to maintain. (Recommendation No. 6.)
- The city and town's automatic/mutual aid agreements with surrounding fire and rescue organizations should stipulate the minimum required training standards for personnel who may respond into either the city or township to assist. The agreements should also stipulate that the ranking officer of each entity must certify in writing on an annual basis that his/her personnel comply. (Recommendation No. 7.)

Mutual/automatic aid companies are sometimes not happy with the assignments that they receive as part of the overall system. For instance, the Shortsville Fire Department is usually

16. The OSHA Respiratory Protection Standard CFR 1910-134 requires all personnel who may need to wear self- contained breathing apparatus (SCBA) to be fit tested on an annual basis with SCBA masks to ensure proper fit. It is generally accepted industry practice that personnel with beards cannot pass a fit test or are not in compliance if their beard was grown after the test.

assigned strictly as a cover assignment to the VA hospital during significant fire incidents. They informed CPSM that they rarely get to actually go to the fire, despite believing that they can provide fully staffed and trained structural firefighting crews. However, the reported reason they are always assigned to the VA hospital is because of the specialized nature of the facility and their familiarity with it.

SECTION 6. RESPONSE TIME ANALYSIS

STATION LOCATIONS/MEASURING RESPONSE TIMES

Response times are typically the primary measurement for evaluating fire and EMS services. Response times can be used as a benchmark to determine how well a fire department is currently performing, to help identify response trends, and to predict future operational needs. Achieving the quickest and safest response times possible should be a fundamental goal of every fire department. The actual impact of a speedy response time is limited to very few incidents. For example, in a full cardiac arrest, analysis shows that successful outcomes are rarely achieved if basic life support (CPR) is not initiated within four minutes of the onset. However, cardiac arrests occur very infrequently; on average they are 1 percent to 1.5 percent of all EMS incidents.[17] There are also other EMS incidents that are truly life-threatening, and the time of response can clearly impact the outcome. These involve full drownings, allergic reactions, electrocutions, and severe trauma (often caused by gunshot wounds, stabbings, and severe motor vehicle accidents, etc.). Again, the frequencies of these types of calls are limited.

Regarding response times for fire incidents, the criterion is based on the concept of "flashover." This is the state at which super-heated gasses from a fire are released rapidly, causing the fire to burn freely and become so volatile that the fire reaches an explosive state (simultaneous ignition of the all combustible materials in a room). In this situation, usually after an extended period (often eight to twelve minutes after ignition but times as quickly as five to seven minutes), and a combination of the right conditions (fuel and oxygen), the fire expands rapidly and is much more difficult to contain. When the fire does reach this extremely hazardous state, initial firefighting forces are often overwhelmed, larger and more destructive fire occurs, the fire escapes the room and possibly even the building of origin, and significantly more resources are required to affect fire control and extinguishment.

Flashover occurs quicker and more frequently today and is caused at least in part by the introduction of significant quantities of plastic- and foam-based products into homes and businesses (e.g., furnishings, mattresses, bedding, plumbing and electrical components, home and business electronics, decorative materials, insulation, and structural components). These materials ignite and burn quickly and produce extreme heat and toxic smoke.

As a benchmark, for an urban community, NFPA 1720 recommends the entire initial response of 15 personnel be on scene within nine minutes of dispatch. It is also important to keep in mind that once units arrive on scene they will need to get set up to commence operations. NFPA 1720 recommends that units be able to commence an initial attack within two minutes of arrival, 90 percent of the time.

Although trying to reach the NFPA benchmark for travel time may be laudable, the question is at what cost? What is the evidence that supports such recommendations? NFPA 1710's and 1720's travel times are established for two primary reasons: (1) the fire propagation curve (Figure 6-2); and (2) sudden cardiac arrest (Figure 6-3), where brain damage and permanent brain death occurs in four to six minutes.

According to fire service educator Clinton Smoke, the fire propagation curve establishes that temperature rise and time within a room on fire corresponds with property destruction and

17. Myers, Slovis, Eckstein, Goodloe et al. (2007). "Evidence-based Performance Measures for Emergency Medical Services System: A Model for Expanded EMS Benchmarking." *Pre-hospital Emergency Care*.

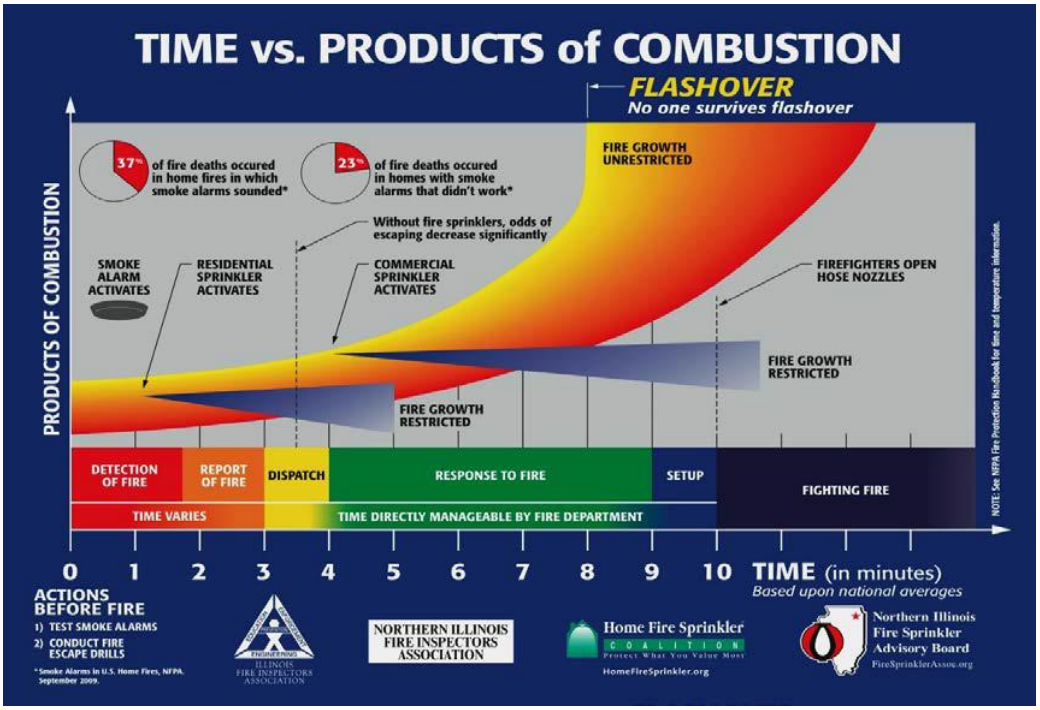
potential loss of life if present.[18] At approximately the ten-minute mark of fire progression, the fire flashes over (due to superheating of room contents and other combustibles) and extends beyond the room of origin, thus increasing proportionately the destruction to property and potential endangerment of life. The ability to quickly deploy adequate fire staff prior to flashover thus limits the fire's extension beyond the room or area of origin.

Regarding the risk of flashover, the authors of an IAFF report conclude:

Clearly, an early aggressive and offensive initial interior attack on a working structural fire results in greatly reduced loss of life and property damage. Consequently, given that the progression of a structural fire to the point of "flashover" (the very rapid spreading of the fire due to super-heating of room contents and other combustibles) generally occurs in less than 10 minutes, two of the most important elements in limiting fire spread are the quick arrival of sufficient numbers of personnel and equipment to attack and extinguish the fire as close to the point of its origin as possible.[19]

Figure 6-1 illustrates the time progression of a fire from inception through flashover. The time versus products of combustion curve shows activation times and effectiveness of residential sprinklers (approximately one minute), commercial sprinklers (four minutes), flashover (eight to ten minutes), and firefighters applying first water to the fire after notification, dispatch, response, and set up (ten minutes). It also illustrates that the fire department's response time to the fire is one of the only aspects of the timeline that the fire department can exert direct control over.

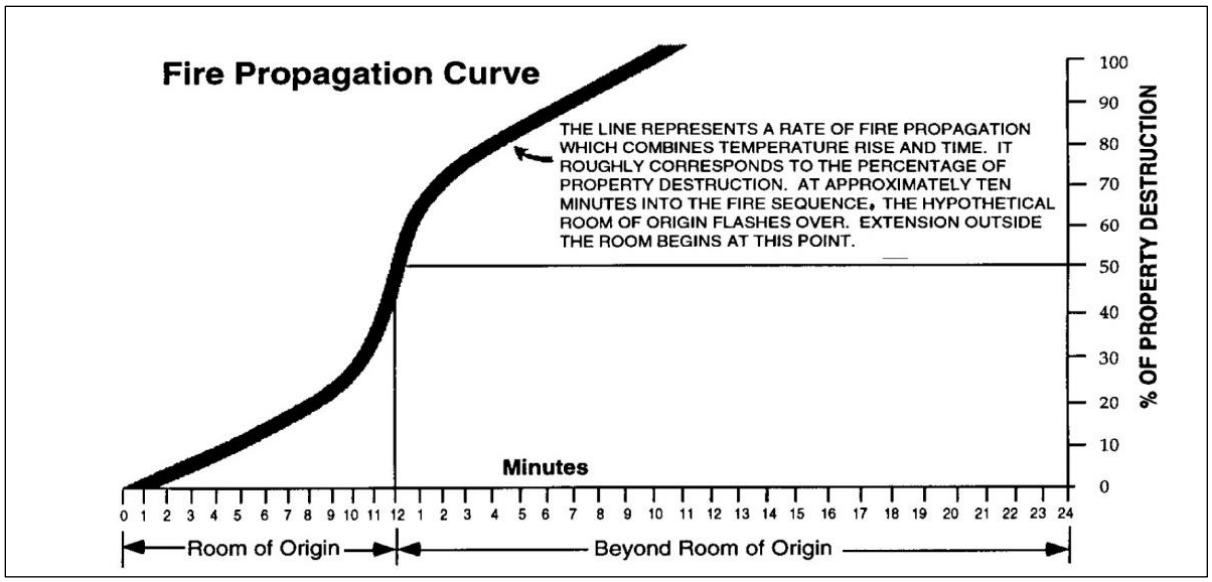
FIGURE 6-1: Fire Growth from Inception to Flashover



18. Clinton Smoke, *Company Officer*, 2nd ed. (Clifton Park, NY: Delmar, 2005).
19. *Safe Fire Fighter Staffing: Critical Considerations*, 2nd ed. (Washington, DC: International Association of Fire Fighters, 1995), 5.

Figure 6-2 shows the fire propagation curve relative to fire being confined to the room of origin or spreading beyond it and the percentage of destruction of property by the fire.

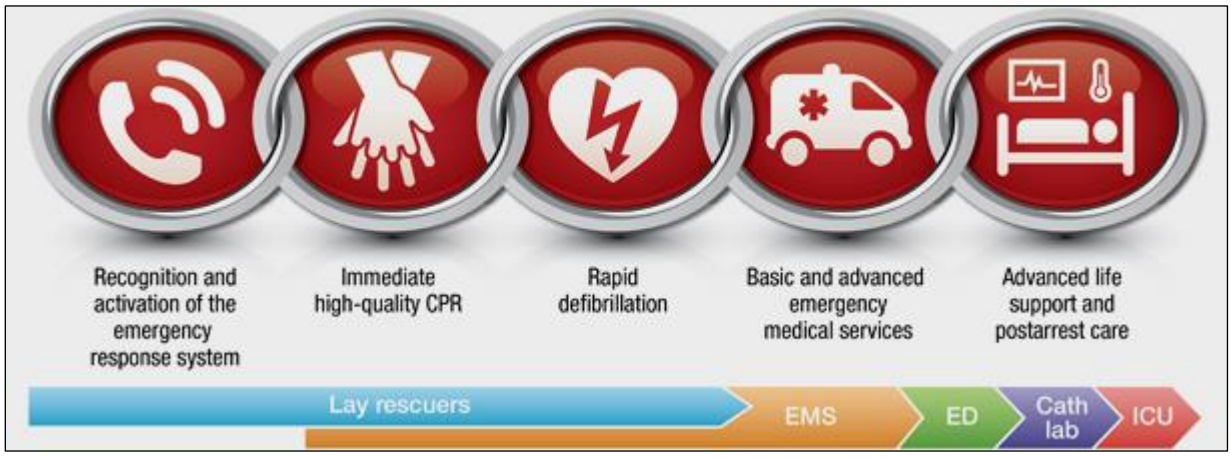
FIGURE 6-2: Fire Propagation Curve



From John C. Gerard and A. Terry Jacobsen, "Reduced Staffing: At What Cost?" *Fire Service Today* (September 1981), 15–21.

Figure 6-3 illustrates the out of hospital chain of survival, which is a series of actions that, when put in motion, reduce the mortality of sudden cardiac arrest. Adequate response times coupled with community and public access defibrillator programs potentially can impact the survival rate of sudden cardiac arrest victims by deploying early CPR, early defibrillation, and early advanced care provided in the prehospital setting.

FIGURE 6-3: Sudden Cardiac Arrest Chain of Survival



From "Out of Hospital Chain of Survival," http://cpr.heart.org/AHAECC/CPRAndECC/AboutCPRFirstAid/CPRFactsAndStats/UCM_475731_Out-of-hospital-Chain-of-Survival.jsp

An important factor in the whole response time question is what we term as "detection time." This is the time it takes to detect a fire or medical situation and notify 9-1-1 to initiate the response. In many instances, particularly at night or when automatic detection systems (fire

sprinklers and smoke detectors) are unavailable or inoperable, the detection process can be extended resulting in a significantly more serious incident.

There is no "right" amount of fire protection and EMS delivery. It is a constantly changing level based on such things as the expressed needs of the community, community risk, population growth, and ability/willingness of the community to fund the desired level of service. So, in looking at response times it is prudent to design a deployment strategy around the actual circumstances that exist in the community and the fire problem that is identified to exist. The strategic and tactical challenges presented by the widely varied hazards that the department protects against need to be identified and planned for through a community risk analysis planning and management process as identified in this report. It is ultimately the responsibility of elected officials to determine the level of risk that is acceptable to their respective community. It would be imprudent, and probably very costly, to build a deployment strategy that is based solely upon response times.

For the purpose of this these types of analysis, ***Response Time*** is a product of three components: Dispatch Time, Turnout Time, and Travel Time.

- *Dispatch time* is the time interval that begins when the alarm is received at the initial public safety answering point (PSAP) or communications center and ends when the response information begins to be transmitted via voice and/or electronic means to the emergency response facility or emergency response units or personnel in the field.
- *Turnout time* is the time interval that begins when the notification process to emergency response facilities and emergency response personnel and units begins by an audible alarm and/or visual announcement and ends at the beginning point of travel time. The fire department has the greatest control over these segments of the total response time.
- *Travel time* is the time interval that initiates when the emergency response unit is actually moving in response to the incident and ends when the unit arrives at the scene.

Response time, also known as **total response time**, is the time interval that begins when the call is received by the primary dispatch center and ends when the dispatched unit(s) arrives on the scene of the incident to initiate action.

According to NFPA 1710, the alarm processing time or dispatch time should be less than or equal to 60 seconds 90 percent of the time. NFPA 1710 also states that turnout time should be less than or equal to 80 seconds (1.33 minutes) for fire and special operations (from staffed stations) 90 percent of the time. As noted above, turnout time is the segment of total response time that the fire department has the most ability to control. Travel time shall be less than or equal to 240 seconds for the first arriving engine company 90 percent of the time. The standard further states the initial first alarm assignment should be assembled on scene in 480 seconds, 90 percent of the time. Note that NFPA 1710 response time criterion is a benchmark for service delivery and not necessarily a CPSM recommendation.

It is also important to note that since it focuses on volunteer fire departments that NFPA 1720 is silent on turnout time and travel time, focusing instead on the assembly of the ERF of 15 people in nine minutes in urban areas, 10 personnel in 10 minutes in suburban areas, and six personnel within 14 minutes in rural areas. The reality is, though, that the fire will continue to develop until such time as an ERF can be assembled and put to work. With just six personnel suggested for rural area incidents, fire suppression operations will be limited to strictly defensive ones often aimed at doing little more than protecting exposures.

The Ontario County 9-1-1 center normally has just a single dispatcher available to serve 28 different fire departments, the vast majority of which provide both fire and EMS services. The 9-1-

1 center is the only public safety answering point (PSAP) for the county. The center's current protocol is for the initial call taker to gather all pertinent information within 45 seconds and turn the incident over to the fire/EMS dispatcher. The dispatcher then has 45 seconds to dispatch the incident. The county does use a pre-announce system for dispatching incidents which they feel helps to speed response times. Data was not available on how often the 9-1-1 center achieves its established benchmarks. However, with the current protocol calling for a total of 90 second processing time from call receipt to dispatch that exceeds the NFPA recommendation by 60 seconds.

Once a fire incident is dispatched, each company has three minutes to sign on the air. If they do not, the incident is dispatched again. At the five-minute mark if there has been no response, the incident is dispatched again, and the nearest mutual aid company is also dispatched.

Current county protocol is that only the times for the first responding unit and first unit on scene from each department are recorded. This can be a chief officer, or other member with a portable radio, responding in their own personal vehicle. The county does not record the time responding or on scene for any subsequent units from the same company. This practice makes it virtually impossible to obtain accurate data for analysis regarding turnout time, response/travel time, and NFPA 1720 benchmark compliance.

According to data compiled by the City of Canandaigua, from 2007 through 2016, the average first unit on scene response time for all calls by the CFD ranged from 3.2 minutes in 2007 to 4.8 minutes in 2010. Over the ten-year period the average was 3.91 minutes. For fire calls, the average first unit on scene response time has ranged from 3.2 minutes in 2007 to 4.9 minutes in 2010. The ten-year average was 3.79 minutes. A first unit on scene response (travel) time of four minutes or under achieves the NFPA recommended benchmark. However, in Canandaigua, since at least 2010, this on-scene time has been for a unit staffed with just one firefighter.

Because of the county protocol on recording unit response and on-location times it is not possible for the city to track on-scene benchmarks for 15 personnel on scene within nine minutes of response. **However, several recent significant incidents in the city provide evidence that the city is not achieving this benchmark.** It should be noted that there were delays in reporting both the Scotland Road and Nolan's fires to the fire department. It is impossible to know to what extent these delays may have contributed to the situation the fire department encountered upon arrival; however, it is reasonable to assume it contributed to the significance of the incidents. Regardless of this fact, in both incidents, particularly Nolan's the number of firefighters on scene within the critical benchmark time frame fell short of the recommended ERF.

- 3/5/17 11:39 PM – Dwelling Fire with Entrapment - 22 Scotland Road.
  - **03:00** (into incident) – 2 career firefighters and 1 probationary volunteer firefighter on location. Three rescues made over ladders while a single firefighter placed a hose line in service.
  - **05:00** – total on scene staffing = 2 career firefighters, 1 interior volunteer firefighter, 2 probationary (exterior) volunteer firefighters.
  - **09:00** – Total on scene staffing = 2 career firefighters, 4 interior volunteer firefighters, and 3 exterior firefighters for **total staffing of 9 personnel** (benchmark is 15 personnel within 9 minutes).
  - **10:00 – 11:00** – Total on scene staffing of 13 personnel, 10 of whom were interior qualified.
- 7/13/17 5:26 AM – Nolan's Fire – 726 South Main Street.
  - **03:17** (into incident) – 1 career firefighter with 1 engine on location.

