Southington Fire Department

Connecticut

Master Plan

Community Risk Assessment: Standards of Cover

2022

Emergency Services Consulting International

Providing Expertise and Guidance that Enhances Community Safety

Executive Summary

Background

On April 17, 2020, the Town of Southington contracted Emergency Services Consulting International (ESCI) to produce a Fire Protection Services Master Plan and Community Risk Assessment: Standards of Cover. The purpose of the study was threefold:

1. Evaluate current operational service delivery.
2. Identify future service delivery needs.
3. Provide recommendations for operational service delivery.

Summary Findings

The fire service in Southington is made up of dedicated people, both volunteer and paid, providing a critical service to the community. However, as an organization the Southington Fire Department is in the midst of an identity crisis while simultaneously suffering from actual and perceived political oppression.

While this Master Plan offers a variety of recommendations to improve the safety of firefighters within the Town of Southington and the service provided to the community, ESCI notes that the department must define itself and manage community politics before any of the other recommendations in this plan can be implemented successfully.

The Identity of the Southington Fire Department

In 2005, the International Association of Fire Chiefs Volunteer and Combination Officers Section issued *The Red Ribbon Report: Lighting the Path of Evolution: Leading the Transition in Volunteer and Combination Fire Departments.* This report detailed the difference between "combination" and "dual" fire departments. A combination fire department is one where career and volunteer firefighters are "combined" into a single system to provide fire and emergency response to the community. A "dual" fire department is one in which career firefighters are segregated from volunteer firefighters and there is little cooperation and integration between the two. Although Southington Fire Department's administrative team supports the volunteers and is working to restore continuity within the department as a combination system, the fact that firefighters have developed individual perceptions over time regarding their role within the department makes this an issue that must be addressed.

Within the *Management Components* section of this report, ESCI highlighted the importance of establishing a current mission statement, values statement, and organizational values. As part of this process, it is imperative for the Southington Fire Department to determine its current and future identity.

As the fire department is a dynamic environment, the Southington Fire Department will need to regularly evaluate, potentially update, and then reaffirm its mission statement, vision statement, and organizational values. The exercise of evaluating, updating, and reaffirming is necessary to ensure that limited resources are appropriately deployed to satisfy the priorities of the department. It is imperative that all levels of the organization, from the newest firefighter to the town's elected officials, understand the mission and priorities of the department so that decisions made at all levels possess the same focus and priorities.

Once the Southington Fire Department establishes its identity, it must then brand itself. A brand is a product, service, or concept that is publicly distinguished from other products, services, or concepts so that it can be easily communicated and marketed. Branding is particularly important if the Southington Fire Department continues to be staffed by both career and volunteer firefighters as this arrangement must be effectively communicated to the public and leveraged to recruit both new career and volunteer firefighters.

Community Politics

The Southington Fire Department is governed by multiple political boards and commissions. While somewhat common in New England, this is not a standard practice across the country. With the department reporting to a Board of Fire Commissioners, Board of Finance, Town Council, and Town Manager, all with varying levels of understanding of fire department operations and needs, it is difficult for the fire department to achieve its goals and objectives without considerable time dedicated to educating and presenting information. The time spent performing this function detracts from the needs of the department, further compounding issues created by the lean administrative staffing currently in place.

In total, there are five Fire Commissioners, six Board of Finance Members, nine Town Council Members, and one Town Manager. This totals 20 officials who have varying levels of authority related to the fire department, of which 15 are elected officials, five are political appointments, and the Town Manager is appointed.

Feedback received by ESCI from Southington Fire Department members, both during in-person meetings and through the anonymous survey, identified politics as one of the major threats to the future success of the Southington Fire Department. With few exceptions, people who want to fight fires become firefighters and people who want to be involved politically run for elected office. Allowing politics to permeate the fire department will only detract from its mission.

Within the Town of Southington, the governing bodies have appointed administrative staff in the form of a Town Manager and Fire Chief. The purpose of these administrative professionals is to oversee the town and fire department's day-to-day operations, thus enabling elected officials to focus on big-picture policy issues. Elected and appointed officials collectively decide policy issues. Staff members are responsible for implementing that policy direction.

ESCI recommends that the Town of Southington and the Southington Fire Department better define the roles and the intersection of the authority of the Fire Chief and Town Manager with the Board of Fire Commissioners, Board of Finance, and Town Council. Further, training should be provided at the start of the term and as needed for all elected and appointed officials to ensure that policy decisions and operational decisions are made by the appropriate individuals.

Next Steps: The Strategic Plan

ESCI recognizes that this report contains a multitude of recommendations that cannot all be accomplished simultaneously. The Town of Southington has already contracted with ESCI to facilitate a strategic plan with the Southington Fire Department Stakeholders.

The strategic planning process will ideally result in a three-to-five-year work plan intended to guide the work effort of the entire organization toward a common set of goals and objectives. The process should include representation from every major interest group in the organization. Each person in the Southington Fire Department should feel that their interests are represented by someone in attendance on the planning team.

The opportunities presented in the *Opportunities and Recommendations* section of this report were intentionally designed with the idea that they could become the *Major Initiatives* within the upcoming Southington Fire Department Strategic Plan. Following the adoption of the *Southington Fire Department Master Plan*, or a variation of this master plan, the Southington Fire Department should assemble an internal Strategic Planning Team to review the findings, identify and prioritize work, and establish the major initiatives to be addressed by the strategic plan.

The strategic planning process divides the work into smaller components for accountability and to ease implementation. Once a strategic plan is created and adopted, the elements are divided among smaller task teams created from members of the organization, which results in additional buy-in. ESCI's experience is that strategic planning helps an organization focus efforts and avoid distractions outside of the goals, objectives, and priorities identified through the planning process. Budgeting should also align as much as possible with the implementation of the strategic plan.

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Introduction

The Town of Southington, Connecticut contracted Emergency Services Consulting International (ESCI) to develop a Community Risk Assessment – Standards of Cover, Fire Department Master Plan, and Fire Department Strategic Plan on April 17, 2020.

Phase I of this Project is the Community Risk Assessment – Standards of Cover and Fire Department Master Plan. This phase of the project had three primary deliverables:

1. **Evaluate current operational service delivery**. Using information provided by Southington Fire Department, ESCI was tasked to establish an informational baseline, benchmark emergency operations performance, and provide a detailed analysis of existing conditions and emergency operations.

2. **Identify future service delivery needs**. ESCI was tasked with providing a basic community risk assessment to identify potential service gaps and redundancies, considering community expectations, needs, and resources.

3. **Provide recommendations for operational service delivery**. ESCI was tasked with developing recommendations to improve and enhance emergency services delivery for both the intermediate short-term and long-term. Where possible, recommendations were to include consideration of cost/benefit analysis, benchmarks, standards, and best practices.

Phase II of this project is the Strategic Plan which is scheduled to follow the Community Risk Assessment – Standards of Cover and Fire Department Master Plan.

Acknowledgments

ESCI wishes to acknowledge all the Southington Fire Department career and volunteer firefighters who contributed to this project.

Special thanks are extended to Chief James Paul and Assistant Chief Eric Heath, both of whom were promoted into their positions during this project. Without their assistance, this project could not have been completed.

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Project Methodology

Using organizational, operational, staffing, and geographic information system (GIS) models, this evaluation provides a comprehensive appraisal of the Southington Fire Department's operations as found upon ESCI's completion of fieldwork and data collection in May of 2021. ESCI based this evaluation on data provided by the fire department and collected during ESCI's fieldwork. The information is evaluated against a combination of Connecticut state laws and regulations, National Fire Protection Association (NFPA) standards, Commission on Fire Accreditation International (CFAI) self-assessment criteria, health and safety requirements, federal and state mandates relative to emergency services, and generally accepted best practices within the emergency services community, as well as the experience of ESCI's consultants.[1][2] Each section in the following report provides the reader with general information about that element, as well as observations and analyses of any significant issues or conditions.

[1] *NFPA, National Fire Protection Association is a standard developing organization. Standards developed by NFPA are "voluntary consensus standards," created through procedures accredited for their consensus decision-making, openness, balance of interests represented, and fairness by the American National Standards Institute (ANSI).*

[2] *The CFAI organization is now a subsection of the Center for Public Safety Excellence (CPSE) but maintains its prime function of accrediting fire agencies.*

Stakeholder Input

The ESCI project team conducted more than two dozen separate virtual and in-person interviews, meetings, and facility tours to gather information from key stakeholders to provide context for the recommendations that are identified within this study. The purpose of these interviews, meetings and surveys was to gain an understanding of the current issues, concerns, and opinions related to the emergency services delivery system within the Southington Fire Department. General topics discussed during each interview included:

- Perceived strengths and weaknesses of the current system.
- Identified strengths and weaknesses of the current system.
- Opportunities for enhancement to the current system.
- Future challenges that may warrant attention.