- **06:24** – Second career firefighter on location with second unit.
- **09:07** (benchmark is 15 personnel within 9 minutes) – **Total on scene compliment of personnel = 2 career firefighters.**
- **10:54** – 3 career firefighter and 3 exterior firefighters.
- **12:00** – 4 career firefighters, I interior volunteer firefighter, 3 exterior firefighters – First compliance with OSHA two-in/two-out.
- **14:30** – Same number of personnel. First interior attack line advanced into building – 11:13 after arrival of first unit.
- **22:30** – Staffing increased by 3 VA firefighters – Total personnel on scene = 11, however only 8 are interior qualified.
- **26:51** – 15 personnel on scene finally achieved; however, only 11 are interior structural qualified.

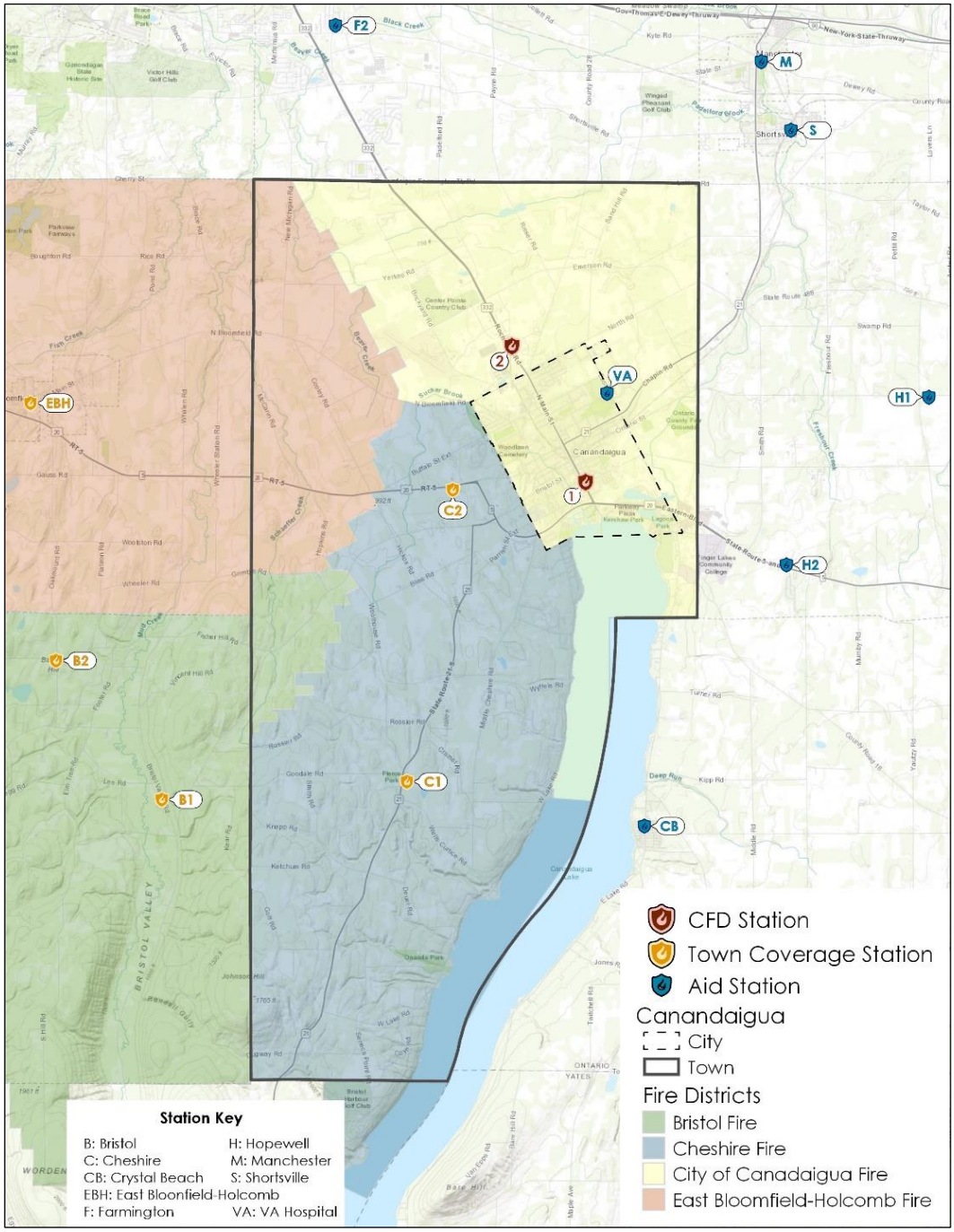
- 1/6/18 1:02 PM – Apartment Fire with Entrapment - 302 Camelot Court, #2.
  - **< 07:00** (into incident) – 2 career firefighters rescued victim trapped in wheelchair. One additional interior volunteer on scene.
  - **+/- 15:00** – **Total number of personnel on scene = 10**, 8 interior and 2 exterior (benchmark is 15 personnel within 9 minutes).

Recommendations:

- The City and Town of Canandaigua, along with their fire service providers, should work with the Ontario County 9-1-1 center in an attempt to reduce call processing time from receipt to dispatch to 60 seconds or less, 90 percent of the time. (Recommendation No. 8.)
- The City and Town of Canandaigua, along with their fire service providers, should work with the Ontario County 9-1-1 center to change the policy that first unit response and on-scene times are from appropriate fire service fire suppression units rather than a member possibly in a private vehicle. (Recommendation No. 9.)
- The City and Town of Canandaigua, along with their fire service providers, should work with the Ontario County 9-1-1 center to change the current time stamp policy to ensure that all units responding to all incidents have complete time stamps that capture all three components of total response time (dispatch, turnout, and travel) to enable more thorough analysis of response time data. (Recommendation No. 10.)
- The City and Town of Canandaigua, along with their fire service providers, should analyze on an ongoing basis their turnout and response/travel times to incidents, along with NFPA 1720 benchmark compliance for number of personnel on scene within recommended timeframes. (Recommendation No. 11.)

The fire station is a critical link in service delivery and where these facilities are located is the single most important factor in determining overall response times. Combined, the city and town cover a total of 67.35 square miles. There are four fire stations located within the response area. In addition, two stations outside of the municipal limits provide fire protection to parts of the town. Figure 6-4 shows the location and first due response districts of each station that provide primary fire protection to the city and town along with automatic and mutual aid stations.

FIGURE 6-4: City, Town, and Automatic/Mutual Aid Partner Station Locations



In its FY 2011 *ICMA Performance Measurement Data Report*, ICMA tabulated survey information from 76 municipalities with populations ranging from 25,000 to 100,000 people. Although the current population of the two municipalities is somewhat below this it can still provide some

context. In this grouping the average fire station service area was 11 square miles.[20] The median service area for this grouping of communities was 6.67 square miles per fire station.[21]

In addition, the NFPA and ISO have established different indices in determining fire station distribution. The ISO Fire Suppression Rating Schedule, section 560, indicates that first-due engine companies should serve areas that are within a 1.5-mile travel distance.[22] The placement of fire stations that achieves this type of separation creates service areas that are approximately 4.5 square miles in size, depending on the road network and other geographical barriers (rivers, lakes, railroads, limited access highways, etc.). The National Fire Protection Association (NFPA) references the placement of fire stations in an indirect way. It recommends that fire stations be placed in a distribution that achieves the desired minimum response times. NFPA Standard 1710, section 5.2.4.1.1, suggests an engine placement that achieves a 240-second (four-minute) travel time.[23] Using an empirical model called the "piece-wise linear travel time function" the Rand Institute has estimated that the average emergency response speed for fire apparatus is 35 mph. At this speed the distance a fire engine can travel in four minutes is approximately 1.97 miles.[24] A polygon based on a 1.97-mile travel distance results in a service area that on average is 7.3 square miles.[25]

Illustrating response time is important when considering the location from which assets should be deployed. When historic demand is coupled with risk analysis, a more informed decision can be made. Figure 6-5 uses GIS mapping to illustrate 240-second travel time bleed comparisons, utilizing the existing road network from each CFD station. As is illustrated, the city enjoys the complete 240-second travel time coverage; however, in the areas of the town that the city contracts to provide fire protection for there is a large area that is outside of the recommended travel time benchmark. It should be noted that most of this area is rural, with low call volume; however, growth is continuing

20. *Comparative Performance Measurement*, FY 2011 Data Report - Fire and EMS, ICMA Center for Performance Measurement, August 2012.
21. Ibid.
22. Insurance Services Office. (2003) Fire Protection Rating Schedule (edition 02-02). Jersey City, NJ: Insurance Services Office (ISO).
23. National Fire Protection Association. (2010). 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*. Boston, MA: National Fire Protection Association.
24. University of Tennessee Municipal Technical Advisory Service, *Clinton Fire Location Station Study*, Knoxville, TN, November 2012. p. 8.
25. Ibid, p. 9.

FIGURE 6-5: 240-seconds Travel Time Bleed from CFD Stations

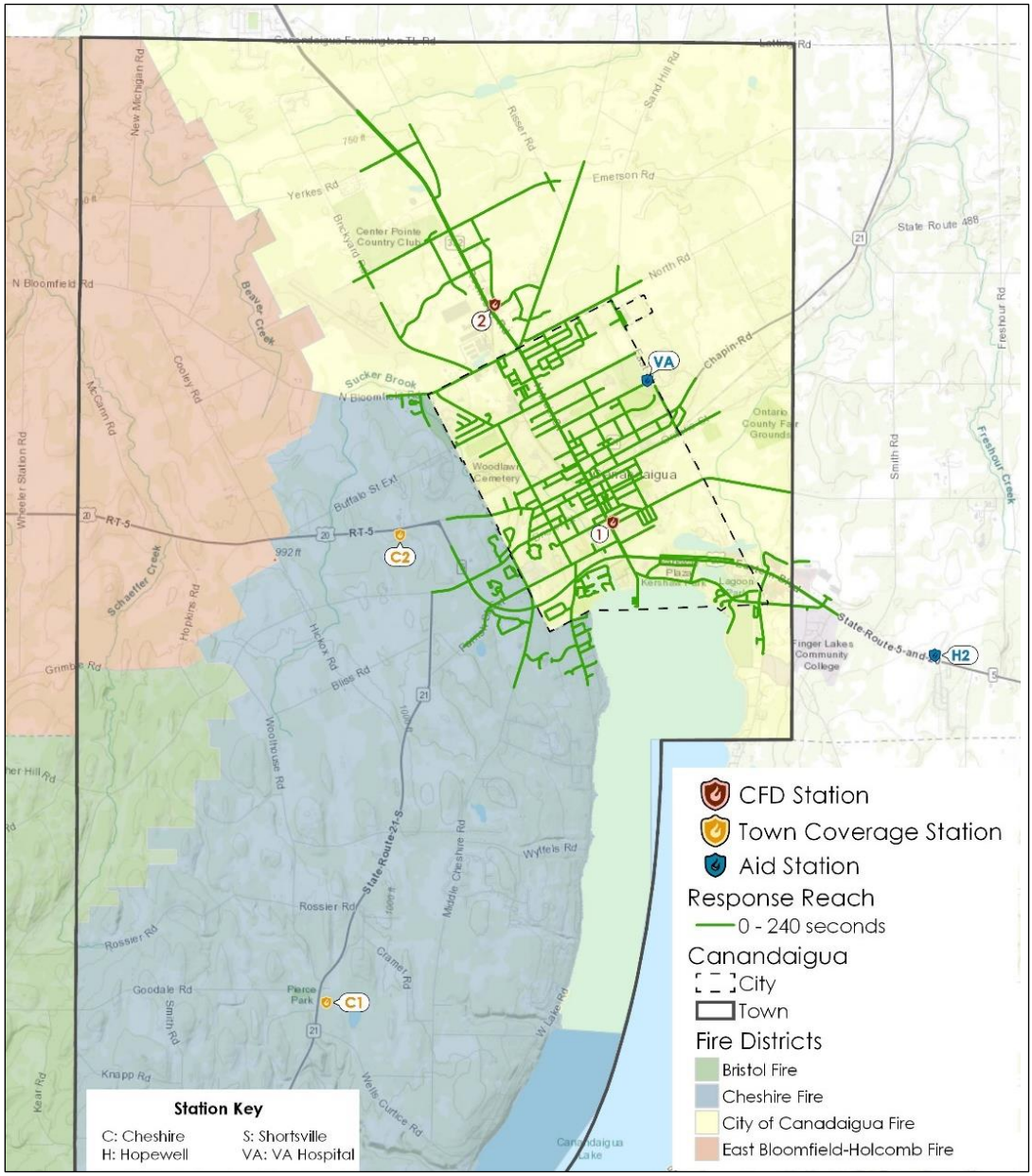


Figure 6-6 shows the 240-seconds travel time from the stations that provide fire protection to the town. The green color indicates areas of the town and city that are within 240-seconds travel time from a town-contracted fire station. It should be noted that areas more than one mile outside of the town limits are not illustrated. The area of the town protected by Cheshire enjoys moderate coverage. Cheshire Station 2 can provide 240-seconds coverage into the west side of the city, as well as the southern portion of East Bloomfield's district in the town. Neither Bristol nor East Bloomfield have any 240-second travel time to their portions of the town fire district.

FIGURE 6-6: 240-seconds Travel Time Bleed from Stations that Provide Fire Protection to the Town

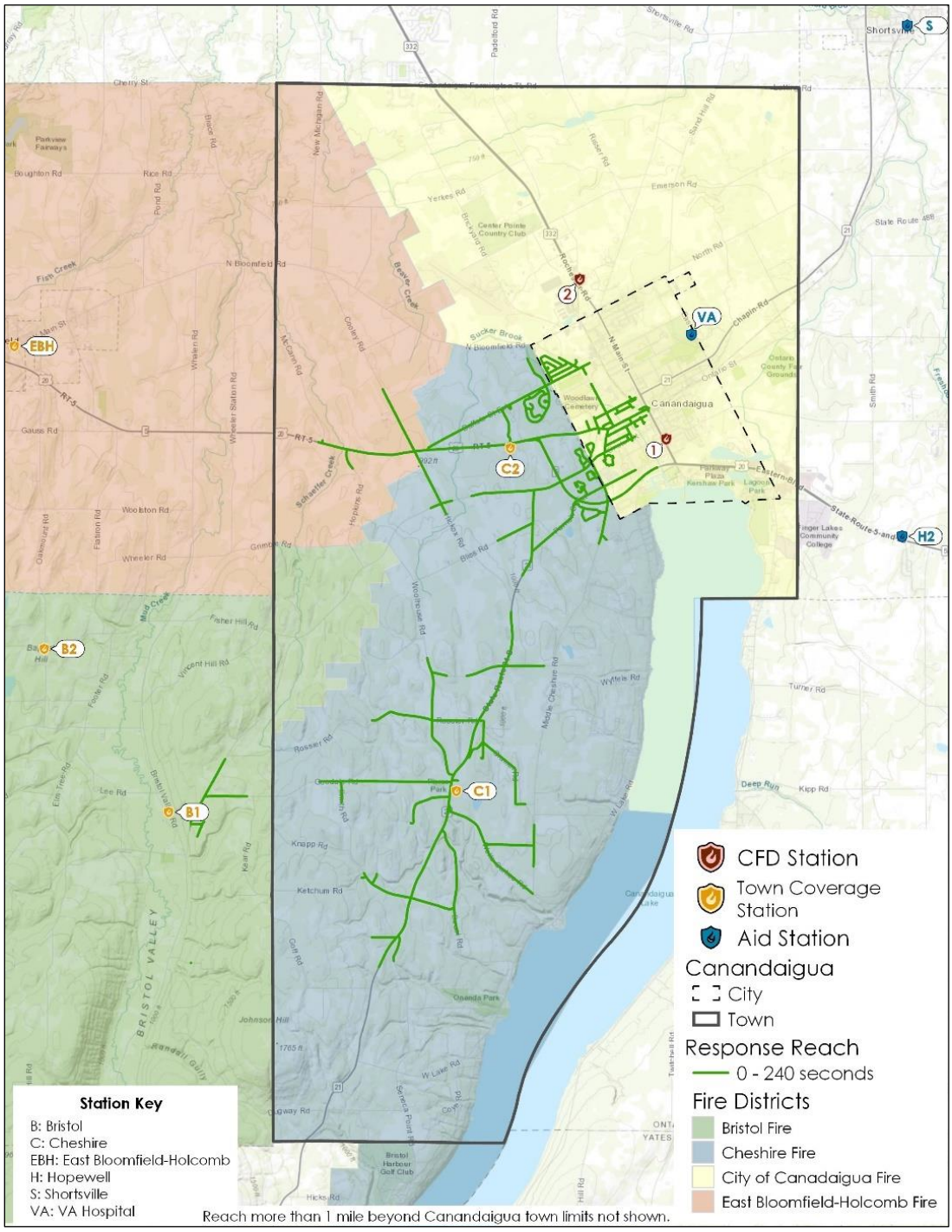


Figure 6-7 illustrates a 360-seconds travel time bleed from the two city fire stations. Virtually the entire area of the town that the city protects is within this time frame. In addition, areas of the town south of the city are also included, as is a small area of the East Bloomfield response area. Travel time of 360 seconds from the city stations also extends into several of the surrounding communities.

FIGURE 6-7: 360-seconds Travel Time Bleed from CFD Stations

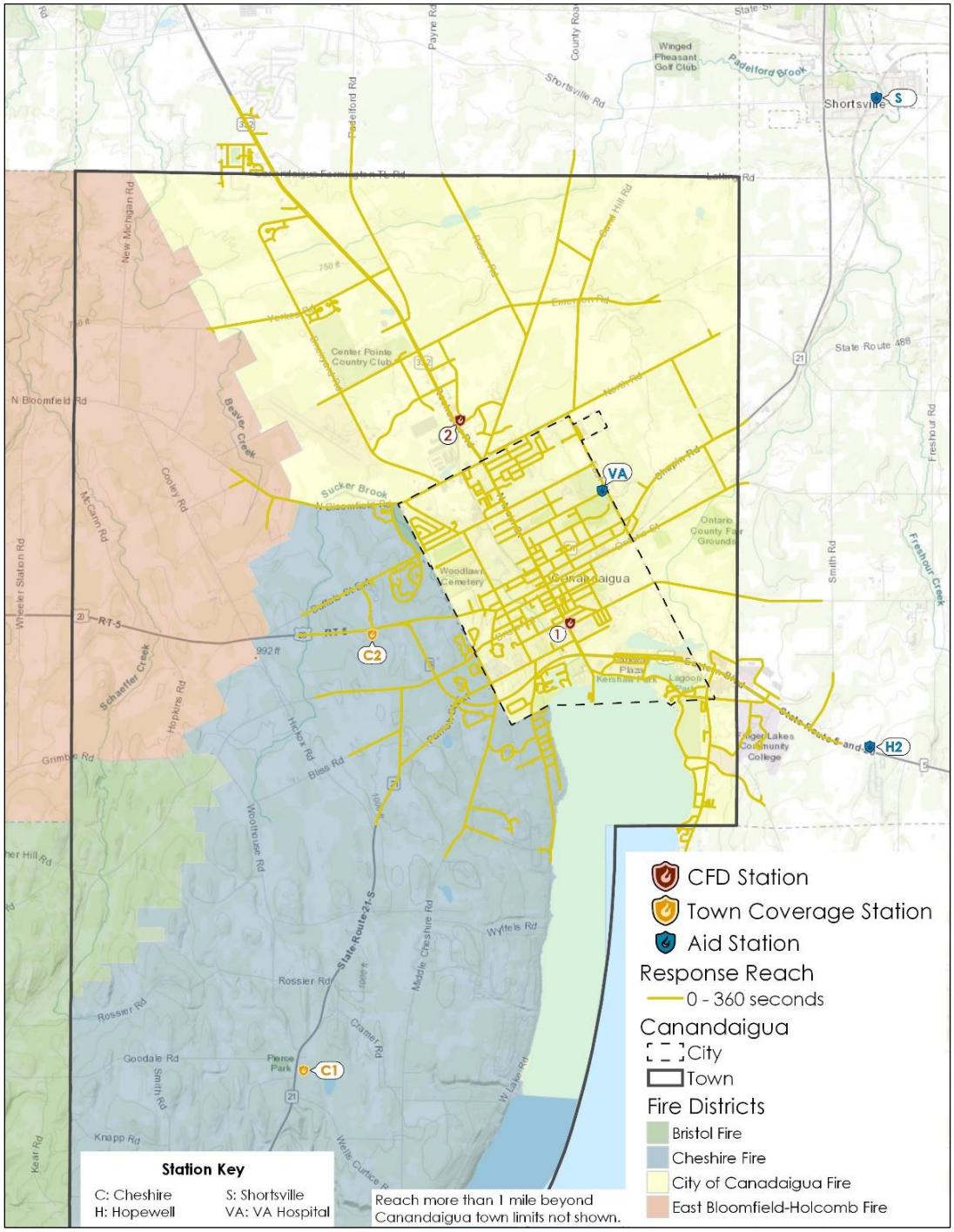


Figure 6-8 illustrates a 360-seconds travel time bleed from the stations that are under contract for town fire protection. Cheshire Stations 1 and 2 provide almost full coverage to their district within 360 seconds of drive time. Station 2 also provides coverage into most of the city within that time frame, as well as the southern half of East Bloomfield's protection area. It should be noted that East Bloomfield is not within 360 seconds of travel time to any part of their district within the Town of Canandaigua. Bristol's protection area within the town is also not within 360 seconds of travel time from any existing station.

FIGURE 6-8: 360-seconds Travel Time Bleed from Stations that Provide Fire Protection to the Town

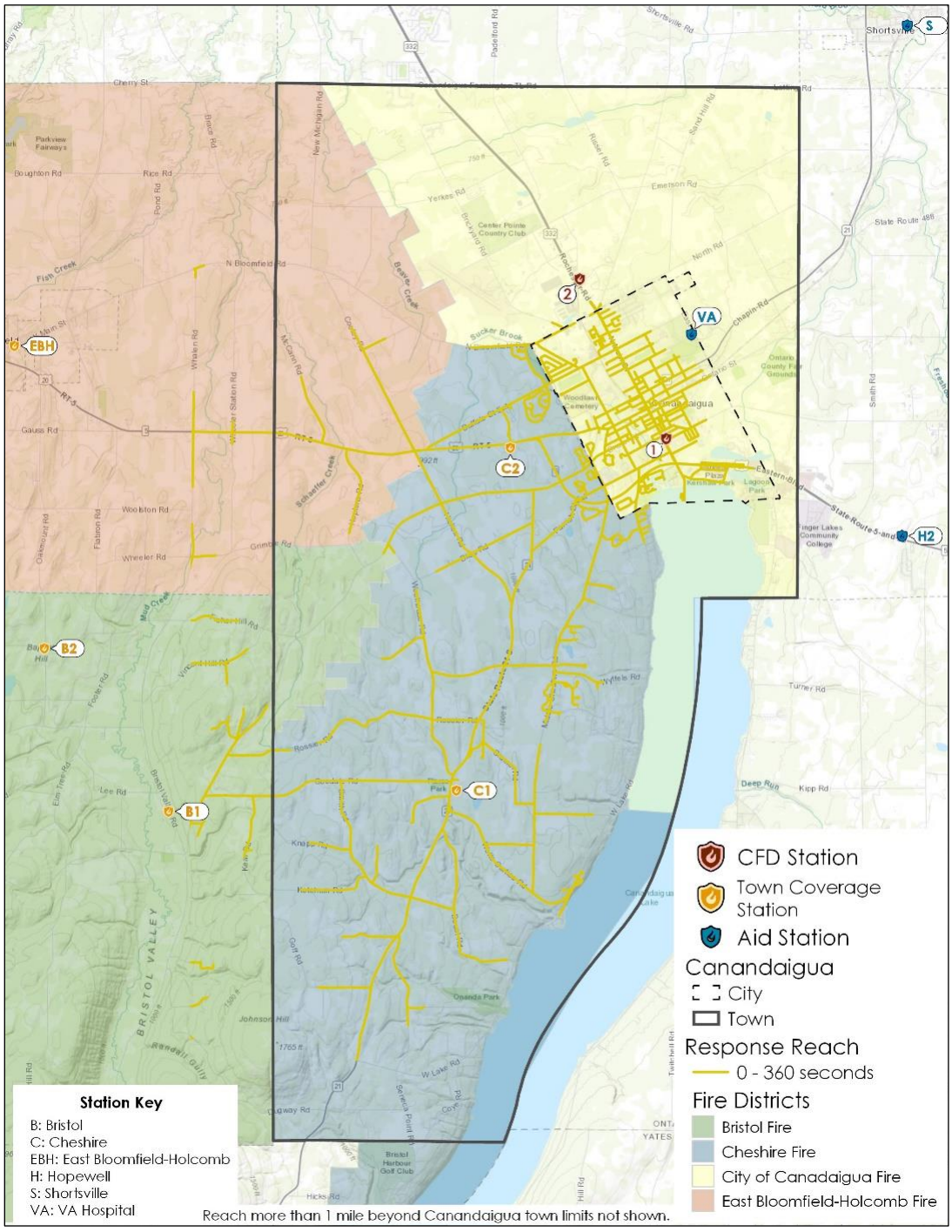


Figure 6-9 illustrates a 480-second travel time bleed from the two city fire stations. The entire area of the town that the city protects is within this time frame. In addition, the northern half of Cheshire's coverage area of the town is included, as is about half of the East Bloomfield response area. The 480-seconds travel time bleed from the city stations also extends farther into several of the surrounding communities.

FIGURE 6-9: 480-seconds Travel Time Bleed from CFD Stations

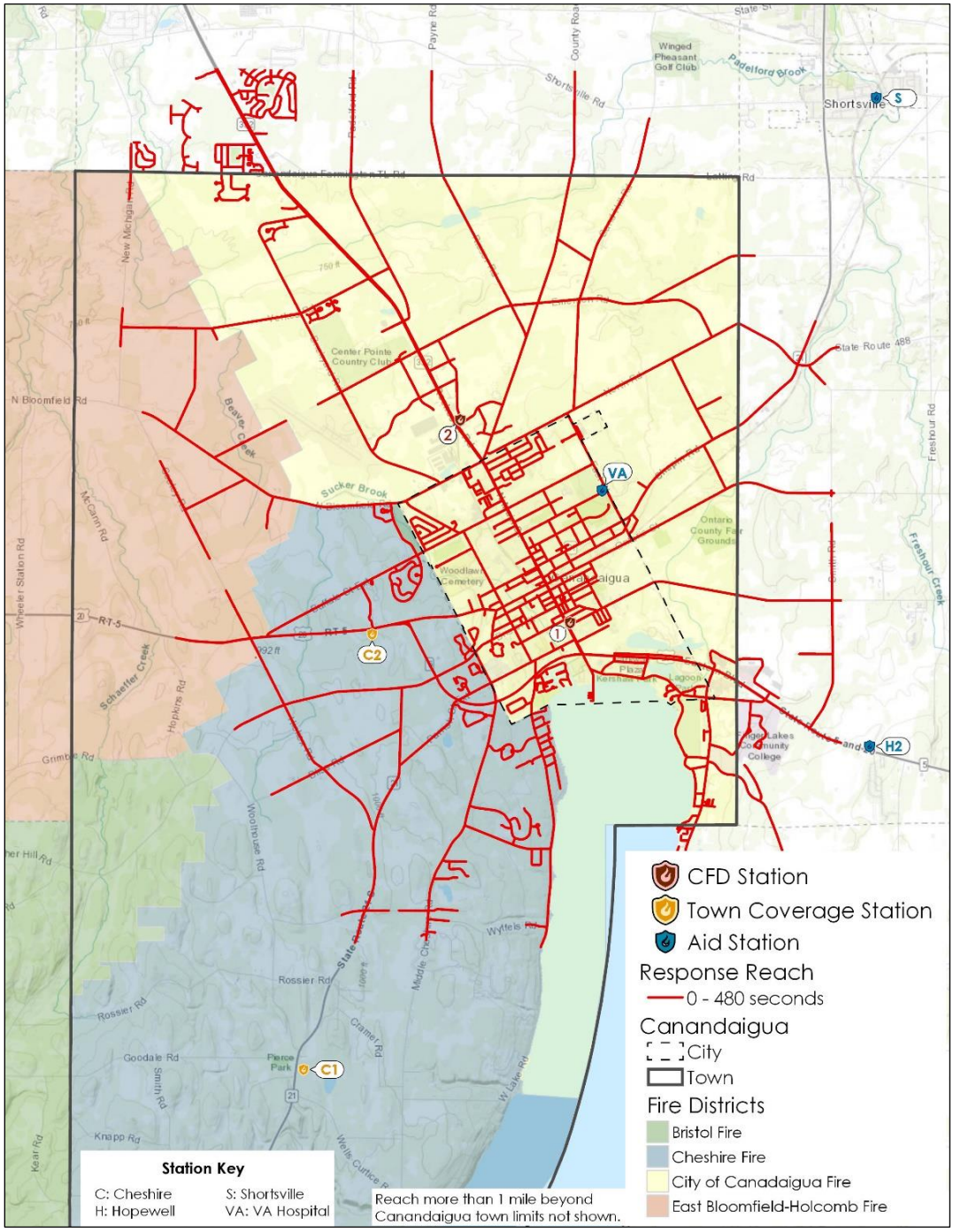


Figure 6-10 illustrates a 480-seconds bleed from the stations that are under contract for town fire protection. Cheshire Stations 1 and 2 provide full coverage to their district within 480 seconds of drive time. Station 2 also provides coverage into the entire city within that time frame, as well as most of East Bloomfield's protection area. In conjunction with the city's coverage, virtually the entire East Bloomfield coverage area is within 480 seconds of travel time. Portions of Bristol's response area within the town falls within 480 seconds of travel time; however, the center section is still not covered.

FIGURE 6-10: 480-seconds Travel Time Bleed from Stations that Provide Fire Protection to the Town

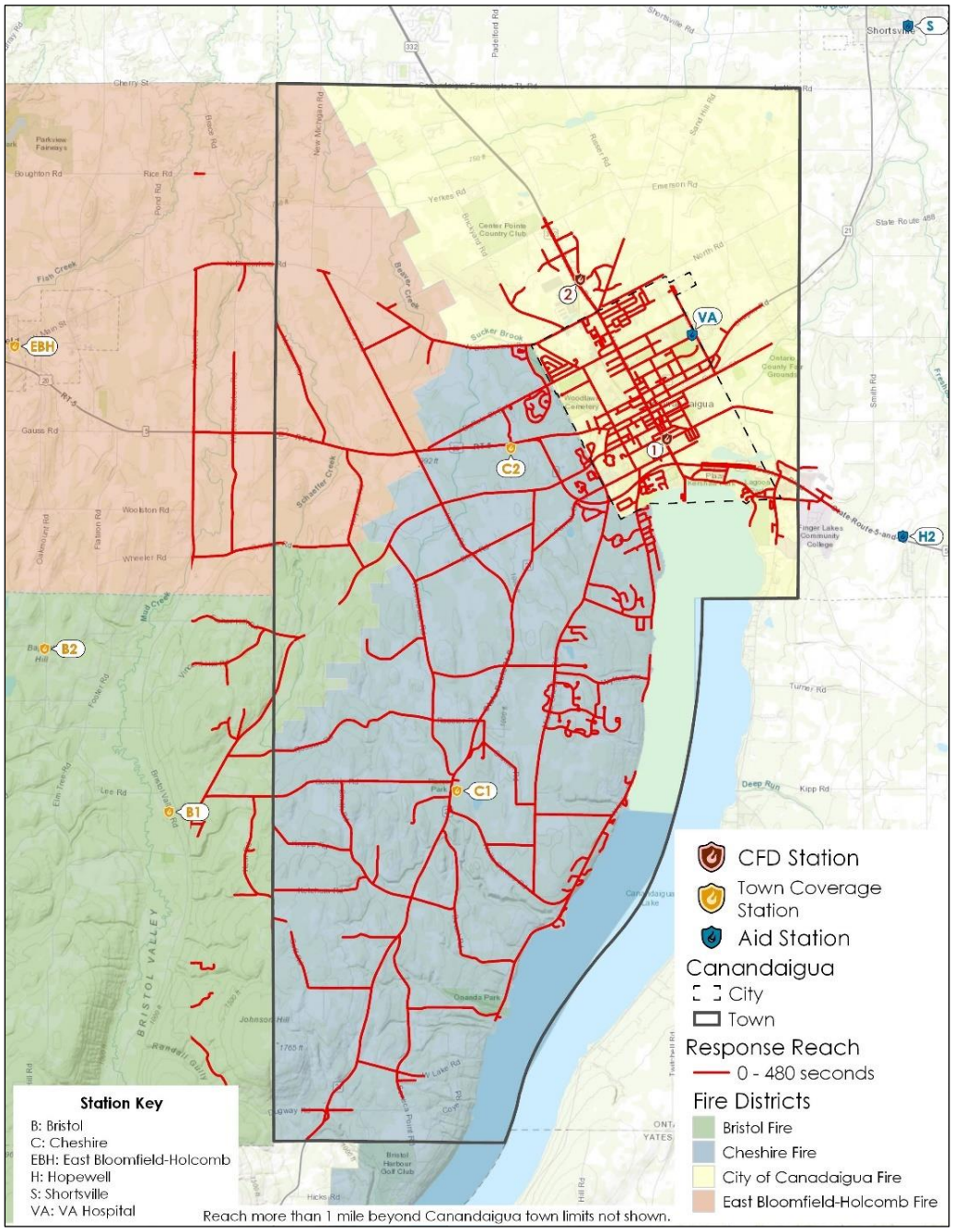


Figure 6-11 illustrates the areas of the city and town that are within a 480 seconds of travel time from one, two, or three or more of the city and town fire stations (not including mutual aid from other communities). The thicker and darker the line, the more stations that are within 480 seconds of travel time. The city is 100 percent covered by three or more stations with this travel time, as are the surrounding areas of the town. The farther out from the city the overlap diminishes to two stations and then finally just a single station.

FIGURE 6-11: 480-seconds Travel Time Overlapping Bleed from Stations that Provide Fire Protection to the City and Town

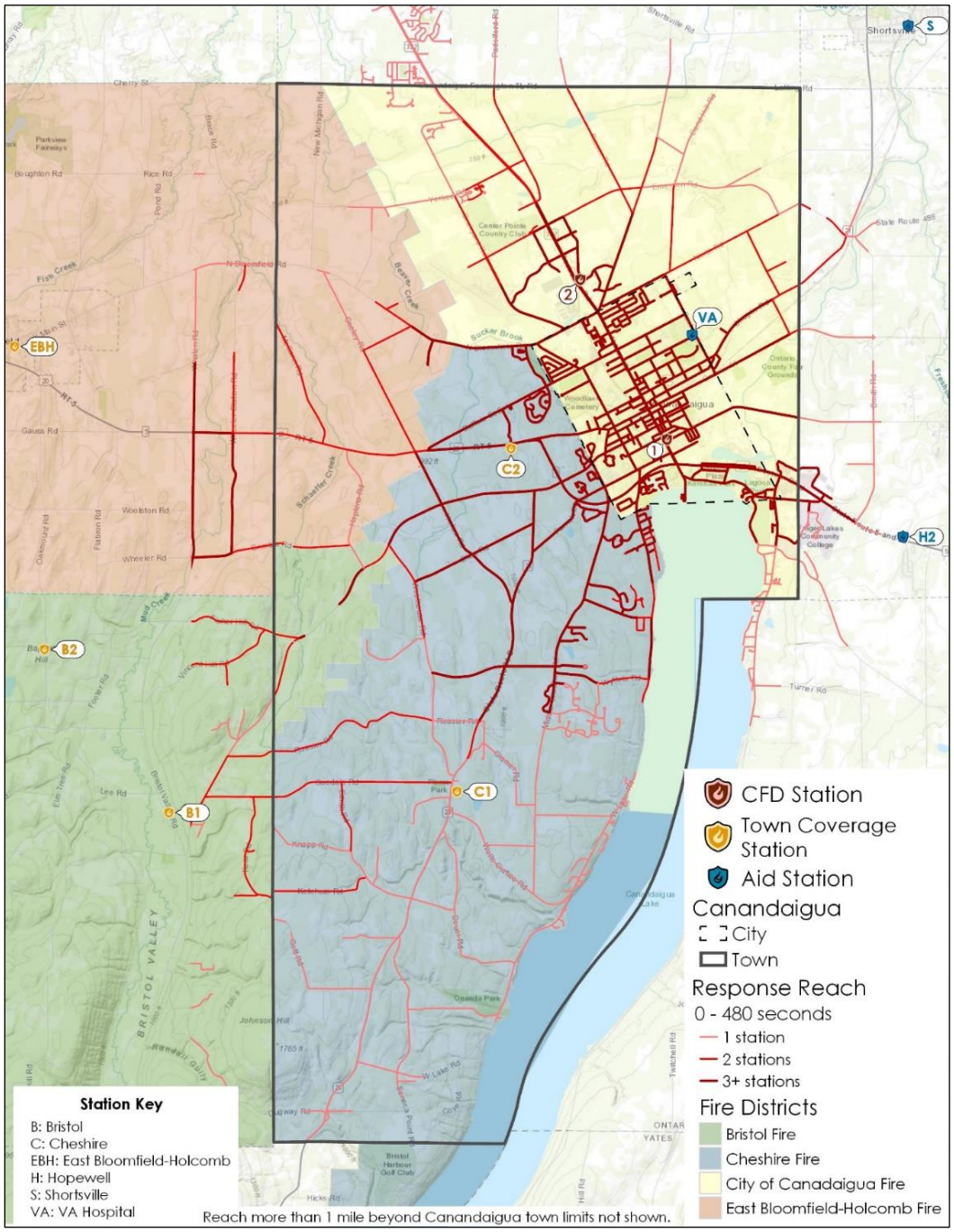
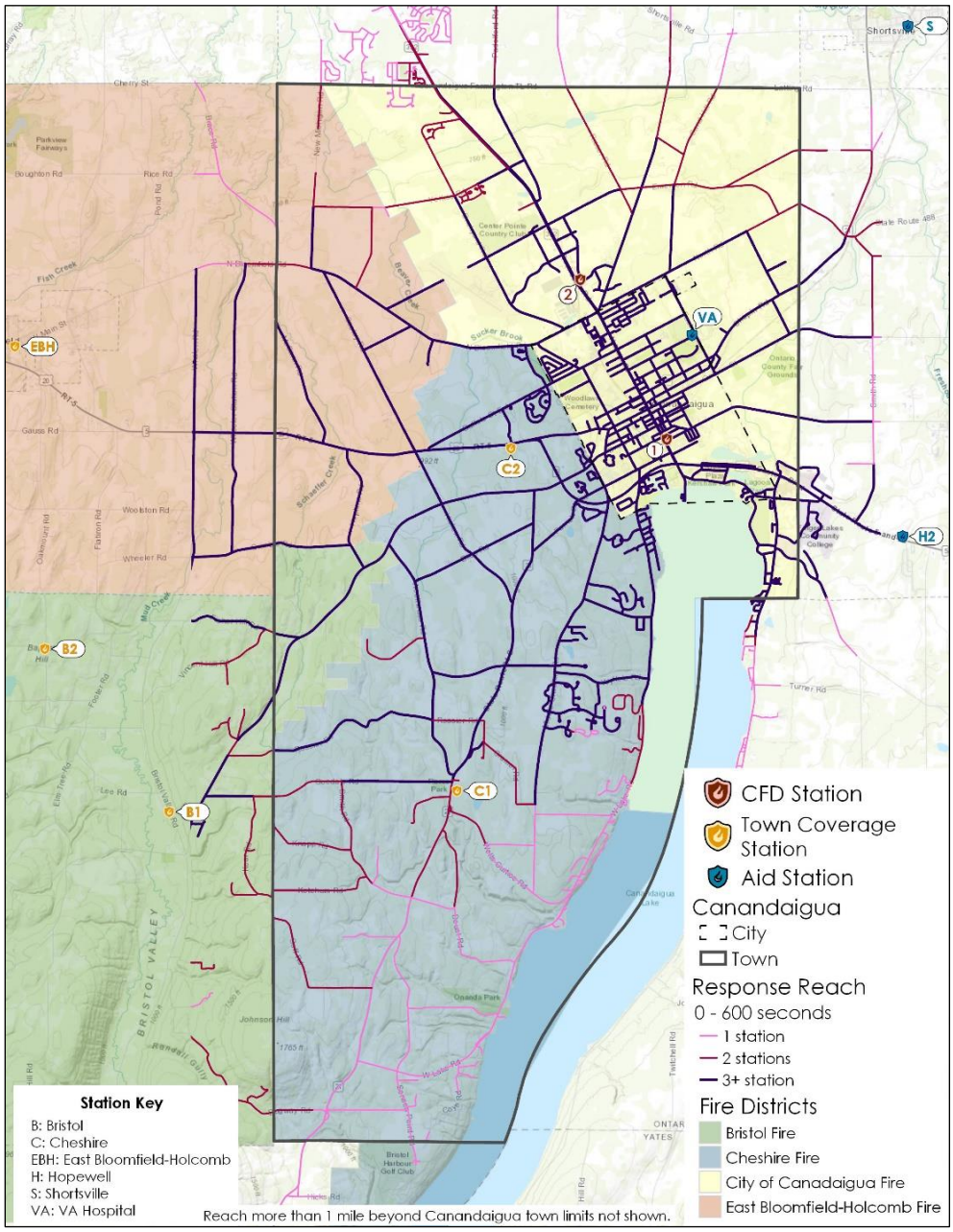