ESCI's interviews with Southington Fire Department stakeholders included, but were not limited to, the following individuals:

Figure 1. Stakeholder Input

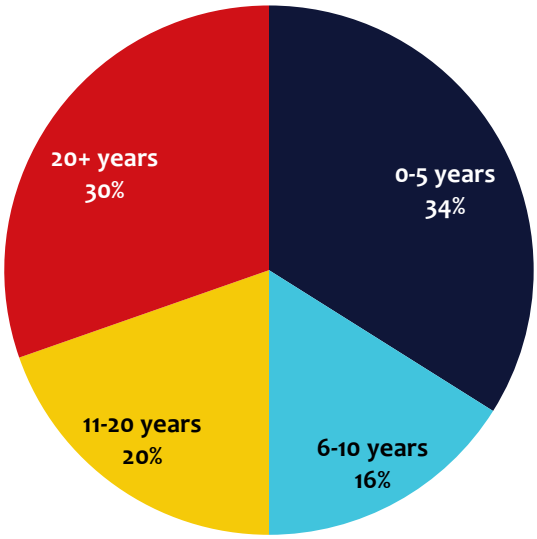
Stakeholder Interviews
Fire Department Administrative Staff
Fire Department Division Heads
Career and Volunteer Firefighters
Southington Firefighters IAFF Local 2033
Town of Southington Elected and Appointed Leaders
Town of Southington Directors and Key Staff

Internal Stakeholder Input

In addition to conducting meetings with the career and volunteer firefighters, ESCI also solicited input from the members of the Southington Fire Department using a 20-question online survey. The survey was open for participation from April 3, 2021 through May 7, 2021. The Southington Fire Department shared the survey link with its firefighters and encouraged their participation. Also, ESCI solicited input from members of the Southington Fire Department during two days of in-person meetings with on-duty crews as well as union leadership. The feedback from the in-person sessions was entirely consistent with the results of the survey. The following summarizes the results of the online internal survey.

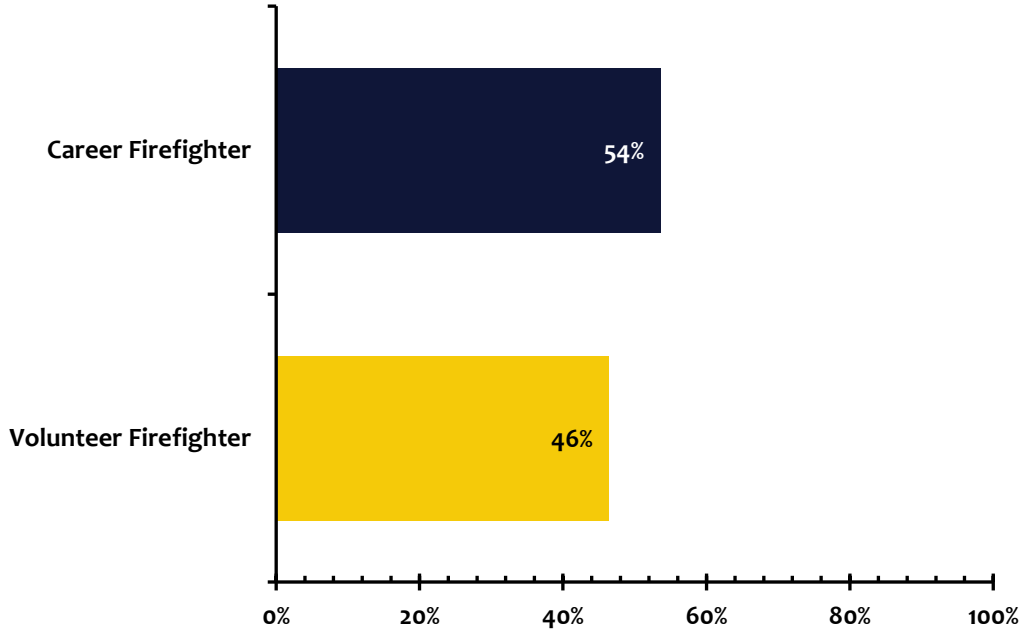
Fifty-Six members of the Southington Fire Department completed this survey. The number of years of service of the members that participated in the survey was well-distributed: 30% of the members had 20 or more years of service, 20% had between 11 and 20 years of service, 16% had between 6 and 10 years of service, and 34% had less than 5 years of service.

Figure 2. Years of Services to the Southington Fire Department



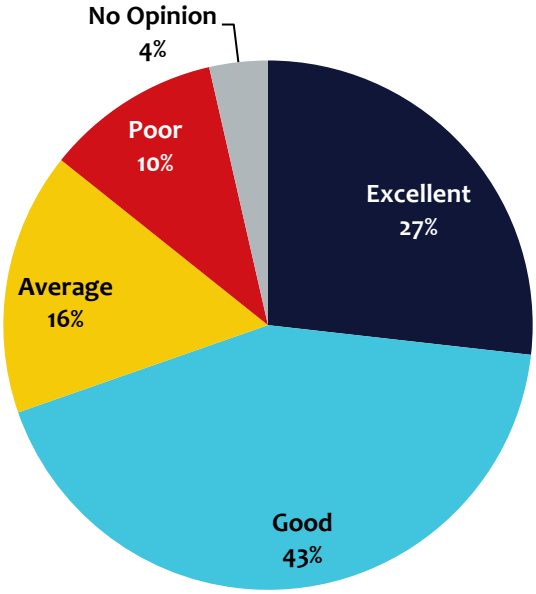
The survey participants were almost evenly divided between career and volunteer firefighters with 54% of the firefighters identifying as career firefighters and 46% identifying as volunteer firefighters.

Figure 3. Career and Volunteer Firefighter Survey Participants



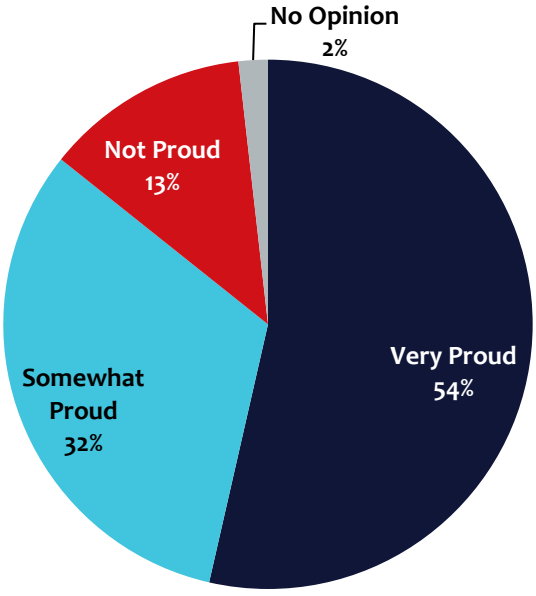
Members of the Southington Fire Department are, in general, satisfied with their work environment. A combined total of 70% reported that they have an Excellent (27%) or Good (43%) work environment.

Figure 4. Southington Fire Department Work Environment



These members are also proud to be a member of the Southington Fire Department with a combined total of 86% reporting that they are Very Proud (54%) or Somewhat Proud (32%).

Figure 5. Pride in the Southington Fire Department



The members who responded to the survey saw opportunities for improvement in the areas of communication, accountability, training, staffing, and the coordination between career and volunteer firefighters. Additionally, calls for keeping town politics out of the fire service in Southington were many and repeated. ESCI factored this input as well as the rest of that which was submitted in the survey when designing recommendations for the *Recommendations and Strategies Section* of this report.

The Internal Survey has been included in this report as *Appendix A*: *Southington Fire Department Internal Survey*.