Figure 6-12 illustrates the areas of the city and town that are within a 600-seconds travel time bleed from one, two, or three or more of the city and town fire stations (not including mutual aid from other communities). The thicker and darker the line, the more stations that are within 600 seconds of travel time. The city is 100 percent covered by three or more stations with this travel time, as are some areas of the town north of the city, the northern half of Cheshire's district, most of East Bloomfield's district, and even part of Bristol's district; all have multiple stations that are within 600 seconds of travel time. Only some areas of Cheshire's district in the southern and southeastern parts of the town have only a single station within 600 seconds of travel time.

FIGURE 6-12: 600-seconds Travel Time Overlapping Bleed from Stations that Provide Fire Protection to the City and Town



Figures 6-13 through 6-16 illustrate various travel time bleeds for mutual aid companies primarily north and east of the City of Canandaigua, including Crystal Beach, Hopewell, Shortsville, and Farmington. The VA hospital was excluded due to its location in the city. Manchester was excluded since it would need to bypass Shortsville to get into either the city or the town. Figure 6-13 shows that with the exception of Hopewell Station 2, which can arrive in a very small area of the southeastern corner of the city and adjacent town area, none of the other agencies are within 240 seconds of travel time from either the city or the town.

FIGURE 6-13: 240-second Travel Time Bleed of Mutual Aid Stations into City and Town

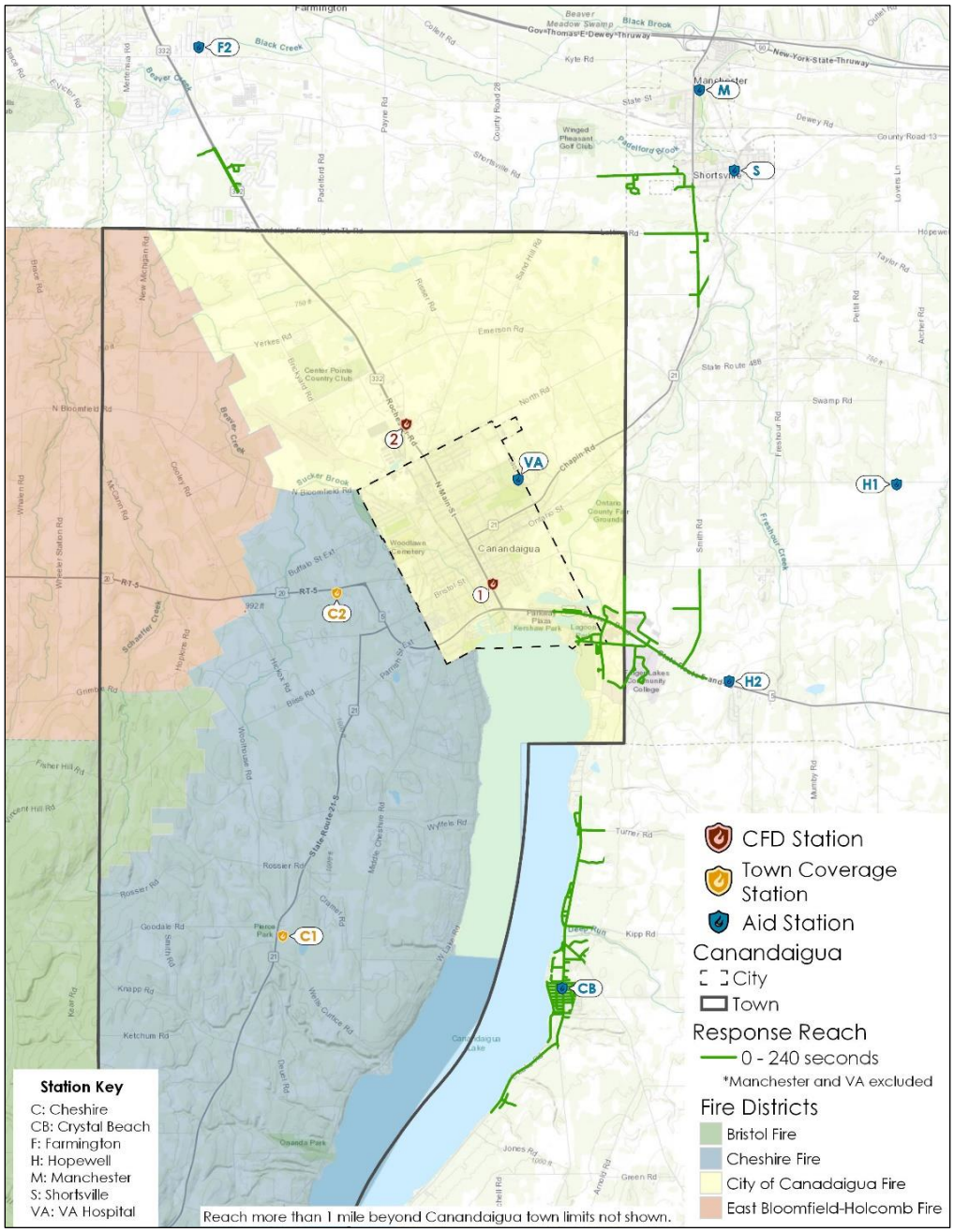


Figure 6-14 shows that Hopewell Station 2 and possibly Crystal Beach can respond into the southeastern corner of the town and city, up to about CFD Station 1, within 360 seconds of travel time. Farmington can achieve a 360-seconds travel time mark to a small portion on the town's northern border. Shortsville can arrive at the town line within about 360 seconds of travel time.

FIGURE 6-14: 360-seconds Travel Time Bleed of Mutual Aid Stations into City and Town

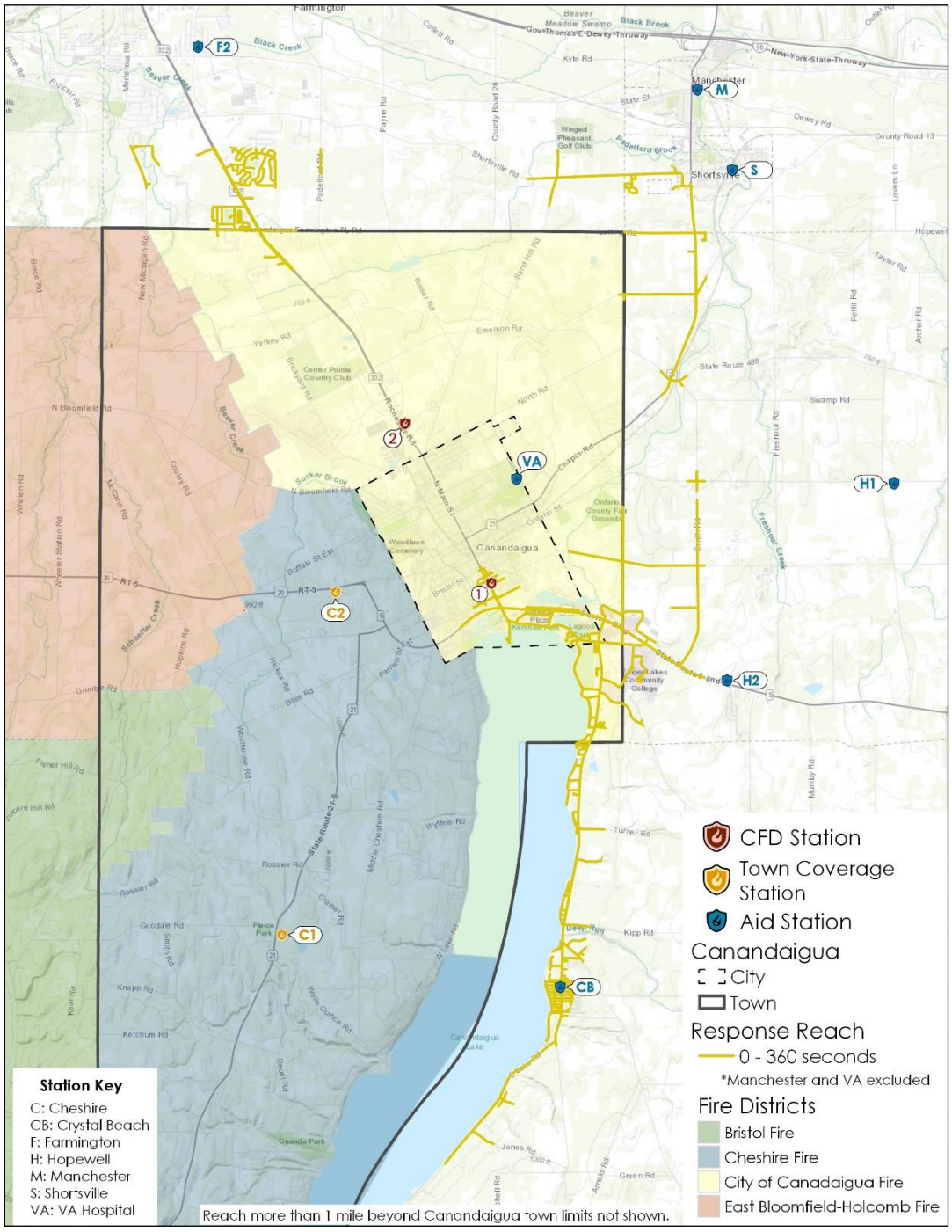


Figure 6-15 illustrates a 480-seconds travel time bleed. The southern half of the city, and southeastern corner of the town is well covered within this time frame, which would increase the number of stations within this benchmark travel time even farther. In addition, areas along the town's northern and eastern borders are within this travel time, as well as even a small portion of Cheshire's area adjacent to the city.

FIGURE 6-15: 480-seconds Travel Time Bleed of Mutual Aid Stations into City and Town

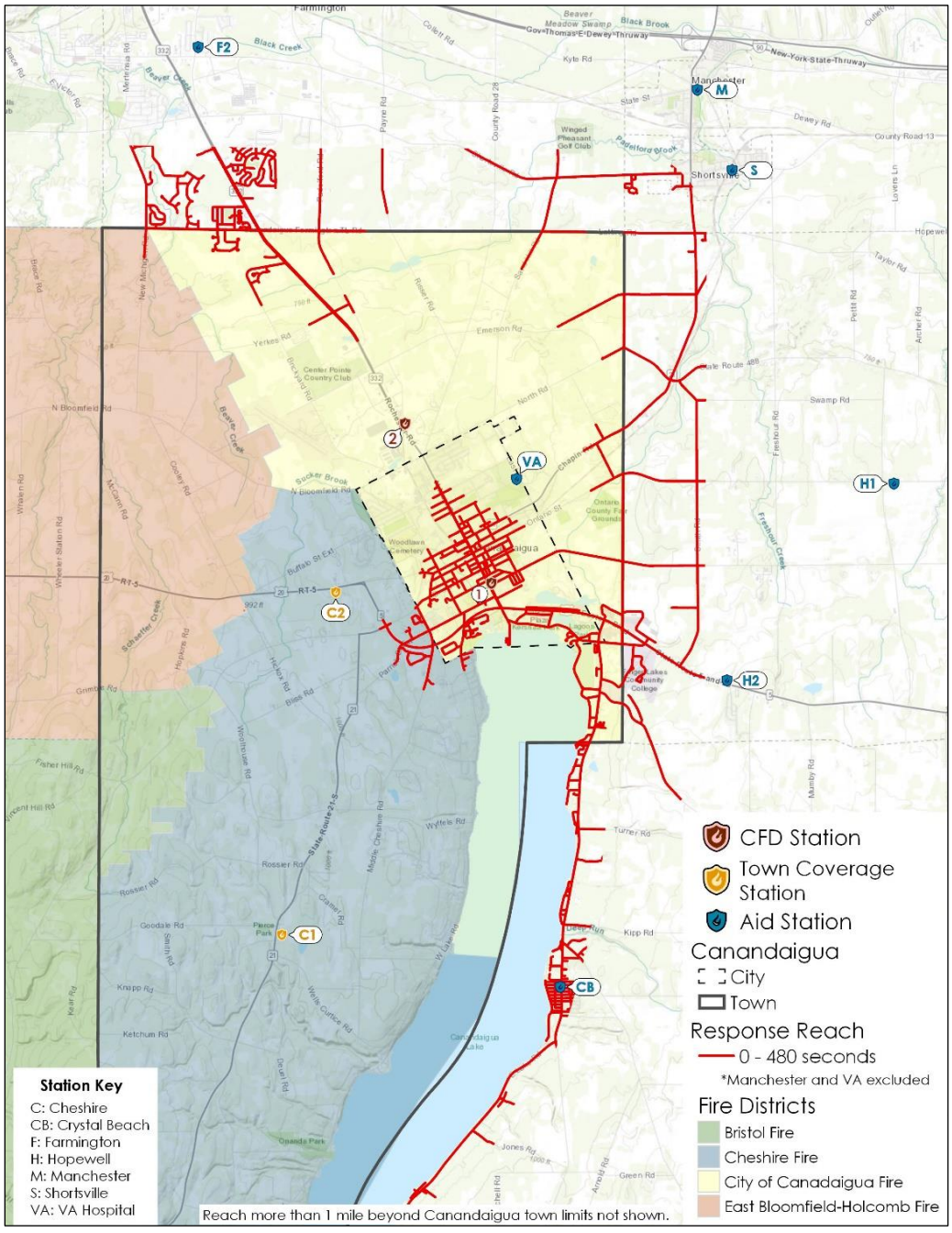
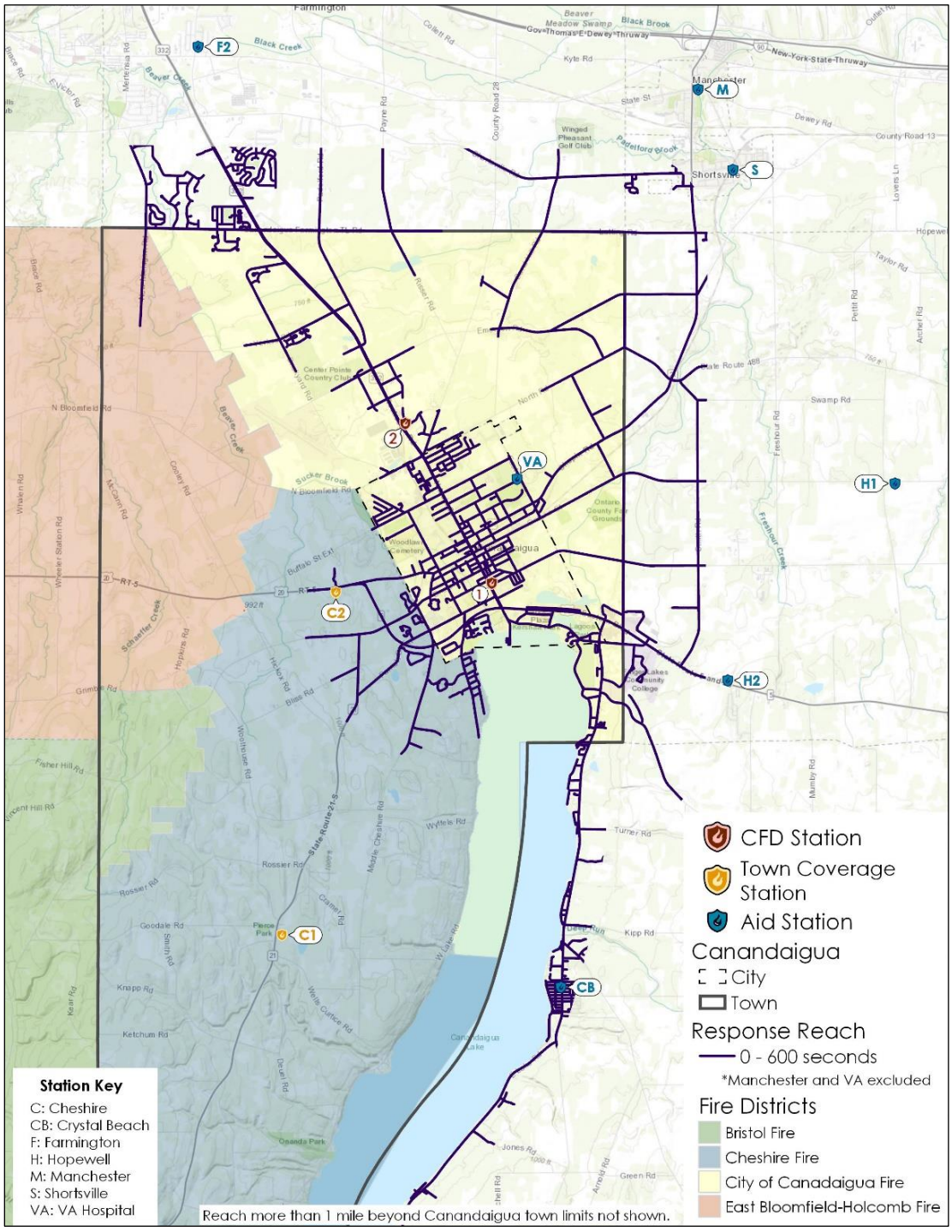


Figure 6-16 illustrates the areas that are within 600 seconds of travel time from these fire stations. All the city as well as the majority of the CFD's coverage area in the town, along with a small portion of Cheshire's response district, all fall within 600 seconds of travel time for these other mutual aid stations.

FIGURE 6-16: 600-seconds Travel Time Bleed of Mutual Aid Stations into City and Town



Recommendation:

- In order to increase the Effective Firefighting Force (EFF) initially deployed, and reduce response times for all units and personnel to arrive on location, the Canandaigua Fire Department and the fire departments that serve the Town of Canandaigua should enter into operational agreements with surrounding mutual aid departments for the simultaneous dispatch of specified resources, on automatic aid, for any reported structure fire that occurs in the City or Town of Canandaigua. (Recommendation No. 12.)

If the incident ends up being minor in nature the additional resources can be quickly returned to service. In the spirit of reciprocity, the city and town will need to be able to provide assistance immediately to those communities when they have a reported fire.

SECTION 7. FIRE SERVICES SUSTAINABILITY

There is no "right" amount of fire protection and EMS delivery for a community. It is a dynamic model based on such things as the expressed needs of the community, community risk, population growth, and ability/willingness of the community to fund the desired level of service. Providing the right amount of fire protection, and by extension the number and status (career, part-time, on-call, volunteer) of personnel for a fire department is based on several factors. First, the community must decide how to manage its level of risk based upon what resources it can afford to commit, and thereby avoid making the community vulnerable to an undesirable event. Fire departments also calculate risk levels for the community and their personnel in the form of a Community Risk Reduction Analysis, and Standards of Coverage (SOC). It is the responsibility of elected officials to translate community needs into reality through direction, oversight, and the budgetary process. It is their unenviable task to maximize fire and other services within the reality of the community's ability and willingness to pay, particularly in today's economic environment.

From all accounts, once they arrive on the scene of an emergency, the personnel in the fire departments that protect the City and Town of Canandaigua perform their duties competently and can be counted upon to complete assignments given to them. They should be commended for their efforts and given the support they need to continue to try to be successful.

However, although these fire departments possess a number of very definitive, positive attributes, they also face serious challenges today and in the future. With volunteerism declining and the ranks of volunteer emergency services personnel dwindling nationwide, the City and Town of Canandaigua face the dual challenges of attempting to balance a credible emergency response system staffed primarily with volunteer members while simultaneously facing an increasing number of requests for service, both emergency and non-emergency. This increase is fueled, at least in part, by continued growth, particularly in the town. Unfortunately, successful recruitment efforts of volunteer personnel are not particularly high. These challenges are mirrored in the town, traditionally a rural community that desires to maintain its small-town feel, appeal and way of life.

The biggest challenges facing both the City and Town of Canandaigua are providing a fire deployment model with sufficient personnel, consistently and in a timely manner, to respond to the increasing number of emergency incidents they are called upon to mitigate.

In any volunteer organization, the recruitment of new personnel is only one component of the challenges faced. In many cases, the more daunting challenge is the retention of volunteer staff and retaining these valuable human resources once they become members of the organization. According the National Volunteer Fire Council (NVFC) 2017 statistics:[26]

- There are 814,850 volunteer firefighters in the U.S., comprising 70 percent of the nation's fire service (NFPA, *U.S. Fire Department Profile Through 2015*).
- The majority of fire departments in the United States are volunteer.
- Of the total 29,727 fire departments in the country, 19,762 are all volunteer; 5,421 are mostly volunteer; 1,893 are mostly career; and 2,651 are all career (NFPA, *U.S. Fire Department Profile Through 2015*).

26. http://www.nvfc.org/hot-topics/key-fire-service-facts

- Donated time from volunteer firefighters saves localities across the country an estimated $139.8 billion per year (NFPA, *The Total Cost of Fire in the United States, 2014*).
- Small and mid-sized communities rely heavily on volunteer firefighters. Small communities (populations under 10,000) across the U.S. are typically protected by all-volunteer departments. In some cases, however, these communities have hired a few paid firefighters to assist. Mid-sized communities (populations between 10,000 and 100,000) are typically served by departments that use a combination of volunteer and paid firefighters.
- The number of volunteer firefighters in the U.S. has declined significantly over the past four decades. Pennsylvania, which has one of the strongest volunteer fire service traditions in the United States and boasts more volunteer fire companies than any other state, estimates that the number of volunteer firefighters in the state has declined from around 300,000 in 1976 to about 50,000 today.
- While the number of volunteer firefighters is declining, the age of volunteer firefighters is increasing.
- Fire department call volume has nearly tripled in the last 25 years, mainly due to a sharp increase in the number of EMS calls and false alarms (NFPA, *Fire Loss in the United States 2012*). This includes a 29.2 percent increase from 22,406,000 to 31,644,500 calls in the 10-year period between 2003 and 2013 (NVFC).

Major factors contributing to the volunteer decline are outlined in Table 7-1 on the next page.

TABLE 7-1: Volunteer Retention and Recruitment: Root Causes[27]

Sources Of Challenge	Contributing Factors
Time Demands	• the two-income family and working multiple jobs • increased training time demands • higher emergency call volume • additional demands within department (fundraising, administrative)
Training Requirements	• higher training standards and new federal requirements • more time demands • greater public expectation of fire department's response capabilities (broader range of services such as EMS, Hazmat, technical rescue, etc.) • additional training demands to provide broader range of services • recertification demands
Increasing Call Volume	• fire department assuming wider response roles (EMS, Hazmat, technical rescue) • increasing emergency medical call volume • increase in number of automatic fire alarms
Changes In The "Nature Of The Business"	• abuse of emergency services by the public • less of an emphasis on social aspects of volunteering
Changes In Sociological Conditions (In Urban And Suburban Areas)	• transience • loss of community feeling • less community pride • less of an interest or time for volunteering • two-income family and time demands • "me" generation
Changes In Sociological Conditions (In Rural Areas)	• employers less willing to let employees off to run calls • time demand • "me" generation
Leadership Problems	• poor leadership and lack of coordination • authoritative management style • failure to manage change
Federal Legislation And Regulations	• Fair Labor Standards Act interpretation • "2 in, 2 out" ruling requiring four firefighters on scene before entering hazardous environment • Environmental Protection Agency (EPA) live-fire burn limitations
Increasing Use Of Combination Departments	• disagreements among chiefs or other department leaders • friction between volunteer and career members
Higher Cost Of Housing (In Affluent Communities)	• volunteers cannot afford to live in the community they serve
Aging Communities	• greater number of older people today • lack of economic growth and jobs in some towns
Internal Conflict	• disagreements among departmental leaders • friction between volunteer and career members

In November 2005, the IAFC Volunteer and Combination Officers Section (VCOS) released a report titled *Lighting the Path of Evolution: Leading the Transition in Volunteer and Combination Fire Departments*. This report further expanded on issues and strategies for maintaining high service levels to the community, and safety for emergency response personnel while simultaneously keeping costs down. One prominent question asked in the report was "How can fire departments ensure the delivery of services are reliable?" The answer was the development of a list of "indicators for change," where fire department managers and local government

27. *Retention & Recruitment for the Volunteer Emergency Serves: Challenges & Solutions*. National Volunteer Fire Council and United States Fire Administration (FA-310), May 2007.

leaders need to be cognizant of warning signs pointing to potential problems and "prepare for change before it is forced on them by external circumstances." These "indicators" of change include:

Community Growth – Generally speaking, the larger the community, the larger the call volume, and the higher level of service people expect.

Community Aging – Maintaining an appropriate level of service depends on the fire department's ability to recruit new and younger members.

Missed Calls – This is a critical issue because 1) it is a failure that is highly visible to the public, and 2) there is an over-reliance on mutual aid for coverage.

Extended Response Times – This is a reliability problem as the public is not provided the appropriate service.

Reduced Staffing – This is a serious problem as the safety of citizens and responders is at a greater risk.

Most of these issues appear to have applicability to the City and Town of Canandaigua. These warning indicators are not an indictment of anything wrong in Canandaigua; the same problems are facing call and volunteer fire departments across the country.

CURRENT STATE OF THE FIRE SERVICE DELIVERY SYSTEM

As analyzed and observed by CPSM, the current state of the fire service delivery system in the City and Town of Canandaigua, which includes factors such as available staffing, risk, future community growth, available funding, and demand for service is as follows:

- The city's current fire department staffing is substandard and provides a false sense of security regarding its limited capabilities caused by the lack of adequate staffing.
  - There are just two career firefighters on duty at most times and who staff two response vehicles from two separate stations. This situation is unsafe for the firefighters both in the station and on the emergency scene. It also does not provide for effective and efficient response to emergency incidents.
  - The city has just four active volunteer firefighters who are interior structural firefighting qualified.
  - The city is rarely able to initially comply with the OSHA two-in/two-out regulation; this usually limits initial tactical operations to defensive attack only.
  - With its extremely limited staffing the city is unable to handle even a relatively minor dwelling fire without mutual aid assistance.
  - It often takes a considerable period of time to assemble an ERF for fire incidents, which limits the tactical options available, increases the time necessary to control or extinguish fires, and may result in increased property damage.
  - There have been several incidents over the past two years where the lack of an adequate ERF hindered firefighting operations.
  - The majority of the career firefighters were laid off in 2010, which reduced the on- duty career staff from the existing three or four per shift. Over time, rehiring personnel has brought the department back to the current contingent of nine (not counting the Chief), with two career staff on each shift.

- The four career captains do not directly supervise anyone and perform driver/operator duties rather than those of an officer and first-line supervisor, such as performing incident size-up, establishing incident priorities, determining initial actions such as initial hose line placement, etc.
- The city has had limited programs and then success recruiting and retaining new volunteer personnel.
- The student firefighter program has had limited success.

- The percentage of city fire department responses that overlap with at least one other incident has increased from 18.1 percent in 2015 to 22.5 percent in 2017.
- The current contract between the City and Town of Canandaigua requires that Station 2, located in the town, is staffed 24/7.
- New York state law limits flexibility for career firefighter work schedules, and in all probability increases costs, by mandating no more than a 40-hour work week. This law precludes the use of the three-platoon work schedule utilized in many parts of the United States.
- New York state civil service rules preclude the use of paid on-call staffing models as it requires such personnel to take and pass a civil service test. Even positions such as a volunteer recruitment coordinator fall under the auspices of civil service. This limits the flexibility of communities to try innovative approaches to solve their fire department staffing challenges.
- The city and town have a limited number of fires; however as analyzed in this report, the city does have a significant level of risk. While the town has less potential risk due to its more rural nature, it is transitioning into a more suburban community and anticipates a significant increase in development and population over the next decade. This will translate into increased fire risk resulting in increased demand and requests for service.
- All the volunteer fire departments that were interviewed for this study identified recruitment and retention of new members as a significant concern and challenge.
- Several of the volunteer fire departments that have fire service contracts or provide mutual aid cited an aging membership as a growing concern.
- Neither the city nor town have established any formal standards of cover (SOC) for fire response or staffing.
- Current county 9-1-1 protocols make it difficult to track and analyze full and accurate incident response times.
- With just a few exceptions, neither the city nor town utilize automatic aid to its full potential by having additional resources dispatched simultaneously on structure fires, and other potentially serious incidents, in an attempt to more quickly assemble an ERF.
- The town's contracts for fire services establishes no performance criterion at all for the companies that protect it. This situation can create four very distinct levels of service depending upon which service area the incident is in.
- All the surrounding mutual aid departments expressed a willingness to provide assistance whenever they are needed, but almost unanimously expressed:
  - Significant concern over the levels of staffing in the city, and,
  - No desire to provide the City of Canandaigua's fire protection for them.

- The city in particular has fiscal challenges that could impact its ability to provide the desired level of service.

- It should be noted, however, that while not part of the fire services contract, Cheshire also responds to EMS incidents in its district a total of around 200 times per year. The city also recently started responding to EMS incidents in its town service area.
- Bristol's contract is for $20,486 and in two of the last three years (2014 & 2016) there were no fire calls in its district.

- Funding needs were prominently mentioned by many of the fire service providers as a major obstacle for them moving forward.
  - Fundraising burnout was listed as a growing problem.
  - Some estimates have been made that the average volunteer spends about 80 percent of his or her time commitment to the fire department raising funds rather than training or responding to emergencies. This at time when volunteerism is declining, the number of incidents continues to increase along with the time required for training, and when the average new volunteer, who is the future of the volunteer fire service, has absolutely no interest in dedicating time to traditional fundraising activities.

OPTIONS FOR A SUSTAINABLE FIRE PROTECTION SYSTEM

CPSM believes that moving forward, both the city and town will need to take a multipronged approach to the delivery of fire protection services. Part of that approach should involve a more integrated delivery of services, including looking at the possibility of a more regional approach.

City of Canandaigua

The first step the City of Canandaigua should take is to apply for a SAFER grant to recruit and retain volunteer members. The goal of the SAFER grant program is to enhance a fire department's ability to comply with staffing, response, and operational standards established by NFPA and OSHA (NFPA 1720 and OSHA 1910.134). Specifically, SAFER funds assist a fire department to increase its staffing and deployment capabilities in order to respond to emergencies whenever they may occur. (SAFER grants are awarded to departments for both hiring of career personnel, and recruitment and retention of volunteer/call personnel.)

The city's grant application should note the current staffing model and lack of full response that currently exists and should indicate that grant funds would be utilized to recruit and retain to meet the NFPA 1720 fire response standard. The demographic and societal changes driving the reduction in volunteer participation needs to be reversed through utilizing innovation and best practices. CPSM believes that the city should endeavor to increase volunteer membership to 20 to 25 active, qualified interior structural firefighters.

Many communities have come to the conclusion that investing in volunteer personnel is the best practice to follow, and to that end, they have pursued some of the following strategies:

- Creating a marketing program to recruit new personnel into the department.
- Placing a prominent banner with a link on the home page of the local government and the fire department websites.
- Conducting a recruitment mailing to all residential properties in the community with information about the fire department and recruiting new members. One fire department in a city in New Jersey twice the size of Canandaigua had fire personnel knock on every door in the city to recruit new members.

- Placing signs at the entrances to the community recruiting volunteer members to the department.
- Placement of a temporary signboard at various locations in the community.
- Working with local businesses in an attempt to form partnerships that would allow employees to leave work to respond to emergency incidents when needed.
- Hiring of a volunteer firefighter "Recruitment and Retention Coordinator" to develop, implement, and coordinate these activities. This could possibly be undertaken by a number of communities as a regional endeavor.
- Implementing a Length of Service Awards Program (LOSAP) for volunteer personnel who achieve certain training and response levels.
- Providing for a reduction in property taxes, or a tax abatement incentive, for volunteer service.
- Providing volunteer firefighters with community-based benefits.
- Implementing an incentive for members that attain a level of more than 25 percent response. An example would be to provide gift certificates for local restaurants, concerts, or other entertainment as a reward for attaining a high level of response.

The city should also consider implementing the various financial incentives that are contained in the Erina Hose Company president's volunteer recruitment and retention analysis, if legal, and in accordance with/permitted by New York state law...

In the public sector, many of these benefits can be controversial, particularly in this era of tight budgets. One example of an unconventional and innovative best practice that we feel would work in Canandaigua is to provide a health insurance package for self-employed, year-round residents, provided they complete training and certification, and provide the city with a designated level of immediate response. A portion of this cost may be eligible to be incorporated into a SAFER grant. Typically, this type of program attracts electricians, plumbers, mechanics, and other trades and who would be beneficial to the organization.

Obviously, health insurance is expensive, and costs seem to escalate on an annual basis. However, self-employed tradesmen are also confronted with this cost. The ability to join the city's health benefit plan or a plan through the city for volunteer firefighters in itself may reduce their cost and offer an attractive incentive. Further, the city could develop a sliding scale that would pay a percentage of the health benefit cost equal to the level of response provided by the responding firefighter, thus creating a win-win situation.

One possible cost share could be based on the system shown in Table 7-2 on the next page.

TABLE 7-2: Possible Health Insurance Percentages Based on Participation

Percentage of Training and Incident Response	Percentage of Health Care Expense Paid by the City
75% or greater participation	50%
60% - 74% participation	40%
50% – 59% participation	30%
33% – 49% participation	20%
20% - 33% participation	Eligible to enroll at the employee's cost
Under 20% participation	Not eligible to enroll

Neither the city, town, or fire department/companies really have a prominent message on their websites recruiting volunteers and none really discuss on their websites the expectations of being a volunteer firefighter. As has been noted previously, leading recruitment and retention issues center on time demands of the person who seeks to volunteer as a firefighter. The CFD could seek to minimize this demand by arranging for volunteer duty groups that respond, when needed, to handle more minor incidents. In many programs of this type this means that a volunteer must commit to one duty night every week. The goal of this program is to ensure that a minimum of three volunteers are posted at the station during certain hours, typically between the hours of about 6:00 p.m. and 6:00 a.m. In Canandaigua, since these personnel would be working in conjunction with the on-duty career staff, it would help to ensure that two fire apparatus can immediately respond on a fire call for service, thus significantly enhancing the firefighting force. There would be additional time requirements for volunteers as well, predominantly in the area of training.

To maintain a successful once-every-seven-nights volunteer duty crew of three members, it would take a minimum of 21 volunteer members. Realistically, however, each shift should be up-staffed by one additional member to maintain the minimum three-person duty crew, as there should be allowance for scheduled absences. Thus, to maintain the minimum staffing of three volunteer members per night over seven duty crews, the CFD should strive to maintain 28 volunteer members trained and released to engage in interior firefighting operations.

If the city were to provide each member on the duty crew a stipend for each night of $75.00, the annual cost to provide this additional staffing would be approximately $110,000. Other costs include personal protective equipment, uniforms, and training.

It is imperative that the Canandaigua Fire Department more aggressively recruit and retain combat (ability to engage in interior firefighting) volunteer firefighters and develop programs that increase the retention of these members so that any additional increase in career staff can be transitioned over a planned and measured period. The CFD has guides and resources to assist in this endeavor, as does the Fireman's Association of the State of New York through their RecruitNY program, and the Federal Emergency Management Agency, among others.

There may be community members who can only volunteer on the weekends or during the day, which currently is a challenge for the CFD as there is not a large turnout of volunteer members during these time frames. Flexibility in recruitment and retention should be a goal, with a focus on balancing the needs of the organizational staffing.

Volunteer members of the department, along with off-duty and part-time personnel, are alerted through a paging system and either respond to the station to staff appropriate apparatus (off-duty and part-time firefighters) for response to incidents. Volunteer members generally respond to the scene of the emergency in their own vehicles.

For the Canandaigua Fire Department, delayed turnout or non-turnout of department assets complicates overall response. This is because other responding units, in particular the responding command officer, are not aware if a member or members is or is not responding or can respond to assemble additional crews. The department is currently evaluating several options to help address this situation.