External Stakeholder Input

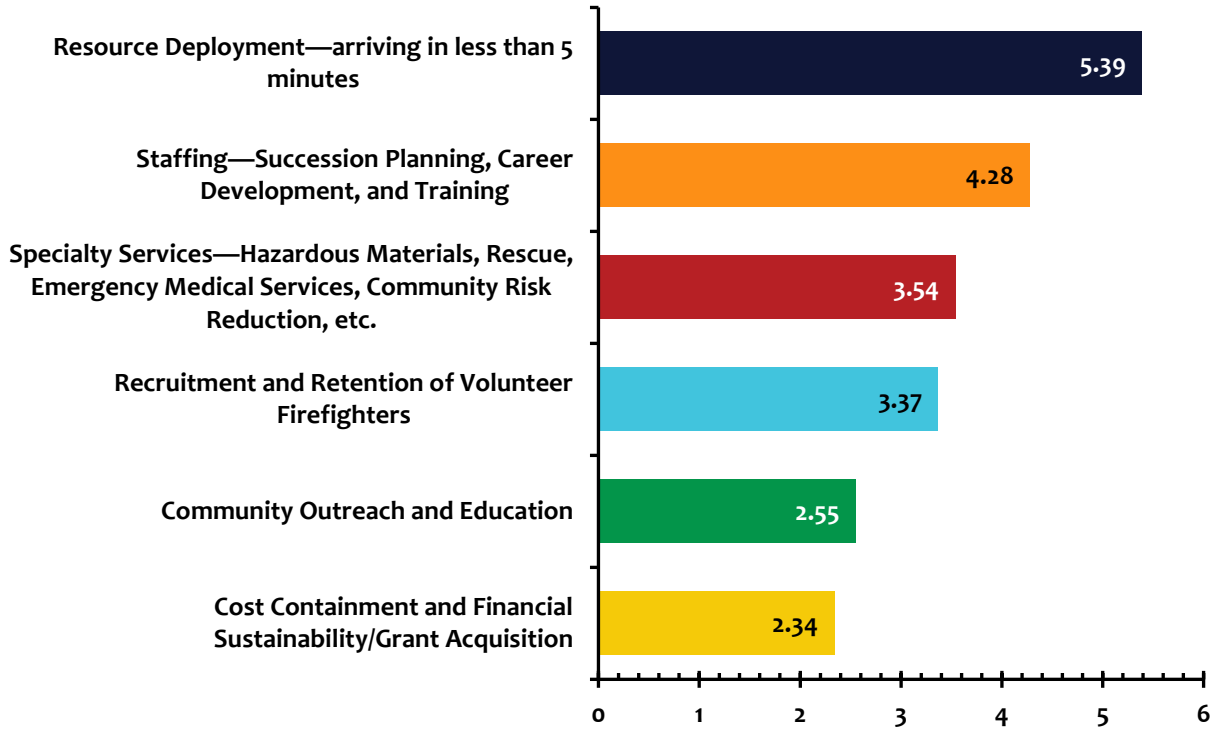
Due to Covid-19 Restrictions, instead of holding community forums, ESCI team members conducted an electronic survey for the residents and business owners within the Town of Southington to determine internal, external, and policy-maker expectations of the Southington Fire Department.

To solicit input from the Southington Community, ESCI created a nine-question online survey. The resident and business surveys were both open for participation from March 15, 2021 through April 15, 2021. The Southington Fire Department posted the link to this survey on the department website and shared information about the survey through its other normal communication channels. A total of 220 residents participated in the online surveys.

The people who participated in the Southington Fire Department Community Feedback Surveys were, in general, very pleased with the services offered by the fire department. This is a credit to the men and women of the Southington Fire Department who provide a consistently high levels of service to the community every day.

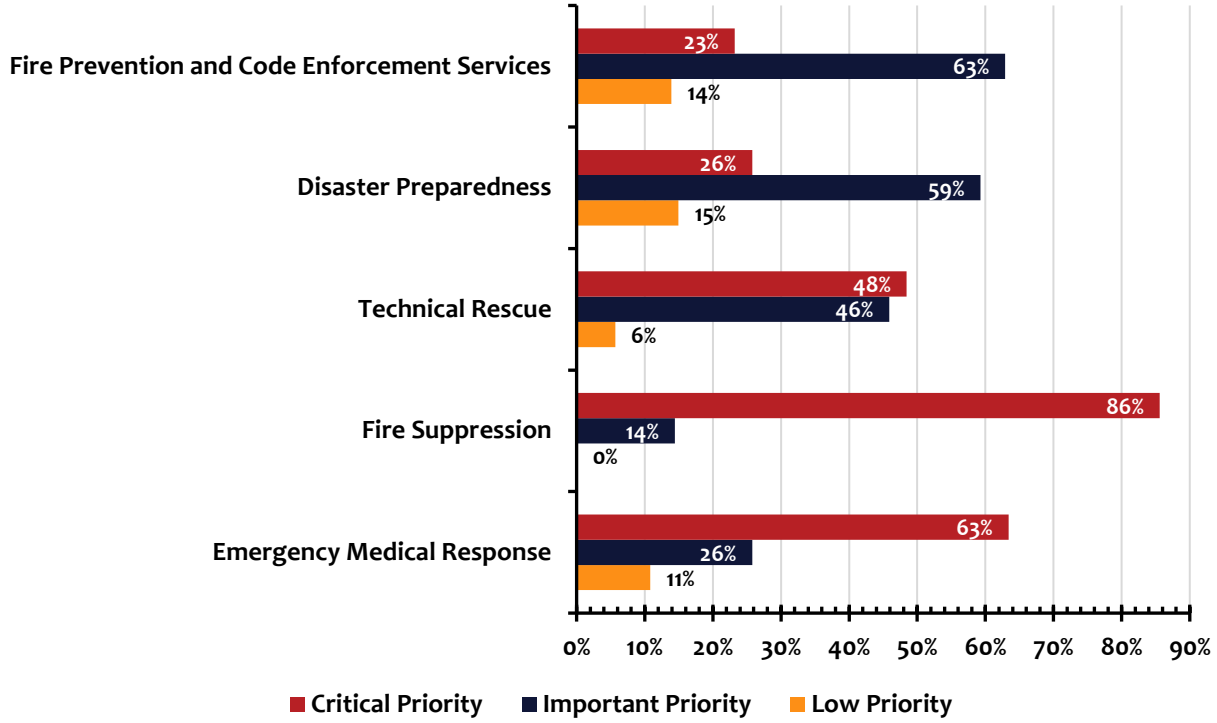
When asked to rank the following priorities, Resource Deployment – arriving in less than five minutes - was the community's highest priority. Cost containment was the lowest priority. The following table illustrates the weighted average of the survey responses on a scale of 1 to 6 with 6 being the highest priority.

Figure 6. Community Priorities



When asked to prioritize services as a Critical Priority, Important Priority, or Low Priority, 86% of the survey participants identified Fire Suppression as their Critical Priority, followed close behind by Emergency Medical Response at 63%. The citizen feedback repeatedly inquired about and, in many cases, outright requested, more fire department involvement in Emergency Medical Responses within the Town of Southington.

Figure 7. Critical, Important, and Low Priorities



In general, the people who participated in the Community Feedback Survey valued the service that is offered by the fire department. The theme that emerged through the feedback that was submitted was a desire by the community for assurance that their fire department is adequately staffed. Comments from the community indicated support to both bolster the ranks of both volunteer firefighters and career firefighters. ESCI factored this input as well as the rest of that which was submitted in the survey when designing recommendations for the *Recommendations and Strategies Section* of this report.

The survey of the Southington Residents and a detailed breakdown of the results for each question are included in this report as *Appendix B: Southington Fire Department Citizen Feedback Survey*.

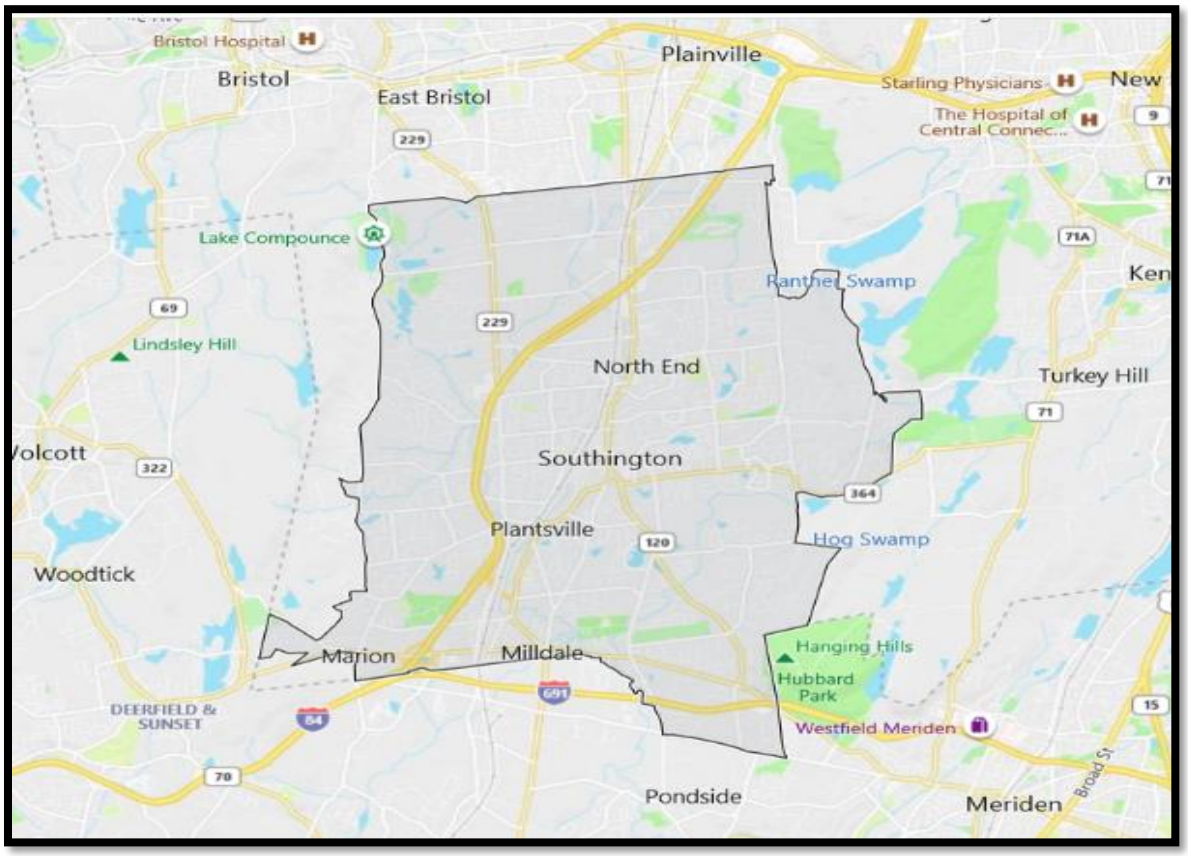
Evaluation of Current Conditions

The project begins by setting forth the current conditions within the Southington Fire Department. The purpose of this section is two-fold. First, it verifies the accuracy of baseline information along with ESCI's understanding of the Southington Fire Department's composition. This provides the foundation from which the Community Risk Assessment – Standards of Cover and Master Plan is developed. Secondly, the overview serves as a reference for the reader who may not be fully familiar with the details of the agency's operations. Where appropriate, ESCI includes recommended modifications to current observations based on industry standards and best practices.