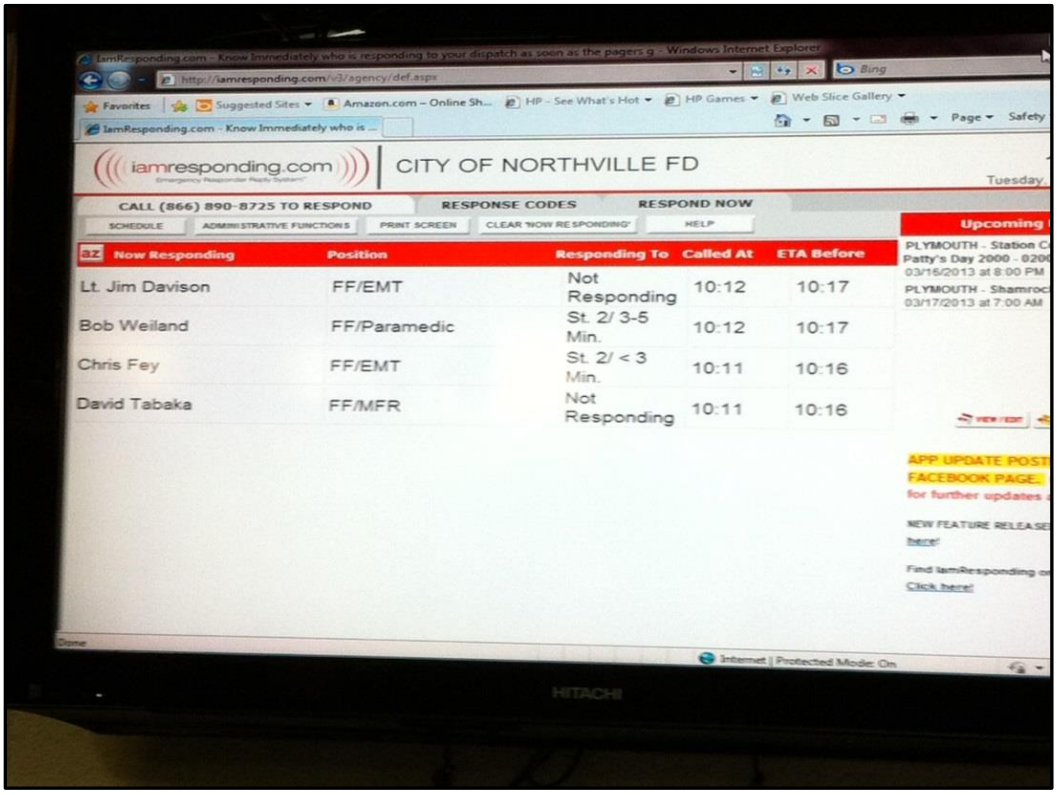
There are two main systems available to help monitor member response. One is *Iamresponding*, the other is *Active911*. Both operate on similar principles, and utilize cellular phones as the member alerting device. Both are digital messaging systems that deliver alarms, maps, and other critical information instantly to first responders. They also enable response efforts to be monitored in real time.[28]

These products and other alerting systems integrate cellular phones and smart phones with web-based computer software and can alert stations, officers, and other crew members that a member is responding to the station and what the estimated time of arrival is. Essentially, the call is dispatched and received through a group paging system. The volunteer member activates his/her response through one touch of a button on any phone, and their response is registered on all display monitors, either fixed or mobile. Monitors are connected to any computer system, fixed or mobile. Large monitors in each station would enable arriving members to visualize who is still responding, so that a decision to respond the apparatus with already arrived in-station crew members is better made. Additionally, the command officer could have available in his/her unit a monitor that tells him/her what stations have crew members responding to the station and if additional apparatus can be relied on for a specific response.

Both *Iamresponding* and *Active911* have some or all these features. Figure 7-1 on the next page illustrates a large station monitor mounted on a wall so that arriving members can visualize who is still responding. Figure 7-2 on page 84 illustrates the same information from a smart phone.

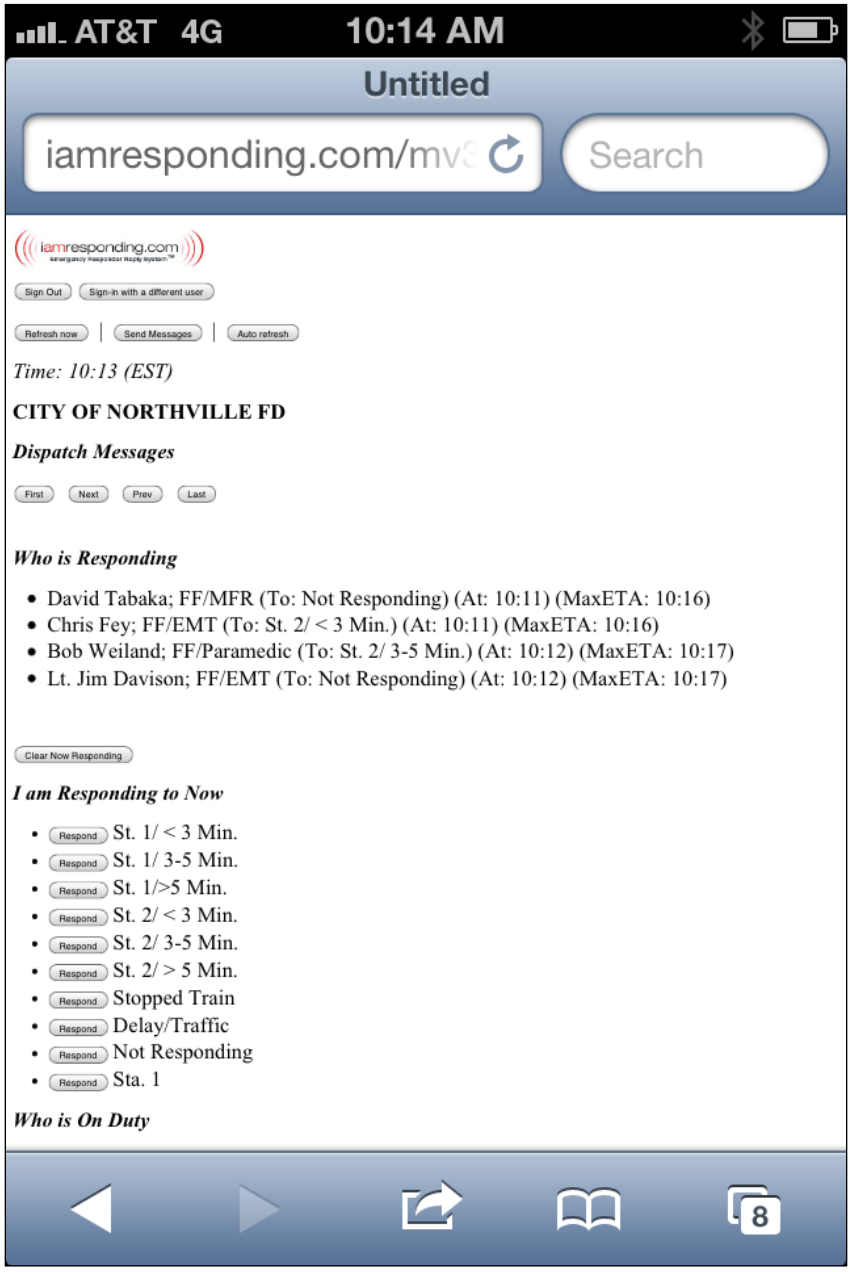
[28] http://www.active911.com/

FIGURE 7-1: Response Software: Station Monitor



Source: Northville City Fire Department, Northville, Michigan. iamresponding emergency responder reply system.

FIGURE 7-2: Response Software: Smartphone



Source: Northville City Fire Department, Northville, Michigan. *iamresponding emergency responder reply system.*

Regardless of the success of volunteer recruitment and retention efforts, the fact is that volunteer staffing will most likely always be limited, particularly during certain hours of the day and days of the week. It is anticipated that the number of incidents the department responds to will continue to gradually increase each year. In addition, the current career staffing and deployment model is unsafe and inefficient. As currently configured, particularly with the shortage of available volunteer personnel, and strictly due to their limited staffing and ineffective deployment model, the career staff is barely able to perform the most basic fireground functions early in an incident.

While the City of Canandaigua has valid concerns over the sustainability of adding additional career staff, the fact is that it is necessary to assist with developing a credible effective

firefighting force. As a result, **CPSM recommends that adding career staff on 24-hour shifts, although coming with a cost, should be considered at this time.** While how many career staff to add and when the positions are added is a policy decision, in the long term, and if funding is available, adding one career member per shift over the next three fiscal year periods would enhance staffing levels to a total of three career staff per 24-hour shift period, deployed together to respond with one engine (or quint). When augmented with a volunteer duty crew at night, this deployment model would be further enhanced during this time with the immediate response of a second staffed unit.

Even if a robust and active volunteer force can be developed, the availability and surge capacity these members provide is still likely to be inconsistent, particularly during weekdays and even during weekend daytime periods. Adding one additional career firefighter during the weekday hours to increase on-duty staffing to four should also be considered. During this time two personnel could respond in the squad to EMS incidents, leaving two additional personnel available for any additional incidents. In addition, two personnel could use the squad to conduct inspections and preplanning activities while still meeting the remainder of their crew on scene quickly for emergency incidents.

Many fire companies that serve communities near where there are one or more residential colleges have found that implementing a live-in firefighter program can be an excellent way to bolster their available staffing. Well-managed, live-in firefighter programs provide a ready source of staffing to assist with emergency response, provided the live-ins actually spend significant time in the station. These programs are ideal for college students who are interested in emergency services and are looking for alternative housing accommodations. Live-in programs provide a set of standards to which the member must agree in exchange for a place to reside. If the firehouse environment is attractive to a potential live-in member, that person will spend most of his/her day at the firehouse if it provides a positive atmosphere, sufficient privacy, and adequate quarters. Many fire departments in the National Capital Region have utilized live-in programs for decades. A program of this type, which would be an expansion of the current student firefighter program, could provide Canandaigua with an additional source of staffing. (Appendix B)

Town of Canandaigua

The issues facing the Town of Canandaigua are different from the city, driven primarily by the fact that the town does not have its own fire department and instead contracts with other entities to provide fire protection. The town's fire services contracts with the entities that provide protection to the town contain no response standards, response time benchmarks, or any other type of quantitative performance measures. As a result, it would be very difficult for the town to quantify and evaluate whether the level of fire protection it is receiving is adequate and meeting its needs. In addition, each of the volunteer departments has different training and certification requirements. With the population of the town projected to grow more than 18.5% over the next several decades (with some estimates approaching 50%), the town should reasonably expect that the requests for fire services will experience a significant increase as well. This will further strain the volunteer fire companies that provide protection to the town.

The volunteer fire companies that provide service to the town all have some type of volunteer recruitment and retention programs in place. CPSM was informed that these programs have met with varying levels of success. Several common themes that arose were: 1) that the number of volunteers was declining, 2) that the active core membership that really drives the companies is aging, 3) finances are becoming an increasing concern (one company informed us they are tapping their reserves to fund their annual operations).

Small communities have traditionally gotten a great value from their volunteer fire services. In addition to the fact that their personnel costs are extremely low, in many cases the local municipality provides only a fraction of the amount of funding necessary for the department to operate effectively. The expectation, perhaps driven by long established fundraising traditions in the volunteer services and the communities they serve, continues to this day. In some cases, it is estimated that the average volunteer spends about 80 percent of their time commitment to the fire department raising funds rather than training or responding to emergencies. Compounding this issue is the very real fact that volunteerism is declining at a time when the number of incidents continues to increase along with the time required for training. Fund raising is a time-consuming effort that, in our opinion, does not make effective use of the valuable time of volunteer personnel. Traditional fundraising activities such as breakfasts, dinners, and bingo no longer provide any significant return on the time and effort it takes to hold them. In addition, younger members of volunteer fire and emergency services have little interest in participating in traditional fundraising activities, believing instead that they are making a significant contribution of time just to train and respond to emergencies. These are not trends that are going to be reversed and the municipal governing body will need to also adjust to these new realities as they relate to funding their fire protection needs. This is especially the case with regard to the Cheshire Volunteer Fire Department, which is the town's primary, and resident, fire protection provider.

In June 2017, the town issued a request for proposals (RFP) for fire and rescue services specifically in the northern part of the town currently protected by the city. Responses were due in late July 2017. Responses to the RFP were received from the City of Canandaigua and the Shortsville Fire Department. The Hopewell and Farmington Fire Departments, although expressing some interest, did not submit formal proposals. The Bristol Fire Department did not submit a proposal but did express interest in maintaining its current response area.

When examining the travel time bleed maps found in Section 6, Response Time Analysis/Station Locations, none of the fire departments that submitted proposals would significantly improve service to the area in question. In addition, the departments that submitted bids are all staffed entirely with volunteers so there is the added time for personnel to respond to the station upon receipt of a call. These maps are based upon travel time after emergency units are responding. Personnel responding to the station can add several minutes or longer onto the overall response time. The city provides an immediate response since its facilities are staffed 24/7.

CPSM recommends that although they have served the town well for many years, the use of the East Bloomfield and Bristol Fire Departments to provide service to the town is of limited benefit any longer. As illustrated in Section 6: *Response Time Analysis/Station Locations*, neither department can provide timely response into their designated areas of the town. In addition, in two of the last three years, Bristol has not had a single incident in its town response area. It is our opinion that the current Bristol response area could be covered by Cheshire, particularly from its new Station 2. East Bloomfield's response area in the northwest section of the town could be covered by the city in a timely manner, particularly since the CFD is staffed with career personnel. It is important for us to note that this recommendation is not in any way a reflection on the excellent services that have been provided for many years by either of these departments. It is merely a reflection of changing times and the associated attempts to provide more efficient service. The funds that are allocated to these contracts could then be redirected to other fire protection purposes.

Since the town already contracts with the city, and by virtue of the fact that as the only department in the area that has a career component (not including the VA hospital) and can, for the most part, guarantee an immediate response (unless they are committed on another incident), the town should consider enhancements to its contract with the city to expand the

use of the career firefighters for automatic response to incidents throughout the town. This will result in an improved level of fire protection. As an example, in the City of Vineland, New Jersey, which covers 69 square miles, but has only one career-staffed station and five volunteer-staffed stations, the career engine responds automatically to every incident during the day from 7:30 a.m. to 5:00 p.m. They respond automatically 24 hours a day for any dispatch that involves an actual or potential fire and any motor vehicle accident that involves possible entrapment. If the City of Canandaigua enhances its on-duty staffing as recommended in this report the CFD personnel could also be utilized for EMS first response in additional areas of the town, further reducing the stress on the volunteer personnel.

Regionalization/Shared Services

In most municipal governments residents of the community, the voters/stakeholders/ taxpayers, choose the elected officials who will represent their interests and serve as the governing body. A key question that should be asked is: "*If taxpayers could choose their public services, would they choose the services they receive today?*" This question can grow even more complicated when the emergency services providers are autonomous or independent organizations.

The idea of giving up total local control is always a proposition that gives elected officials and their constituents pause and has been one of the obstacles to true regionalization or consolidation, particularly in the northeast where small communities and the time-honored concept of home rule are deeply ingrained in the culture. However, the constantly escalating costs of attempting to provide the same level service is becoming a more and more difficult task. Scarce tax resources that are being stretched to the limit are now in real danger of tearing or breaking. Smaller communities which have far fewer resources and options than their larger neighbors will find it especially difficult to cope within the limitations imposed by the new financial reality. The continuing trend of declining volunteerism will create simultaneous challenges that will stretch even further the provision of emergency services in many communities.

It is important to understand that regionalization and consolidation, which are terms often used interchangeably, are actually very different. Regionalization occurs when two or more jurisdictions share the cost for a service or item. Consolidation occurs when jurisdictions combine their personnel and their inventory into a single entity. Consolidations are typically more costly than just leaving things as they are (although there still may be good reasons for them).

Notwithstanding these types of limitations, regionalization can often provide better services, at a better overall cost to the citizens. If implemented properly, regionalization can successfully:

- Lower costs and increase efficiencies.
- Increase purchasing power, allowing for higher-end acquisitions.
- Make professional staff from larger jurisdictions available for assistance.
- Improve access to state and federal grants.
- Increase citizen satisfaction.

One key to regionalization is to understand what you *do not* want to do. There are plenty of ideas for regionalization that, prima facie, are wonderful. The trick is to triage these and pick the ones that really will work for each specific organization.[29] In addition, when dealing with volunteer emergency services personnel, the governing bodies need to be certain to include

29. http://mrsc.org/Home/Stay-Informed/MRSC-Insight/November-2012/Regionalizing-Local-Government-Services.aspx

them in every step of the process, and be aware of the potential ramifications of making changes these personnel do not fully support or buy into. While the governing body should not be held "hostage" by threats from emergency services personnel to quit if the decision does not go their way, elected leaders do need to understand that volunteers have a much different level of investment than career staff do and thus it is more difficult to mandate changes such as a forced regionalization or consolidation. However, when automatic and mutual aid become an integral and in fact mission critical component of daily operations, it is probably time to consider what the next logical step is to better integrate those operations is.

CPSM recommends Canandaigua give serious consideration to entering into discussions with other local governments on the possibility of regionalization of their protection services, although this should be recognized as long-range strategic planning. There are numerous resources that can assist with undertaking this endeavor, such as:

- *Fire Department Consolidation, Why & How To Do It …Right*, by VFIS (Volunteer Fireman's Insurance Services) in York, Penn.
- New York Department of State. "How to Consolidate Fire Protection in Fire Districts, Fire Protection Districts and Villages."

While we certainly understand that regionalization of services in the Canandaigua area is at most appropriate for long-term planning at this point, the time to start discussions and exploring possible options is now.

Of great importance when considering the impact of regionalization on volunteer members, fire stations should be encouraged to embrace their respective identities, even though they now operate as a single unit.

Although regionalization and consolidation efforts do often focus primarily on saving money, Jeff Weltz, Co-Executive Director, North Hudson Regionalized Fire & Rescue in New Jersey, once noted, "The number one charge that we had in putting this (regionalization of the North Hudson Fire & Rescue Department) together is not how much money it was going to save, but will it save lives and provide a better fire protection to our citizens." Robert McCoy, Chief of the York Area United Fire and Rescue in Pennsylvania, shares simple advice for any local departments that are considering consolidation: "Put public safety before monetary concerns and be prepared for a long, drawn-out consolidation process. I fully, truly believe in the concept of regionalization and the concept of shared services as long as the safety of residents comes first."[30]

The City of Canandaigua and the Town of Canandaigua already have a close working relationship on several fronts. In particular, for fire protection their operations already have a degree of integration. CPSM believes that opportunities exist to tangibly improve the level of fire protection that is afforded to both the city and town, as well as possibly some of the other communities if they were interested in participating.

CPSM recommends that the city and town enter into discussions regarding the possible formation of the Canandaigua Area Regional Fire Department, or perhaps Finger Lakes Regional Fire Department, and which would provide fire protection services to the entire city and town through a single entity. If additional partners, such as Crystal Beach, which already relies heavily on the city for assistance are interested, they should be included as well.

The formation of a regional fire department would allow for better deployment and utilization of the area's fire protection resources, particularly with the ongoing, and projected, growth in the

30. http://standardspeaker.com/news/york-area-chief-shares-experience-in-creating-regional-fire-department-1.1467623

town which will further strain the limited existing resources. Benefits to be gained include more widespread utilization of the city's existing career resources; better deployment of resources; reduction in duplication of assets such as aerial apparatus; and more uniformity and coordination of training, responses, personnel, and operations throughout the service area. Many of the day-to-day administrative duties would be handled by the Fire Chief, as he already does for the city. In conjunction with the governing bodies and managers of the participating municipalities engaging in annual goal setting, he/she would be able to establish criterion for training, responses, and other operational considerations and then analyze and evaluate them in an ongoing manner. The investment in volunteer recruitment and retention efforts will also have more widespread impact. With strong leadership, this fire department could become not only a model regional endeavor, but a model combination fire department as well.

Fire Suppression Systems

Automatic sprinklers are highly effective elements of total system design for fire protection in buildings. Sprinklers are proven to produce large reductions in the number of deaths per thousand fires and in average direct property damage per fire, especially in the likelihood of a fire that has the potential for a significant loss of life or large property loss. As well, sprinklers do so much quicker, and often more effectively and with less damage than firefighters do. No fire safety improvement strategy has as much documented life safety effectiveness as fire sprinklers because sprinklers actually extinguish the fire, or at a minimum hold it in check and prevent flashover until the arrival of the fire department.

In 2007-2011, fires in all types of structures, when sprinklers were present in the fire area of a fire large enough to activate sprinklers in a building not under construction, sprinklers operated 91 percent of the time.[31] When they operated, they were effective 96 percent of the time, resulting in a combined performance of operating effectively in 87 percent of reported fires where sprinklers were present in the fire area and fire was large enough to activate sprinklers.[32] In homes (including apartments), wet-pipe sprinklers operated effectively 92 percent of the time. When wet-pipe sprinklers were present in the fire area in homes that were not under construction, the fire death rate per 1,000 reported structure fires was lower by 82 percent, and the rate of property damage per reported home structure fire was lower by 68 percent compared to homes without sprinklers.[33] In all structures, not just homes, when sprinklers of any type failed to operate, the reason most often given (64 percent of failures) was shut-off of the system before fire began.[34]

While built-in fire protection should significantly reduce the spread of fire, it may not completely extinguish the fire. Firefighters still need to complete the extinguishment and perform ventilation, overhaul, and salvage operations.

Like many northeastern states, the New York state building and fire codes do not mandate the installation of sprinklers in all new construction. Though the law prohibits municipalities from requiring these systems, the fire department can approach developers/builders/owners to discuss the pros of sprinkler systems during the approval process, including for residential systems for subdivisions and large single-family residences, and encourage them to consider the installation of these life safety systems. This approach would be particularly important with the ongoing and projected development in the town. There are several publications that the fire department can use as resources to market the benefits of residential fire suppression systems,

31. U. S. Experience with Sprinklers. John R. Hall, Jr. National Fire Protection Association, June 2013.
32. Ibid.
33. Ibid.
34. Ibid.

including from NFPA, which has developed standards for fire suppression system design and installation.

One option that both the city and town may want to explore is the possibility of developing a grant program to fund the installation of fire suppression systems in building that are being renovated but may not otherwise require their installation. Elgin, Illinois, recently implemented a program like this in its downtown redevelopment district.[35] (Appendix C) While a program of this type has obvious fire safety benefits it will probably take decades before even a majority of structures would be fully protected with sprinkler systems. Financing a program, depending upon the scope and scale of it, could also be a challenge. Nonetheless, it is a worthwhile concept for the city, and to a lesser extent the town, to explore further.

Recommendations:

- It is strongly recommended that Canandaigua Fire Department take steps to aggressively recruit, train, and utilize volunteer firefighters to increase daily fire suppression staffing and establish realistic recruitment, retention, and volunteer member utilization goals. Recommendation No. 13.)
- The Canandaigua Fire Department should work to foster a recruitment and retention program that focuses on: membership flexibility; marketing the volunteer program to millennials; and continuous retention efforts focused on increasing the retention rate of volunteer members through recognition of efforts, a friendly and diverse work environment, mentoring for advancement in the organization, sustaining current incentives, and researching and implementing new incentives as funds are made available. (Recommendation No. 14.)
- The City of Canandaigua should explore various financial incentives for volunteer firefighters, including exploring the feasibility of providing health benefits and implementing a LOSAP program for personnel who meet certain training and response criterion. (Recommendation No. 15.)
- The City and Town of Canandaigua should explore the feasibility of utilizing, and in fact encouraging, city and town employees to perform "dual roles" by serving not only in their full-time positions but also serving the fire departments as volunteer firefighters. (Recommendation No. 16.)
- Once the number of trained and certified volunteer firefighters is increased to a reasonable number, the Canandaigua Fire Department should implement an in- station duty crew program that will supplement the on-duty career staffing, and which will reduce the necessary fire department time commitment for the volunteer personnel. (Recommendation No. 17.)
- In conjunction with the administration of colleges in the Finger Lakes Region, the Canandaigua Fire Department should examine if it is feasible to start a live-in firefighter program. (Recommendation No. 18.)
- Combination career/volunteer departments require strong leadership and specialized fire officer skills to manage firefighters effectively. The Canandaigua Fire Department should enhance its fire officer training to include the volunteer management component. (Recommendation No. 19.)
- The Canandaigua Fire Department should research and determine the most appropriate web-based alerting system for volunteer and off-duty members so that response of individual members can be monitored for each call. Ultimately, the response of dispatched apparatus then can be monitored by command officers so that appropriate emergency scene decisions

35. http://www.chicagotribune.com/suburbs/elgin-courier-news/news/ct-ecn-elgin-sprinkler-grant-st-0216-20180215-story.html

can be made based on available and responding or potentially responding apparatus. (Recommendation No. 20.)

- The optimum daily career staffing of the Canandaigua Fire Department is four personnel. This level is necessary to manage the potential fire risk identified herein, and provide a single, adequately staffed fire suppression resource available for immediate response. However, CPSM understands the current funding capability of the city does not support this staffing level. Given these current challenges:
  - CPSM recommends that the city add one career member per shift over the next three fiscal year periods to enhance staffing levels to a total of three career staff per 24-hour shift period.
  - Add one additional career firefighter during the weekday hours to increase on-duty staffing to four.
  - Recruit and retain combat volunteer firefighters to augment weeknight and weekend career staffing. (Recommendation No 21.)
- The Town of Canandaigua should consider reducing the number of organizations that it contracts with for fire protection to two: the City of Canandaigua and the Cheshire Volunteer Fire Department. (Recommendation No. 22.)
- The Town of Canandaigua should negotiate with the City of Canandaigua for automatic response by the career city engine to all calls during the daytime hours when volunteer personnel are less available, and for 24 hours a day for any reported fire or other potentially serious incident. (Recommendation No. 23.)
- The City and Town of Canandaigua, along with any other interested and/or potential partners such as Crystal Beach, should enter into discussions for the purposes of exploring the feasibility of a more regional approach to fire protection delivery systems, and in particular, if a merger or consolidation into a regional fire department may be in their best interests. (Recommendation No. 24.)
- The Canandaigua Fire Department should develop a compelling public education program that can be used by all fire departments in the area and which includes discussing the benefits of installing fire sprinklers in all new construction including residential systems in new one- and two-family dwellings. (Recommendation No. 25.)
- The City and Town of Canandaigua should consider the feasibility and cost/benefits of offering grants for the installation of fire sprinkler systems in buildings that are being renovated/redeveloped. (Recommendation No. 26.)

END

APPENDIX A

MEMORANDUM

To: Chief Frank Magnera, Canandaigua Fire Department

John Goodwin, City of Canandaigua Manager

Ellen Polimeni, City of Canandaigua Mayor

From: Eric A. Cooper, President, Erina Hose Company No.1

Date: March 13, 2018

Subject: Potential Efforts to Recruit and Retain Volunteer Firefighters

As everybody has fully acknowledged, we need more volunteers. In the last 20 years, we have lost most of our active volunteers. As such, it is clear that we must improve how we recruit and retain volunteer firefighters. In an effort to address and progress, I delved into the literature to see what we could potentially change.

This memo's suggestions deal with changes to how we market volunteering, the requirements of volunteering, and how we reward volunteers. In essence, it focuses on why current volunteers may do so, why those who might want to volunteer do not join or continue serving, and it tries to find programs that will keep or attract those potential volunteers currently unable to commit. Continuous improvements on the margin is the goal.

While reading, I encourage you to place yourselves in the shoes of our potential volunteers – somebody who is interested in volunteering and serving their community but, for family or work reasons or for not knowing has not yet stepped up. As you read this with that in mind, would the following action items make you more inclined to volunteer.

Please keep in mind that this is a rough list. How programs are designed must still be determined. This step should be used to find programs we think might be beneficial for getting volunteers through the door. Further defining of programs may lead them to be unworkable.

Why do people volunteer?

As far as mindset goes, one study of volunteers showed that the motivation lies with: Helping the community; being a part of a team or social group; and/or community pride. This same study showed that most members aren't really looking for financial incentives, but they will accept it in a limited fashion. Incentives can be useful for helping to retain members but were not the sole factor for volunteering.

For our own purposes, it may be beneficial to survey our volunteers and former volunteers to see why they got involved. We can use this information to develop and target marketing materials. It is my understanding that Ontario County is currently surveying volunteers county-wide. This may provide useful information to us.

I can speak for myself and Ryan Zanghi when I say that our volunteering was entirely due to our concern for the community and our desire to help our in times of emergency. Incentives did not play a factor in our decision. However, in our attempts at recruiting new members, it seems clear that having additional selling points may be beneficial in getting potential volunteers to actually step through the door. Consider, it may not be the incentive itself but the signal that an incentive gives to potential volunteers that they will be appreciated and taken care of.

Why do people leave the volunteer ranks?

"Excessive up-front time demands are a barrier to recruitment."

Numerous studies have reported on those leaving the volunteer ranks. Those results include:

Poor Leadership	Lack of Time	Time Devoted to Fundraising
Health/Medical Problems	Family Responsibility	Relocation
Other Interests	Competing Demands	Problematic Organization
Not Being Asked to Stay	Personality Conflicts	Lost Interest/Burnout
Not Feeling Needed	Too Much Training	Attitude Regarding Newcomers
Lack of Camaraderie	Deteriorating Social Aspect	Affordable Housing
Regulatory Mandates	Aging Volunteers	Friction Btwn. Career/Vol.

[36], [37]

While each of these items were noted by their respective studies, they can perhaps be further consolidated. Lack of Time may cover many of these items. Social items and failures to communicate and bond with others make up a good portion of those reasons.

Crafting Benefits and Incentives:

As a volunteer must be able to navigate not only the fire service but also the social aspects of serving at a moment's notice while also balancing other goals, tasks, and obligations,

[36] Recruitment and Retention Strategic Plan of the Firemen's Association of the State of Pennsylvania September 2013
[37] DHS – Recruitment and Retention, Page 14-26

many of the following benefits are targeted in a manner to attempt to balance the costs of volunteering. If we ID a volunteering cost, we might then attempt to reduce costs where possible or reward the action to negate the associated cost.

More Paid Positions with CFD: One of the major reasons people will volunteer for our company is the hope of becoming a paid firefighter someday. The belief in the potential of obtaining a good job as a firefighter in the future is a substantial motivator for a lot of volunteers. It also promotes a good social culture within the department and may allow for greater training opportunities for volunteers. Increasing paid positions may have a tangible benefit on volunteer numbers and their training.

Subsidy for Health Care/HSA: We are all aware that rising health care costs is a tremendous and growing problem along with firefighters facing greater health risks. For young adults and people with families, this consideration is constantly on their minds. As benefit costs like Health Insurance are one of the main drivers in employment costs, I doubt that we would pursue this option. However, an HSA may be an acceptable option. It's tax deductible which makes it even more attractive as an incentive.

College Subsidy: We have a program for students, we should also have one for volunteer's children. Offering donations to volunteers in the form of the NYS 529 savings account. Helps a volunteer while also helping his/her family. More information here. Also tax deductible.

Retirement Subsidy: People today have trouble starting and maintaining retirement accounts with consistent contributions. Contributions to a retirement account is also tax deductible. Donating to an HRA or something of the like.

Leadership and management training: The studies previously cited showed that leadership within the department is one of the biggest factors in a volunteer's failure to stay active. Providing leadership training and management training relevant to the volunteer fire company can be helpful in creating an atmosphere conducive to growth.

Property Tax Benefits: Expand benefit to landlords who provide rooms to certified/eligible firefighters for (x) number of months to include renters. Some departments provide property tax exemption for life with at least 20 years of service. NY State currently offers a certain deduction and City might look into expanding it. Lowers cost of housing for firefighters and could make Canandaigua more attractive for trained firefighters looking for a place to live.

Gym Membership: Right now we only partner with the YMCA, but we have numerous other gyms in our fire district. Not only that there is an explosion of people doing crossfit; whose patrons are of a demographic and lifestyle potentially similar or attractive to firefighters. Other gyms like Anytime Fitness offer options

for those with a difficult schedule. We should look to expand gym options. While this is a good benefit as it helps keep our firefighters fit, perhaps we could form the program as a rebate for going to the gym (x) number of times. Would be nice to have an incentive for actually using the benefit and getting in better shape.

Incentivize Training: Pay volunteers immediately upon completing training for FF1, amount tbd. As the studies found, the immediate costs required of training are so large that many potential volunteers will leave. An *immediate* benefit could be effective at retaining volunteers and getting them through training. While other benefits may be beneficial down the road, we need to make sure that our volunteers get trained before any of those benefits come into play.

Length of Service Award: Fairly self-explanatory. Rewards people for serving for an extended period of time. More information available from the NYS Dept. of State here.

Sales Tax Exemption: Could be done at a company level by going to community businesses and asking if they would offer an exemption for people who can show a signed card certifying they qualify as an active duty volunteer. For a more official, comprehensive exemption, that would probably require State enabling legislation and County legislation.

Tuition Re-Imbursement: This program would be targeted to former college students. They are a demographic we would like to get into the fire service due to their age and education. As student debt is a large problem, this could be a valuable incentive for a number of ideal candidates.

Scholarships: Currently provided.

Reduced DMV Fees / Hunting License: Would likely require State level changes. Not a tremendous incentive but would be nice for some of the members.

Point System: While paying per call is potentially a violation of the Fair Labor Standards Act, we could identify certain tasks/duties to be rewarded and offer (x) points for each. At the end of the year or quarterly, the top (y) number of point recipients receive a gift card or something similar. Work with local shops, businesses, restaurants to try and get gift cards donated for volunteers. Market those businesses on available platforms so they see benefits of support as well.

Small percentage **increase in foreign fire insurance** relatively popular proposal per VFIS 2013. Would be implemented above City level but City could advocate.

Reach out to FLCC to include us in discussions when they accept students. Fire departments around schools sometimes gain members, but we are somewhat at a disadvantage as FLCC is a 2-year school. Assuming it takes 1 year to train a recruit, the student may be around for only 1 more year after. If, somehow we were able to

reach students BEFORE that first year, we might be able to get more ROI in training.

Compensate mileage to volunteers during training as well as 10 dollars or something for food. Volunteers may not have enough time to eat between work and training.

BOCES: Can Fire/EMS courses be offered as a senior year program at BOCES for High School students? Valuable job training in the same sense as automotive technology.

Junior Firefighter Program: Should we re-establish this program?

Training! Create a training ladder. Reduces initial requirements and can create a modular training program. Start with BEFO, then forward. Training is one of the consistent findings in the research that contributes to a volunteer's retention. Adding increments creates psychological rewards and flexibility in training to accommodate differences in scheduling and work. For example, Ryan and I have different and difficult schedules. We need that flexibility.

Online Training Courses: Would have to be authorized at another level, but could potentially be useful in training volunteers. May help to provide the flexible training desired by volunteers.

Create a "**fast-track**" for firefighters who were previously trained elsewhere.

Community Events: Maintain contact with City Management to keep abreast of all major events in the city. Set up tables with recruitment materials. *Ongoing*

Organizations: Meet with other organizations that would generally entertain community minded individuals. Speak to these groups and members for potential volunteers.

Materials: Create flyers, business cards, posters, etc. for placement around the community.

Signs: Put Signs up in front of Stations ½. Signs requesting volunteers, but also putting up more attractive department signs. Small improvement to make Department more attractive.

Targeting Veterans: Motivation and training of individuals is similar. Reach out to organizations that help to transition veterans from service to home life. Having the VA nearby may be helpful.

Company support for charities: More good deeds that can be done while also raising awareness. Charity events like 5ks etc. Helping victims after tragic fires. *Ongoing*

Company Guidance: Knowing when trainings are offered and for what courses requires lots of coordination. Volunteers should be led through the process so it is as easy as possible. Physicals, Background Check, Training, etc. should all be guided through by staff or executive volunteer member. Take Leadership role in notifying volunteers of training opportunities. Incorporating neighboring counties schedules adds another layer. Having a schedule and knowing it in advance helps a volunteer plan.

Awards and Recognition: The Awards on the Department walls show that 2008 was the last time awards were given to recognize the efforts of firefighters. The recognitions are important as they provide an incentive and competitive element for firefighters to compete amongst the company. It is also a symbol that the community appreciates the efforts of volunteers. Although most volunteers do what they do because they want to improve the community, they – as much as anyone else – appreciate being recognized for donating their time and efforts. Letters to editor to thank them also. Awards could also be done by Senator, Assemblymen, City Council. Recognize for most responses and/or other significant achievements.

Professionalism: Work to implement professional company standards. Studies show that professionalism increases retainment.

Physical Standards for volunteers: Goes along with professionalism. Yearly physical test/breath-down.

Member Duties: Although interior qualified firefighters are the most important facet of extinguishing fires, many people interested in volunteering cannot fill this role. We should attempt to identify and support potential volunteers in other roles of assistance.

History: Create pride in the history of the Department. Important that volunteers feel they are part of something greater than themselves and that their legacy will live past them.

"**Everybody Get One" Program**: Put a challenge out to each volunteer to get one additional member. Potentially reward those who succeed in getting a recruit that finishes training.

Surveys and Data: Exit poll of volunteers to understand why they are leaving.[38] Use the data to update practices in the future. Climate surveys of department to effectively manage volunteers. Survey potential volunteers to see motives, hesitations, considerations, etc.

Immediate involvement of volunteers. Train to the basic skills and tools to quickly integrate them into the group. Find ways to immediately welcome them to

[38] VFPA 2013

the group. Make new recruits feel special and welcome immediately. Additionally, if we can get volunteers in and involved initially and train them for exterior/scene support work, we can keep their interest long enough for the next available training course.

Although it may not fulfill any functionality with current department structure, create a **hierarchy** to reward members for their training and longevity.

Company stickers on vehicles. Help with advertising.

Praise publically members for their duties. Letters to editor for company changes, goals, actions, etc.

Flair for company wears (Class A) to show achievement and longevity.

Open-House: Have a company dinner annually that is open to the community. Welcome everyone into the fire hall.

Seeking membership feedback (Four C's). Compliments - What do you think is good about the fire department? Convictions - What are your beliefs about the direction of the fire department, and what is your vision for its future? Concerns - What current or potential problems need to be addressed? Comments - Do you have anything else to say about the department?

Mentor program for new volunteers

Wearing the Uniform at community events. Attending local sport events in Job Shirts. Council meetings in Class A.

Income Tax Deduction – Currently set at $200. Maybe an expansion would be beneficial. Does not really cover the costs/time of volunteering. Would require lobbying State gov't in a year of fiscal deficit.

Business tax credit for supporting volunteers. If they allow them to respond to calls or train during work hours.

Fire Station upgrade: See Ithaca.com article at the end of memo. If the firehall was more enticing and comfortable, young people might be more willing to spend time at a fire hall. We should attempt to recreate the social atmosphere of previous years that many current volunteers miss. Our current station is very unwelcoming in its décor and amenities.

Include flyers and informational material in **City-wide mailers**. Send out info on potential property tax rebates with property tax invoices. Every water bill. Sending information on tax benefits to volunteering with a tax bill might be a cost effective method to get us some volunteers.