Organization Overview

Southington is a growing community, located in Hartford County, and sitting 20 miles from Hartford, the capital of the State of Connecticut. Within Southington's 36.8 square miles are the villages of Plantsville, Milldale, and Marion. The town ranks 40th out of 169 Connecticut towns by size.

Figure 8. Town of Southington Service



The Southington School District serves grades pre-kindergarten through twelfth and had 6,385 students as of the 2018-2019 school year. The business profile in Southington includes five major employers that consists of: The Town of Southington, Hartford Health Care, Webster Bank, Connecticut On-Line Computer, and Yard Metals. Total business units across all sectors were 1,315 units with 16,850 employed and recorded the largest sector employment in the six major cross sections indicated in the table below.

Figure 9. School and Business Sector Profile

Sector Number	Sector Name	Units	Employment	% of Total Employment
23	Construction	156	983	6%
31-33	Manufacturing	81	2,110	12.5%
44-45	Retail Trade	153	2,774	16.5%
62	Health Care & Social Assistance	120	2,167	13%
72	Food & Accommodation	151	2,562	15%
N/A	Government	28	1,613	9.5%

History, Formation, & General Description of Southington Fire Department

In 1726, the town of Southington began when Samuel Woodruff moved from Farmington to an area known then as "Panthorne". As Panthorne grew it became known as South Farmington, where later it was renamed to a shorter version "Southington". A meeting house, independent of the Farmington parish, was first constructed here in 1726 and was used until 1757. Its location on the site of the present Oak Hill Cemetery is commemorated by the First Meeting House stone and plaque. Formally, the Town of Southington was formally established in 1779 and became a thriving community where construction of all types was rapidly expanding.

In 1767, industry was booming, and the Town of Southington was home to its first mill, Atwater's Grist and by 1790 Southington had a button factory, sawmills, a brass foundry, and potash works. Southington today is a growing community, made up of modern residential, commercial, and industrial communities. The town is located in Hartford County, within 20 miles of Hartford and 9 miles of Waterbury, and includes the sections of Plantsville, Milldale, and Marion. The geographic area of the town is 36.8 square miles, ranking it 40th out of 169 Connecticut towns and its population is approximately 43,000.

In 1884 the fire department was officially established, under the direction of the Fire Commission and the Fire Chief, the department provides fire suppression, emergency medical services (EMS), technical rescue, fire prevention, and disaster management to the Town of Southington. The town charter was adopted at Special Election on December 14, 1965, effective October 11, 1966.

Governance & Lines of Authority

The Southington Town Charter, Chapter 1, Section 102 established the town as a council-manager form of government. Chapter VI, Section 401 and 402 establish the framework for the appointment and responsibilities of a Town Manager. Chapter III, Section 301-302 established the makeup of the nine-member council, elections, and the term limits. Article II, Section 7-21 of the code of ordinances establishes a Fire Department within the town limits.

Pursuant to the Town Charter, the Town of Southington operates under a Council-Manager form of government that was adopted in its current form in 1966. The Town Council consists of a nine-member Council determined through an at-large election. The Council appoints a full-time administrator as the Town Manager reporting directly to the Council.

The Fire Department operates under a politically appointed Fire Commission authorized by the Town Charter, section 601; Boards of Public Safety (b); Division of Fire. The Fire Commission consists of five members who serve four-year terms appointed by the Town Council. This section establishes the authority of the Fire Chief.

The Southington Fire Department originally established in Article 2, chapter 7, of the 1989 code, now receives its authority to be established under Chapter 44, sections 42-1-42-3 of the code. Here the Fire Chief is appointed to carry out Fire Department operations, training programs, and fire prevention activities within state laws and regulations, town charter, ordinance, or those that may be directed by the Fire Commission. The Fire Commission appoints all paid personnel including the Fire Chief, and under the authority of the Fire Commission provides oversight as necessary to ensure the efficiency of both paid and volunteer companies to provide fire protection and safety of life, proper, environment, and ensure incident stabilization.

Section 6.01(b) of the charter further provides that fire protection shall continue to be provided with paid and volunteer companies. The duties of the fire chief shall include oversight of the general efficiency of the fire department as may be prescribed by the Fire Commission. The latest approved version of the Fire Department Mission Statement states that "The mission of the Southington Fire Department is to provide to the residents of Southington and those who pass through it fire and rescue services. To protect life and property through prevention, code enforcement, fire suppression, rescue, and emergency medical services."

Current Service Delivery Infrastructure

While the Town of Southington was incorporated in 1787, the fire department was formed in 1884. The fire department has earned an Insurance Services Office (ISO) class 3-3Y rating and serves all 36.8 square miles of the town's geographic boundaries.

Fire suppression and rescue services include: fire response, supplemental first responder emergency medical services response, vehicle rescue, water rescue, technical rope and confined space rescue, and hazardous materials operations level response. The fire department also provides robust fire prevention

and life safety services and programs to include: inspection and code enforcement, fire investigation, public education, and plans review. Additionally, American Medical Response (AMR) provides emergency medical services (EMS) response and transport while Life Star provides EMS air transport.

The Southington Department operates out of four fire stations. Annually, over the last five years the department averaged 2,268 calls for service. In that span, the department has averaged 23.6% of incidents from Rescue and EMS, while just 5% were fire incidents.

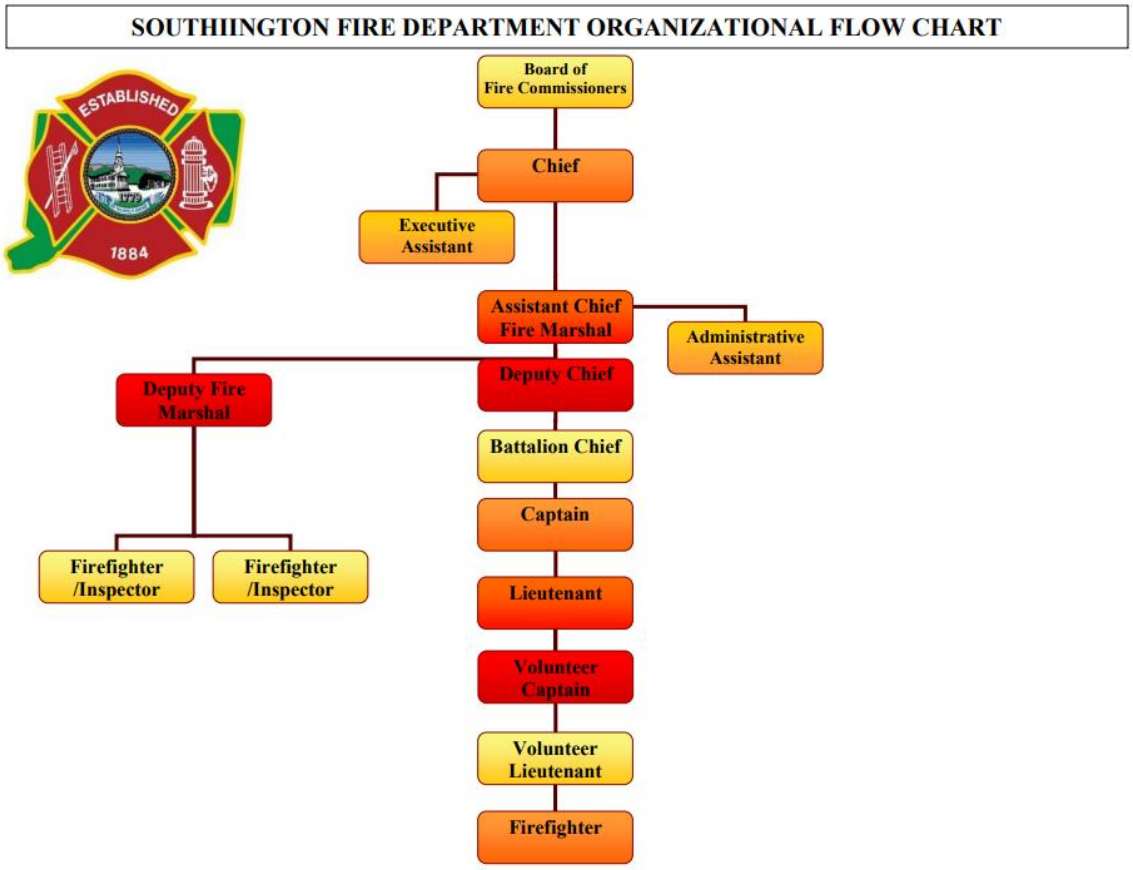
Established mutual aid agreements with the cities of Berlin, Bristol, Cheshire, Meriden, Plainville, and Wolcott provide additional resources to assist the department during significant events.

Organizational Design

The Southington Fire Department maintains four fire stations. Fire Headquarters houses career members and Company 1's volunteer members, Station 2 and 3 house volunteer members, and Station 5 houses career members. There are 50 volunteer firefighters and 36 full-time career personnel that include operational, administrative, and support positions. to provide essential fire and emergency medical services to the community's more than 43,000 citizens. The Fire Chief oversees the day-to-day functions of the department, which includes the career and volunteer staff, budget and administrative oversight, fire prevention, training, and operations. As referenced in the town charter the Fire Chief reports to the Fire Commission and collaborates with the Town Manager to ensure effective fire and emergency service delivery to the communities in and around Southington.

Organizational support for the Fire Chief comes from one Assistant Chief who also serves as the town Fire Marshal and one Deputy Chief. The Fire Chief receives additional support for the Fire Marshals' office with one deputy fire marshal and two inspector/firefighters. Additionally, the Fire Chief is supported administratively by an executive assistant and administrative assistant, who primarily assists the Fire Marshal's office with inspection record keeping and permitting processes. Operationally, shift commanders oversee emergency response and personnel management for each of the four shifts and volunteer emergency responders. Each shift commander is supported by a captain and a lieutenant who supervise the firefighters in their charge.

Figure 10. Organizational Chart



Community Risk Assessment

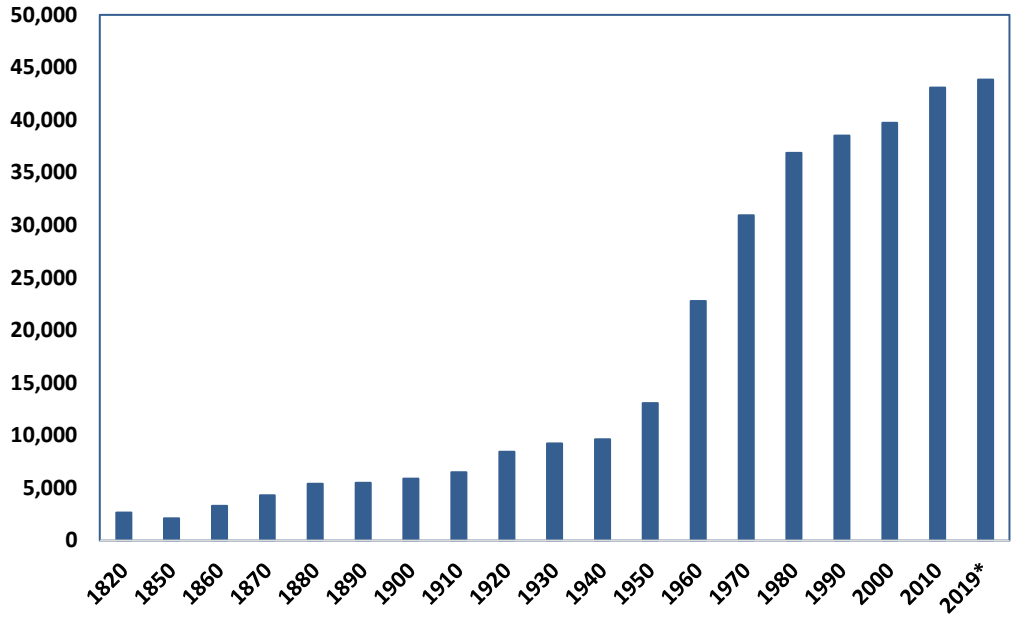
A Community Risk Assessment provides an evaluation of risks and potential risks that are present within the service area. The importance of identifying risks through a Community Risk Assessment is evident when mitigation efforts are developed and implemented over time to improve the response to, recovery from, and resilience of disasters within a community. The following section includes an in-depth discussion of these risks for the purpose of risk reduction.

The Community Risk Assessment process includes land use and zoning classifications, along with specific target hazard information, to analyze and classify community fire protection risk by geography. This process incorporates Graphic Information Software (GIS) mapping and considers the impacts of population and population density, demographics, occupancy types, land use regulations, and other development features that impact the community.

Population

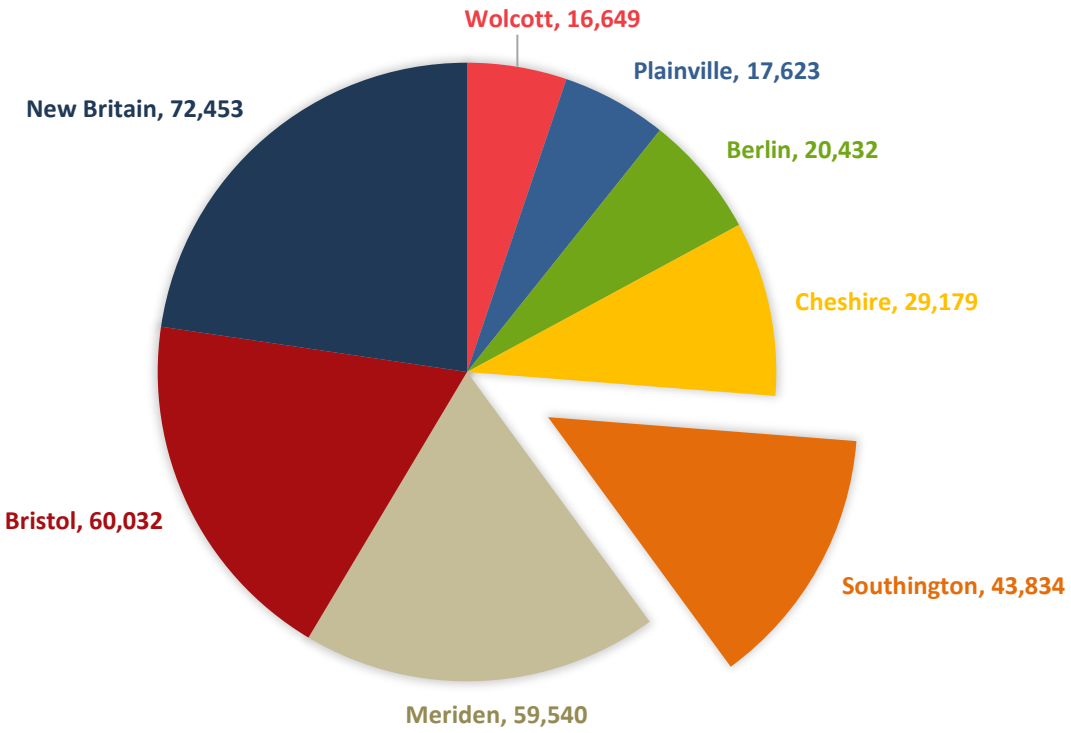
The Town of Southington was historically an agricultural community, but over time it has grown to incorporate industrial and commercial districts including a revitalized downtown. According to the United States Census Bureau, the 2019 population estimate for Southington is 43,834. Statistically, Southington is the 23rd most populated city or town in Connecticut. The population growth percentage estimate for 2010 to 2019 is 1.7 %, significantly less than the 6.3 % estimate for the U.S., but ahead of the overall estimated 0.2% loss in population for the State of Connecticut for the timeframe. Among the top 25 Connecticut cities and towns by population, only eight grew from the 2010 census more than Southington, by percentage. The following figure depicts the growth of Southington according to the decennial census from 1820 to the estimated population in 2019.

Figure 11. Southington Decennial Census Population



Southington has remained stable in population during the past twenty years. According to Connecticut Economic Resource Center (CERC), Southington's population grew from 39,728 in 2000 to an estimated 43,791 in 2020. One of the benefits of stable population is a stable local economy. Local economic stability assures continuity in local services, including governmental services. Where the local economy suffers from instability, population and income fluctuate in concert with employment and unemployment figures.