Including volunteer companies to a greater degree in decision making processes regarding the fire department. If there is an issue to come before council that

might impact the department, proactively reach out to the company to request their review and comment. At the very least it builds goodwill for zero cost between the Company and City.

Permissible Benefits Spending Program. As people and their desire for assistance may change each year based on needs. One year they may desire tuition assistance, the next debt relief, and then whatever else. Perhaps require a first of the year reauthorization form from volunteers choosing a particular program for each year.

Remaining/Continuing Questions:

As society becomes more transient and people move from place to place more often setting down less roots, how do we entice and get volunteers knowing that they may not be around for more than a few years?

Kids love firefighting. How can we maintain their interest from a young age to when they are eligible to volunteer?

How will we actually choose to implement most of these programs and how much will they cost? Each one may be beneficial to recruitment/retention but if cost is exorbitant, administration is overly burdensome, or there is no feasible way to design it, it may need to be tabled.

Resources

Recruitment and Retention Strategic Plan of the Firemen's Association of the State of Pennsylvania September 2013, Firemen's Association State of Pennsylvania.

Report to the Senate of the Commonwealth of Pennsylvania, November 2004. Senate Resolution 60 Commission.

Setting the Record Straight: The Real Facts About a Professional Fire Service, 2015. NYSPFF.

Characteristics of Individuals and Employment Among First Responders, August 2015. US Department of Labor.

Retention and Recruitment for the Volunteer Emergency Services: Challenges and Solutions, May 2007. FEMA.

http://www.fireengineering.com/articles/print/volume-169/issue-4/departments/volunteers-corner/recruiting-and-retaining-members.html

http://news.cornell.edu/stories/2013/04/student-volunteer-firefighters-gladly-take-heat

http://www.ithaca.com/news/too-few-at-a-fire-declining-volunteer-numbers-leave-departments/article_55af4c2e-6498-11e6-a585-2381c4f8a7a7.html

http://www.fireengineering.com/articles/pt/2017/10/volunteer-firefighters-growing-older.html

APPENDIX B

GLASSBORO FIRE DEPARTMENT LIVE-IN POLICY

I. Purpose

In the interest of public safety, in order to reduce response times and to guarantee in station staffing with as little cost to the borough of Glassboro as possible, the Glassboro Fire Department has established living facilities for volunteer members. These facilities are available at no cost to the members. In return for housing the live-in members will provide services to the Fire Department as described in the following articles. This document will establish the selection process and rules and regulations of these live-in members.

II. DEFINITIONS

A. 'Fire Department' refers to the Glassboro Fire Department

B. 'Live-in Members' refers to those members who occupy the fire department living facilities as their primary residence and have a room assigned exclusively to them.

C. 'Bunk-in Members' refers to those members who, on occasion, occupy the living quarters of the fire department, but do not use it as their primary residence

D. 'Fire Officers' refers to the officers of the Glassboro Fire Department, both career and volunteer, including Chief, Assistant Chief, and all Captains and Lieutenants.

E. 'Senior Live-in' refers to the live-in who is selected by the Fire Officers to have authority over the Live-in facility. This carries no operational rank, but only assigns in-house responsibility.

F. 'Duty Shift' refers to the periods of time when live-in members have committed to staying in station.

III. APPLICABILITY

These articles apply to all members of the Glassboro Fire Department, paid and volunteer, with regards to the live-in facilities.

IV. LIVE-IN SELECTIONS PROCESS

A. The selection of live-in members will be at the discretion of the Chief and Assistant Chief and/or their designee. When vacancies occur, the opening must be posted for at least 15 days in a conspicuous place in the firehouse prior to it being filled.

B. Requirements to apply for live-in status are as follows:

1. Applicant must be 18 years of age.
2. Applicant must be accepted into the volunteer membership according to the existing application policy.
3. Applicants must read and understand the Live-in Policy and agree to sign the corresponding contract if selected for live-in status.
4. Applicants must possess the following certifications:
    a. NJ State Firefighter I
    b. NJ State Hazmat Operations
    c. American Heart Association CPR
5. Applicants will be given special consideration for possessing the following certifications.
    a. NJ State Firefighter II
    b. Vehicle Extrication I or higher
    c. NJ State EMT
    d. Rapid Intervention Team Operations
    e. NJ State Fire Inspector
    f. NJ State Incident Management Level I or higher
6. Applicants must provide appropriate proof of employment and/or proof of enrollment in and institution of higher learning at the time of their application.
7. Applicants must submit a written application to the Chief along with copies of all necessary certifications and must submit to an oral interview with the Chief and Assistant Chief and/or their designee.
8. The application process will be as follows:
    a. Announcement of Vacancies
    b. Application
    c. Interview
    d. Background Check
    e. Acceptance of Offer and Contract Signing

V. BUNK-IN ELIGIBILITY

A. In order to stay over in the live-in facilities, or 'bunk-in' a person must be a member in good standing of the Fire Department, or be a member of the Fire Department's paid staff.

B. Any member wishing to bunk-in must possess the following certifications

1. NJ State Firefighter I
2. NJ State Hazmat Operations
3. American Heart Association CPR

C. A member may only bunk in if there is a bed available. Open beds will be available on a

'first come, first serve' basis. Exceptions to this rule may be made for special events or inclement weather at the discretion of the Fire Officers

VI. RESPONSIBILITIES

A. Live-in Members

1. Cleanliness of the live-in facility will be the responsibility of the live-in membership. The Senior Live-in will maintain a daily and a weekly cleaning responsibilities check list and will ensure that all tasks are being accomplished.

Daily tasks will include things like beds being made, kitchen and bathrooms being cleaned, etc. Weekly tasks will include things like vacuuming, emptying and cleaning the refrigerator, etc.

2. Live-in members will be required to do a minimum of 4 duty nights a week. These duty nights will be from the hours of 1600-0800 unless other arrangements have been made due to school or work. Any such arrangement should be approved by a Fire Officer. Nothing short of 10hrs will be allowed to count as a duty night.
3. While on duty, live-in members will be dressed in a professional manner. This will consist of dark blue work pants or shorts, black boots or sneakers, and a Glassboro Fire Department t-shirt. At times when it is required by the Senior Member or the Fire Officers the Class B uniform will be worn.
4. During the hours of 1600-2000 on duty shifts, live-ins will be expected to be in the fire station. During this time they will be expected to participate in training and assist with daily station chores.
5. Weekly training will be put out by the Fire Officers and the Senior Live-in. This is expected to be performed by all members over the course of the week during the 1600-2000 period of time while they are on duty.
6. In addition to their required duty nights, live-in members will be required to respond to calls at all periods of time that they are on the fire department grounds. Unless school work or job related tasks excludes them from it, they will participate in the daily duties of the paid staff while they are on the fire department grounds.
7. No one is to be sleeping before 2000 or past 0900 unless their job or schooling requires them to keep an abnormal sleep schedule.
8. The Senior Live-in will maintain a monthly schedule to ensure that the duty times are filled each day. The station should be staffed with a minimum of 3 people at all times. It will be the senior member's responsibility to ensure that this is accomplished.
9. At the beginning of each duty shift, members will check their PPE and place it near the seat which they will be riding that shift. Riding assignments for the duty period will be assigned by the Senior Live-in or by the Fire Officer in charge.

B. BUNK-IN MEMBERS

1. Bunk-in members are expected to assist in accomplishing the tasks of the live-ins as well as the paid staff whenever they are in station.

2. Bunk-in members are required to provide their own bed linens. The bed they choose

for the night should be cleared and cleaned the following morning by 0900.

3. Bunking in will be allowed for a maximum of 3 consecutive nights. If it is the intention of the member to bunk in several nights consecutively he or she will be required to make that known to the Senior Live-in ahead of time and be approved for it. If approved, his or her bedding and personal items may be left in the bunkroom until the members departure.

4. When bunking-in, members should check in with the Senior Live-in or Fire Officer for their riding assignment. Bunk in members will always be given a seat on the first responding apparatus unless they otherwise desire.

VII. GENERAL RULES

A. Live-in members will maintain a legal residence somewhere other than the firehouse or live-in facility. The firehouse and live-in facility addresses may not be used for any legal purposes by any member.

B. Personal mail will not be received at the firehouse or live-in facility. Members are encouraged to rent a PO Box or make some other arrangement for personal mail while they maintain their live-in status.

C. Members are permitted one vehicle to be parked at the live-in facility at a time. This vehicle must be maintained in working order.

D. Illegal drugs are strictly prohibited on fire department ground. If any members is found to have illegal drugs in his or her possession or to be under the influence of any illegal drug they will be immediately terminated from the live-in program.

E. Alcoholic beverages are strictly prohibited on fire department grounds. Any live-in member caught with alcohol on fire department grounds will be immediately terminated from the live-in program.

F. If a live-in members has consumed alcoholic beverages off fire department grounds he or she will be considered out of service for a period of at least 8 hours. The live-in member may return to the live-in facility within this 8 hour period, but must immediately inform the senior live-in member or the on duty career staff member that they are out of service. They will be confined to their bedroom and the bathroom until 8 hours has passed. Any live-in member who responds to a call within 8 hours of consuming alcohol will be immediately terminated from the live-in program. The time spent in the live-in facility that is within this 8 hour period will NOT count toward the members required amount of duty nights.

G. Sexual activity is prohibited on fire department grounds. Any member found to be engaging in sexual activity on fire department grounds will be immediately terminated from the live-in program.

H. Pets of any kind are prohibited.

I. Sleeping will only be allowed in the bedroom area. Sleeping on the lounge furniture will not be permitted with exception being given to times of inclement weather or other times of high call volume when the number of firefighters present exceeds the numbers of beds available.

J. Live-in members may host guests for brief visits or meals only in the common area as long as there is no objection from other present live-in members. Non-fire department members will not be allowed in the sleeping area.

K. Each live-in member must provide their own bed linens. These linens will be changed and laundered at least once a week.

L. Live-in members will keep the live-in facility, including their private bedroom as well as all common areas, clean and orderly at all times. Kitchen, laundry, and bathroom facilities will be returned to appropriate order and cleanliness after each use.

M. All live-in and bunk-in members must remain adequately clothed at all times. During duty shifts or extended periods of time in the station or live-in facility members should wear the appropriate uniform of the day. During sleeping hours members should wear, at a minimum, athletic shorts and a t-shirt.

N. Any time that a non-live in member is in station he or she will get a seat on the first responding apparatus. This includes members who are bunking in for the night.

O. When accepted into the live-in program, a member must agree to stay for a minimum of 1 year. Any member choosing to leave should make notification to a Fire Officer at least 30 days prior to moving out. When vacancies are to be filled, the Chief will post the opening in a conspicuous place in the firehouse for at least 15 days prior to filling the vacancy.

VIII. MAINTAINING LIVE-IN STATUS

A. In order to maintain live-in status a member must comply with the Live-in Policy, the policies and standard operating guidelines of the Fire Department, and the Personnel Policy of the Borough of Glassboro.

B. All live-in members must maintain all certifications that were required for their application to the live-in program.

C. Within 1 year of obtaining live-in status a member must obtain the following certifications

1. Vehicle Extrication I
2. Rapid Intervention Team Operations

D. A live-in member must maintain one of the following

1. Full time enrollment in an institution of higher learning with a GPA of at least 2.0
2. Part time enrollment in an institution of higher learning with a GPA of at least 2.0 and be gainfully employed at least 15 hours per week
3. Be gainfully employed at least 30 hours a week
4. If at any point a live-in member ceases to meet one of these three options he or she will have 30 days to become compliant.

E. Any live-in member enrolled in an institution of higher learning must provide a Fire Officer with proof of his or her GPA at each semester's end or at the request of the Fire Chief or Assistant Chief. He or she must also provide their class schedule at the beginning of each semester.

F. Any member who meets the requirements of Article VIII, D with some form of

employment must furnish for the Chief or Assistant Chief a proof of employment at their request.

G. Live-in members must attend ALL Fire Department drills and meetings unless there is a work or school conflict that a Fire Officer has approved of or special permission has been given by the Chief or Assistant Chief.

IX. SENIOR LIVE-IN

A. The Senior-live in will be selected from amongst the live-in members by the Fire Officers. He or she may or may not be a line officer of the fire department.

B. The Senior Live-in, unless he or she hold another rank in the department, is an administrative position only and holds no operational rank.

C. The Senior Live-in's responsibilities will be as follows:

1. Create, and ensure the maintenance by all members of, a daily and weekly cleaning schedule appropriate for the facility and current members at the time.
2. Ensure that all members are making their required number of duty hours.
3. Assign seating assignments for each duty shift.
4. Assign weekly training to be performed by each live-in member during their duty hours.
5. Ensure that the articles of this document are being followed by all live-in members
6. If at any point a member is found to be in violation of the articles of this document it will be the responsibility of the Senior Live-in to report this to the Fire Officers.

CONTRACT

Glassboro Fire Department Live-In Program Contract

I,_____, on_____/_____/_____, have received, read, and understand the Glassboro Fire Department Live-in Policy. I further understand that my participation in the program may be terminated at any time by the Officers of the Glassboro Fire Department. I understand that I am under the authority of the Officers of the Glassboro Fire Department and am subject to any disciplinary action they see fit if I violate the Live-in Policy, the Policies or Standard Operating Guidelines of the Glassboro Fire Department, or the Glassboro Personnel Policy. I understand that in exchange for living in the firehouse I will be required to answer calls for service as well as perform maintenance and daily housekeeping of the Fire Department facilities. I understand that the duty requirements are subject to change by the Officers of the Department as they see fit to meet the needs of the Glassboro Fire Department.

_____

Signature of Live-in Member

_____

Printed Name of Live-in Member

_____

Signature of the Chief of the Glassboro Fire Department

APPLICATION

GLASSBORO FIRE

DEPARTMENT

APPLICATION FOR LIVE-IN

MEMBERSHIP

Name

_____

Current Address

_____

Home Address (If different)_

_____

Phone Number_____Email Address

_____

Date of Birth

_____

Employer/School Attending

_____

Occupation/Major

Are you able to commit to the program for 1 year?

Please attach the following:

1. A letter written by you to the department explaining why you want to become a live- in, what you have to offer the Glassboro Fire Department, and why we should select you.
2. All relevant certifications
3. An explanation of where you would move if you were terminated from live-in membership.
4. A letter of recommendation written by someone not related to you.

Signature of ApplicantSignature of Officer Receiving Application

Elgin to launch grant program to pay for fire sprinklers in downtown residences

Elgin is set to offer financial assistance to people redeveloping downtown upper-story residential properties to help cover the cost for required fire safety improvements.

By an 8-0 vote, the Elgin City Council Wednesday night gave preliminary approval to the creation of the Sprinkler Assistance for Residential Conversions Grant Program. The program would set aside $500,000 in 2018 from Central Area Tax Increment Financing District money to help cover the installation of sprinkler systems in residences above the first floor. The measure will be up for final approval at the Feb. 28 City Council meeting.

According to meeting materials, estimates for such work ranged from $3.50 to $5 per square foot, so staff recommended a funding level of $4 per square foot for such projects.

Council member Rich Dunne suggested that developers have to put "some skin in the game," by having them pay for a portion of the sprinkler systems.

But members Corey Dixon and Terry Gavin said developers already are making substantial investments.

"I like the way it's written," Dixon said of the proposal.

"It's fine as it is. They have plenty of skin in the game," Gavin said.

Gavin and Council Member Tish Powell noted hearing from the business community that the cost of sprinkler systems has been a stumbling block and impediment to downtown economic development.

According to supporting material for the Wednesday meeting, city staff determined there are 40 downtown buildings that either have had, or appear to be able to hold upper-story units. Those units could be developed as 110 dwellings.

The grants could be used to reimburse expenses for installing a new fire sprinkler system or for code-required upgrades or repairs to existing fire suppression sprinkler systems. Any such grants would have to come before the Council for its approval, City Manager Rick Kozal said.

The meeting materials note that if the funding level does not cover the entire amount of a specific installation or upgrade, a property owner may be able to take advantage of provisions within the recently adopted federal Tax Cuts and Jobs Act. Building permit, plan review, inspection, utility and tap fees would be waived. Impact fees are already waived as the downtown was declared a redevelopment area with the establishment of the Central Area special taxing district, the material notes.

The grants would not cover drywall, paint and other interior repairs related to concealing a fire sprinkler system.

AN ORDINANCE

ESTABLISHING A FIRE SPRINKLER ASSISTANCE FOR RESIDENTIAL CONVERSIONS GRANT PROGRAM

WHEREAS, the city council of the City of Elgin has adopted Ordinance Nos. S6-99, Sl-02, S2-02, S3-02 and S4-02 proposing, approving and creating the Elgin Central Area Tax Increment Financing Redevelopment Plan and Project (the "ECA TIF District") pursuant to the Tax Increment Allocation Redevelopment Act at 65 ILCS 5111-74.4-1, *et seq.);* and

WHEREAS, the ECA TIF District was established on April 10, 2002 and will continue for 23 Years thereafter; and

WHEREAS, the upper floors of certain downtown buildings which are located in the ECA TIF District are not being conve1ted into residential dwelling units at the desired rate partly because of building code requirements requiring the installation of fire sprinklers; and

WHEREAS, city staff and the Downtown Neighborhood Association have recommended using TIF funds to cover a portion of the material and installation costs for fire sprinklers as an incentive for property owners to add residential dwelling units in the downtown; and

WHEREAS, the city council of the City of Elgin has determined, and hereby finds, that the proposed fire sprinkler assistance for residential conversions grant program will provide an incentive for property owners to add residential dwelling units in the downtown, which will in return improve the economic viability of those properties, promote greater utilization of currently vacant or underutilized buildings• and help enrich the downtown by providing more potential customers to revenue generating nonresidential establishments; .and

WHEREAS, the creation of additional residential dwelling units downtown will result in an increase in the city's tax revenues, and will result in renovation and restoration of existing buildings in the downtown; and

WHEREAS the creation of additional dwelling units downtown is currently hindered by the economic viability thereof including certain building code requirements regarding fire sprinklers and would not occur in the absence of limited development assistance from the city as provided in the proposed fire sprinkler assistance for residential conversions grant program; and

WHEREAS, in order to incent and facilitate the creation of additional residential dwelling units in the ECA TIF District and in the downtown which will further the goals and objectives of the ECA TIF District plan and project the city council has determined that it is necessary and desirable to adopt the proposed fire sprinkler assistance for residential conversions grant program; and

WHEREAS, the City of Elgin is a home rule unit authorized to exercise any power and perform any function pertaining to its government and affairs; and

WHEREAS, the fire sprinkler assistance for residential conversions grant program which will result in furthering and achieving the goals and objectives of the Elgin Central Area Tax Increment Financing Redevelopment Plan and Project, are matters within the government and affairs of the city; and

WHEREAS, the fire sprinkler assistance for residential conversions grant program wilt strengthen the commercial sector of the downtown and the city; and

WHEREAS, the fire sprinkler assistance for residential conversions grant program will enhance the tax base of the city; and

WHEREAS, the fire sprinkler assistance for residential conversions grant program is in the best interest of the city.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ELGIN, ILLINOIS:

Section 1. The city council of the City of Elgin hereby approves and establishes the fire sprinkler assistance for residential conversions grant program pursuant to the attached program document entitled "Fire Sprinkler Assistance for Residential Conversions Grant Program" dated March 13, 2018, incorporated herein by this reference.

Section 2. That this ordinance shall be in full force and effect upon its passage and publication in the manner provided by law.