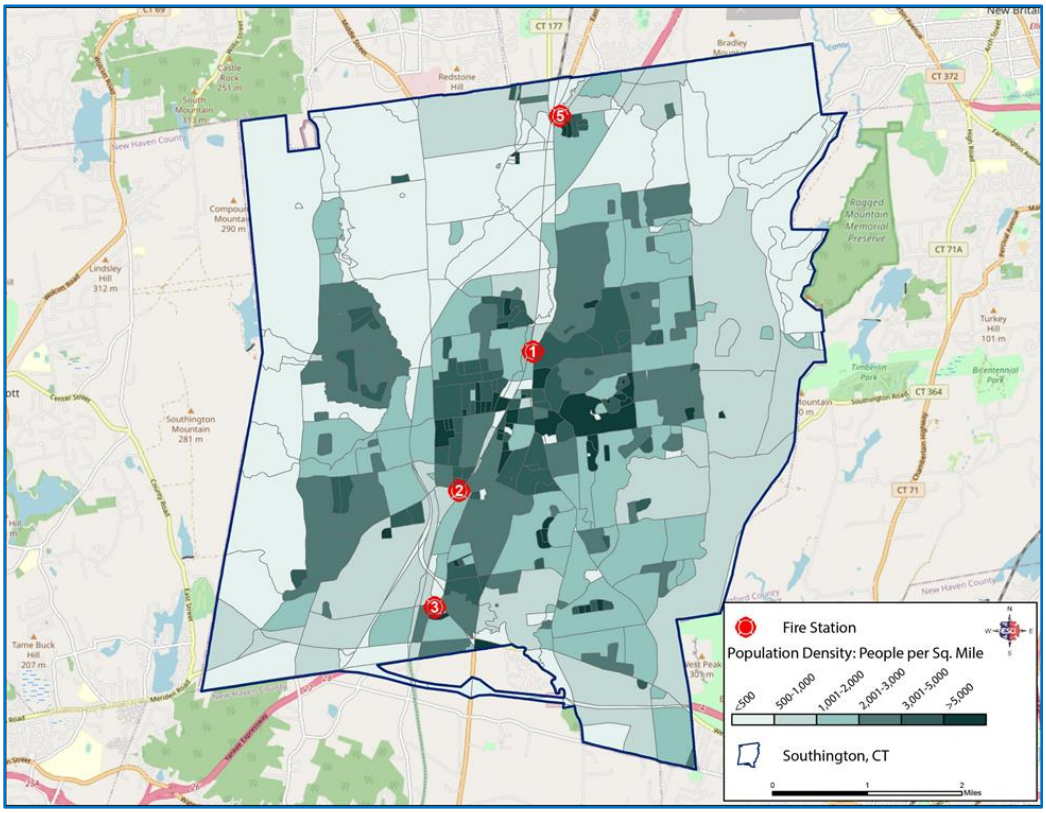
Figure 12. Population Distribution of Southington and the Surrounding Areas



Population Density

Southington is 36.64 square miles in area. The corresponding population density is 1,199.3 citizens per square mile. Comparatively, the population density for the State of Connecticut is 738.1 citizens per square mile. The following map shows that the population density within Southington.

Figure 13. Population Density Map



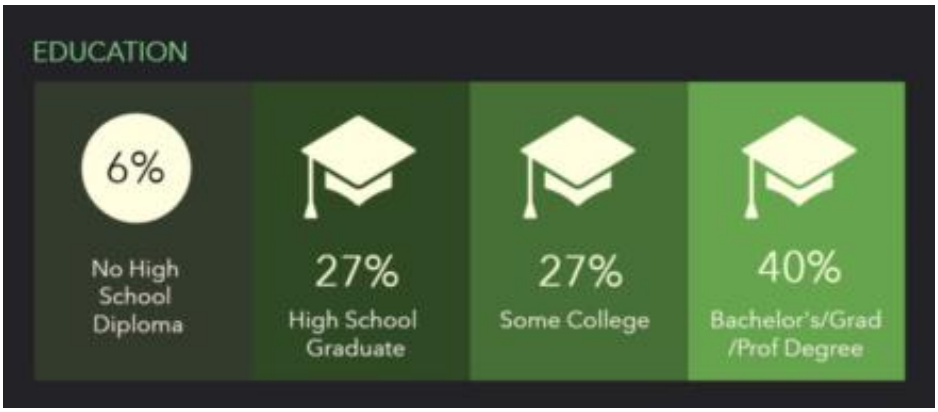
The population density map demonstrates several areas of high-density development, especially in the center and eastern center of the community. It is ESCI's experience that with increased population density, commute times for travelers will increase, as well as fire and emergency medical services travel time to emergency incidents in these areas. Additionally, more vehicles on the roadways will create an increased risk of motor vehicle accidents, vehicle fires, and hazardous materials incidents within the county. Where there are more people, there tends to be an increased demand for services as well.

Demographics

Education and Income

The population within Southington is well-educated, with 93.7% of the population over 25 years of age reporting to possess a high school diploma or higher, as compared to 90.5% of Connecticut, and 87.7% of the U.S. The number of citizens in the town similarly possess college education at high levels, with 39.5% having a bachelor's degree, compared to 31.5% of the United States. The following figure depicts the education level of Southington residents over 25 years of age.

Figure 14. Southington Citizen Education Levels



The Bureau of Labor Statistics reports that in 2015 an adult (age 25+) with a bachelor's degree earned about 40% more than an adult with just a high school diploma; individuals with a bachelor's degree were also only half as likely to be unemployed.[3] The higher education levels in Southington are also reflected in the median household income for the town. Southington's median household income is $99,399 as compared to the median income of Connecticut, which is $76,106, and the median household income within the United States which is $60,293.

Figure 15. Southington Citizen Income Levels

Race and Ethnicity

The majority of the population of Southington remains white (90.6%) and English-speaking (87.0%). Although prevention and information materials written in English will reach most of the population, 3.5% of the community report their primary language as Polish and 2.3% report their primary language as Spanish. Remaining attuned to the needs of citizens with language diversity as well as those who immigrated from other countries (8.7%) where the fire services fail to connect with citizens in similar ways as the U.S. would close gaps in program coverage. State-wide, 16.9% of citizens of Connecticut report as being Hispanic or Latino, offering opportunities to garner ideas from communities with higher levels of Spanish-speaking citizens.

[3] https://www.bls.gov/careeroutlook/2020/data-on-display/education-pays.htm

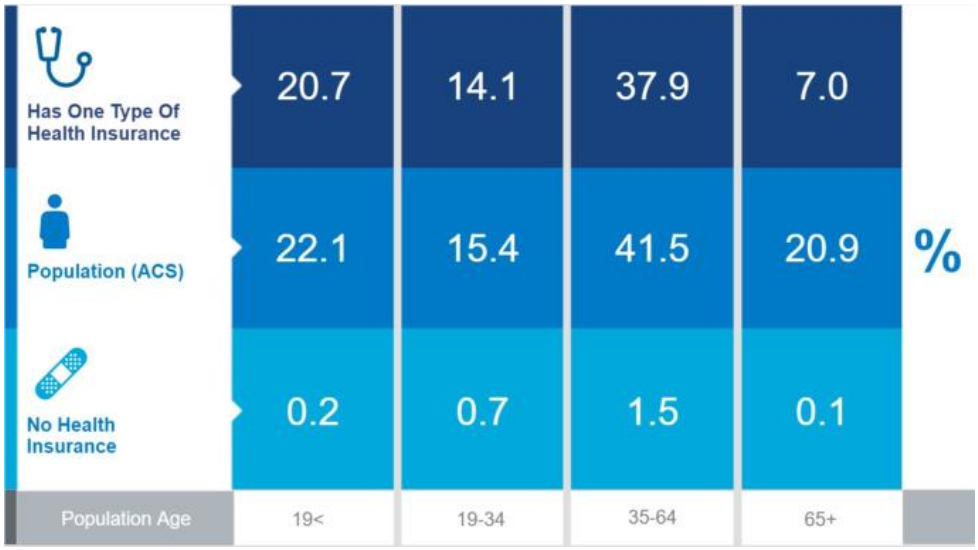
Figure 16. Ethnic Groups of Southington; American Community Survey 2019

Race	Percentage or Total
White	90.6%
Hispanic or Latino	4.4%
Asian	2.8%
Black	1.5%
Other	0.7%

Health Insurance

Employed citizens have increased access to health insurance, and therefore receive preventative health care at higher levels. In Southington, 2.5% of the citizens do not have access to health insurance, as opposed to 9.5% across the United States. The benefit of health insurance extends to the frequency of pre-hospital emergency medical incidents, as citizens with health insurance use primary health care providers over emergency room facilities at higher levels. The following figure depicts the percentage of residents with health insurance in Southington.

Figure 17. Percentage of Residents in Southington with Health Insurance



Home Ownership

There are 16,902 households in Southington, and 81.9% are owner-occupied. State-wide, owner-occupancy is 66.3%, and nationwide, owners occupy 63.8% of households. The benefit of owner-occupied structures to home values and to local fire departments is the care and maintenance performed on the "investment". Citizens who are unable to maintain home heating, cooking, electrical, and mechanical systems use local government services, including fire and emergency medical services, at higher percentages than those who regularly upkeep and service these systems.

Another benefit of a stable local economy is the rate at which citizens remain in a household. In Southington, 94.7% of citizens report living in the same household as in the previous year. This longevity provides for increased rates of investing in repairs and upgrades to make homes safer and more energy-efficient and assists in maintaining housing values. Southington's one-year rate also outpaces the state, where 87.9% of citizens report living in the same house one year prior, and over the U.S. average of 85.5%.

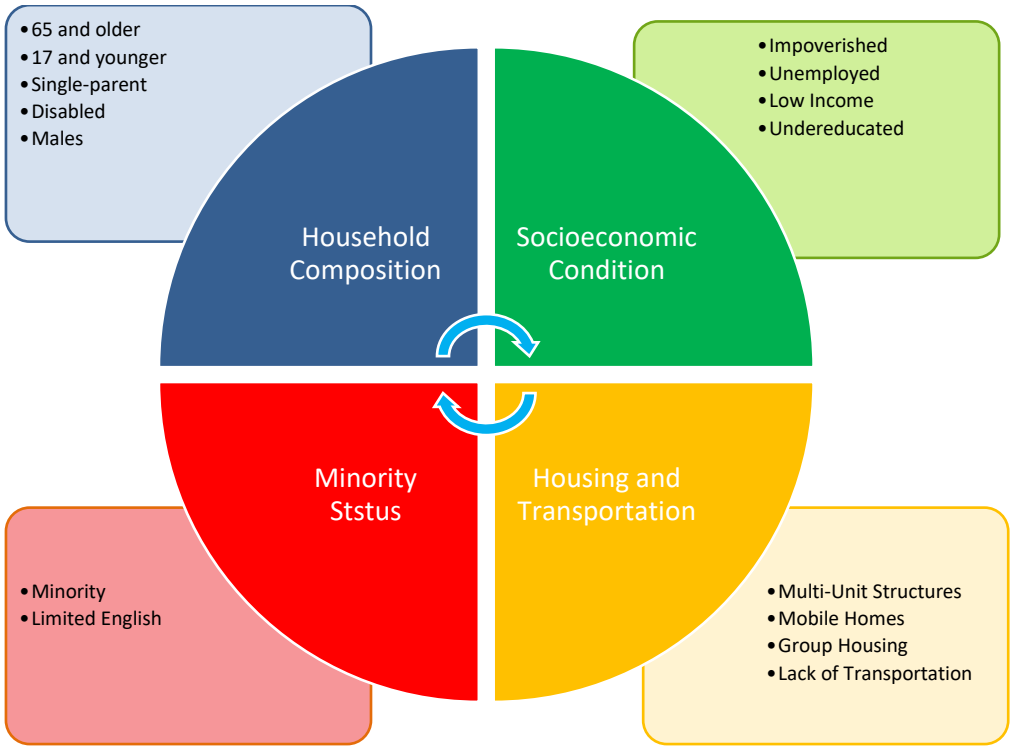
At-Risk Populations

There are several causal factors determining the population of at-risk individuals or groups within a community. Understanding the causal factors and populations of the community that are at greatest risk will contribute to programs and prevention efforts to address higher risk factors and reduce the effects of the associated risks. These factors also are important to consider when calculating demand for fire and emergency services within the community.

Often defined very broadly, the term "populations at risk" does not include all citizens within a defined group, as they experience risk at varying levels or rates. Coupling two or more risk factors contributes to significantly higher levels of risk than those who only experience one risk category. Those with compounded risk factors should be a priority in prevention programs and strategies.

Broadly, "populations at risk" includes citizens at the lower end of socioeconomic status, those with housing and transportation challenges, those of minority status or with English-speaking challenges, and households containing citizens with disabilities, over 65 and under 17 years of age. More specifically, citizens most at risk include the impoverished, disabled, homeless, racial, and ethnic minorities, as well as people with low literacy. Also, groups suffering from poor health or who are uninsured/underinsured may be at greater risk during emergency or disaster situations.

Figure 18. Vulnerability Factors Matrix



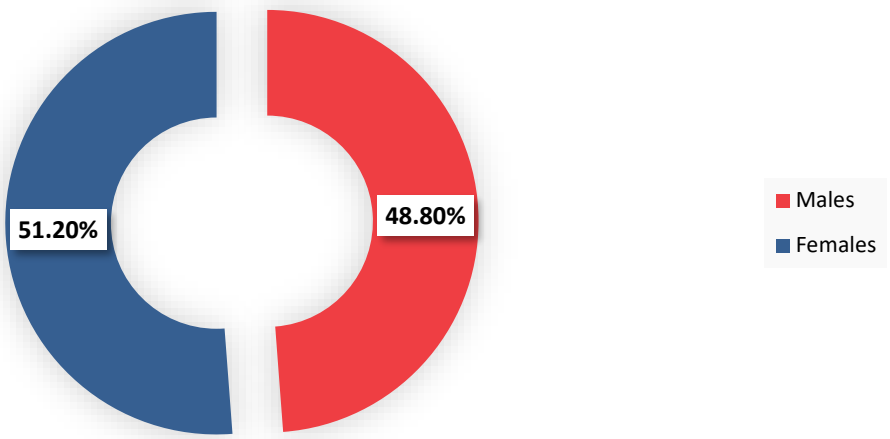
Understanding the age, gender, and historical geographic distribution patterns among fire victims is critical to developing appropriate community risk reduction strategies. Additionally, studies have shown that these same factors indicating populations at risk for death or disability from fire, can also be good predictors of medical emergencies and disease. These groups may require greater time, effort, and resources to prepare, evacuate, and recover from emergency situations. In addition to deciding where to focus risk reduction efforts within a community, carefully consider these factors when creating emergency plans for wide-area disasters within the community.

The following discussion includes several of the populations most at risk within the Southington Community.

Males

Males, especially those under 25-years of age, are more prone to engage in risky activities. Additionally, males are 1.7 times more likely to die in fires than females. Within Southington, 48.8% of the population are male. The town's population distribution resembles the State's, where 468.8% of the population is male.

Figure 19. Gender Distribution in Southington



Age

Southington's population over 65 years of age makes up 21.1% of the population. Those reaching senior status in Southington are slightly above the national average of 16.5%. Coupled with the senior population to make up those most at risk are the 5% who are under five years of age. These two age groups (26.1% combined) are statistically more reliant on the emergency services offered by Southington Fire Department. Understanding these types of data assists in developing targeted safety campaigns and hazard reduction efforts.

Figure 20. Age Distribution of Southington

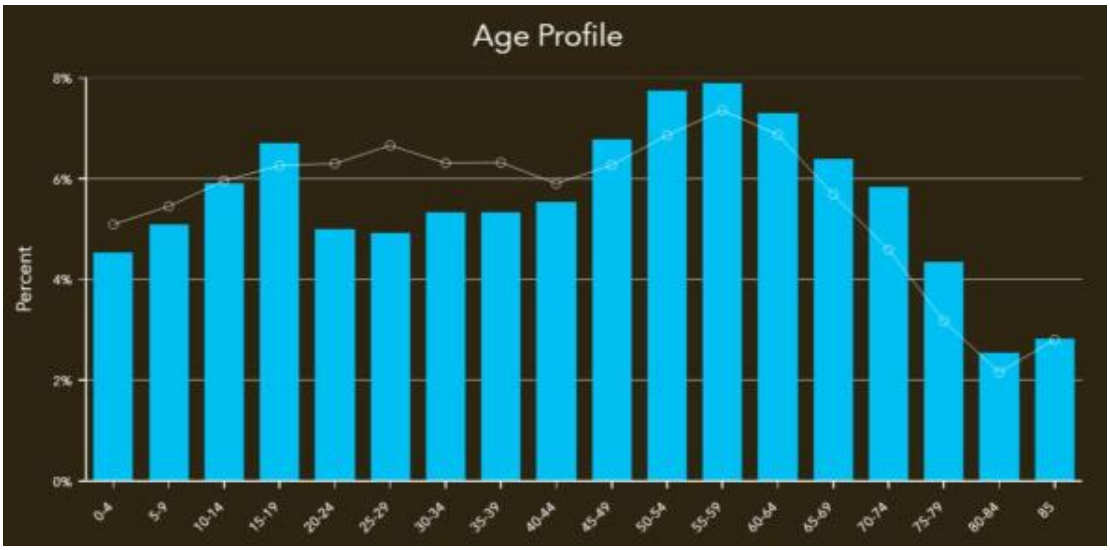
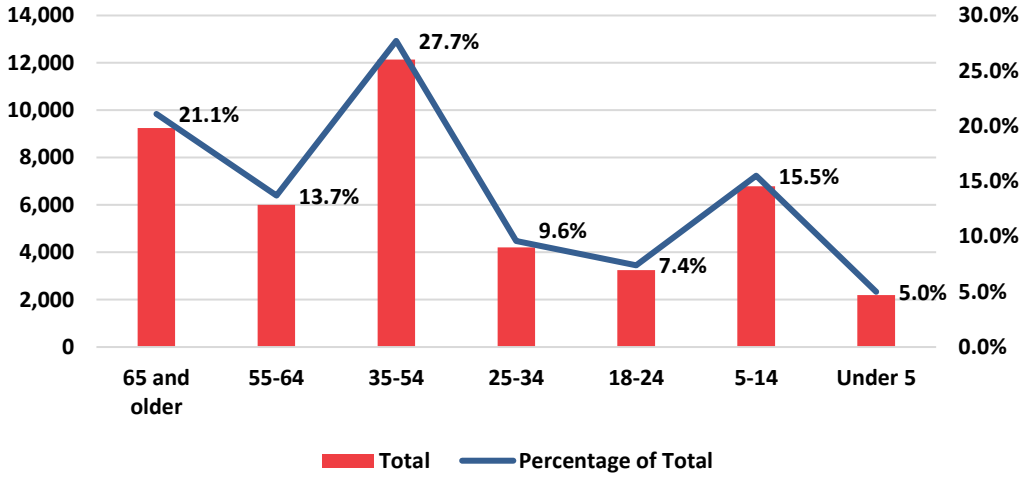


Figure 21. Age as Percentage of Total Population of Southington



Disability

Fires in the home can be potentially dangerous and deadly for everyone, but persons with disabilities and impairments face additional challenges. Persons with disabilities often have a difficult time identifying or escaping a fire. In 2018, 6% of citizens under 65 years of age in the Town of Southington were reported to have a disability. Overall, 3,932 households identified as having one member with a disability. These citizens in the community would benefit from programs to assist in their needs during times of emergency and for emergency planning efforts.

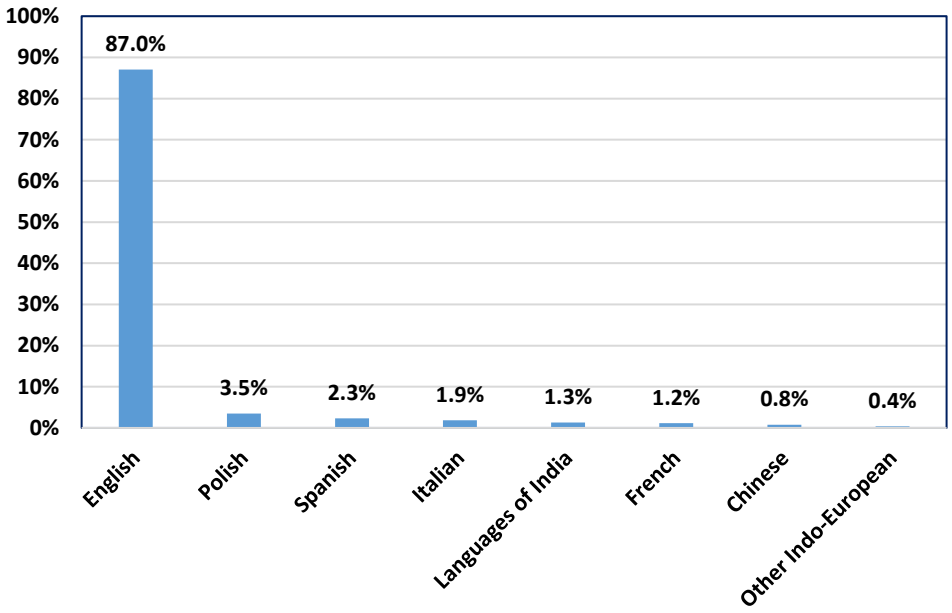
Figure 22. Number of Households with a Disabled Person in Southington

Language

According to the National Fire Protection Association (NFPA), "Language barriers, cultural differences, and inexperience with unfamiliar home technologies are factors that mark the challenges of helping newcomers live safely from the threat of fire in the home." By itself, speaking a language other than English at home does not directly contribute to a higher risk of emergencies, however, if a person has difficulty speaking English, it may contribute to negative outcomes during an emergency.

Most of the population within Southington speaks English, whether as a primary or a secondary language. In Southington, 13% of the population purport to speak a primary language other than English. Often, organizations overcome language barriers through a diversified work force, allowing these persons to receive proper care during emergency incidents. Southington Fire Department should continue to monitor the diversification within the town as a future need may arise for fire prevention and risk reduction education in multiple languages.

Figure 23. Language Distribution of Southington



Income

Low-income residents typically utilize government services at higher rates than other economic brackets. Persons living in poverty experience an increased risk from fire and medical emergencies due to the age and condition of their housing, inability to pay for routine medical care, lack of medical insurance, and general health conditions. Often associated with poverty is the lack of reliable transportation, which likewise leads to increased demand for local emergency services.

Figure 24. Income Distribution of Southington

Households By Income

The largest group: $100,000 - $149,999 (22.7%)

The smallest group: <$15,000 (4.9%)

Indicator ▲	Value	Difference
<$15,000	4.9%	-4.9%
$15,000 - $24,999	6.8%	-1.1%
$25,000 - $34,999	6.0%	-1.5%
$35,000 - $49,999	7.2%	-2.7%
$50,000 - $74,999	13.3%	-1.5%
$75,000 - $99,999	12.1%	-0.1%
$100,000 - $149,999	22.7%	+5.3%
$150,000 - $199,999	13.8%	+4.7%
$200,000+	13.3%	+2.1%

Those living below the poverty line are the most at-risk. Unfortunately, those at risk due to income often represent additional "at-risk" categories. Examples where the low-income category often combines with other factors includes education, disability, and work status. Of the citizens living in Southington, 3.9% live in poverty, well below the state's average of 10.0%, and even more so below the percentage of all Americans at 11.8%. Contributing to the lower poverty rates is the education level and the employment rate in the town and county. Nevertheless, the impoverished should be the focus of many of the programs and services of the fire department. These citizens benefit at greater levels from fire and fall prevention programs, emergency planning activities, supply distribution programs, and from materials targeting the risks they face routinely.

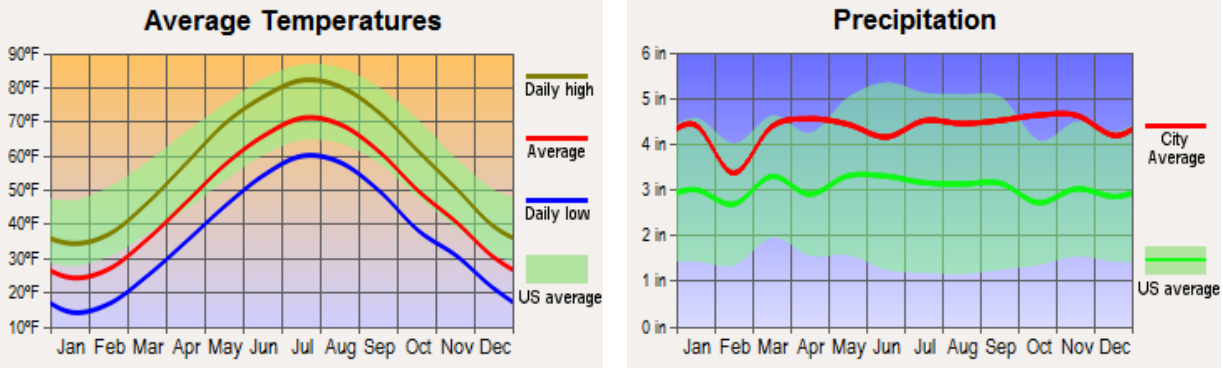
Natural Hazards

Although axiomatic, it is impossible to predict or prevent risks from naturally occurring hazards on a community. It is possible, however, to prepare and improve resiliency, which historically has led to improved recovery and reduced effects or impacts to the extent feasible. Preparatory examples include levee systems, elevating or burying critical infrastructure, training systems, policy reform, early warning and mass notification systems, interlocal agreements, and related efforts.

For fire departments, these preparatory efforts also include identifying, staffing, equipping, training, specializing, planning, and coordinating the emergency response system to reduce the impacts of natural hazards. The following natural hazards are considered viable threats for the Town of Southington.

Climate is the description of the long-term pattern of weather in a specific location. Southington's climate is widely considered comfortable for most of the year.

Figure 25. Temperature and Rainfall Totals[4]



Significant weather events create disruptions to communities in many forms. Aside from a myriad of inconveniences, injuries and deaths, increased expenditures and lost revenue, infrastructure and transportation disruptions, increased demand on emergency and medical systems, and power and utility failures are commonplace in weather disaster areas. Depending on the severity and type of weather event, citizens may endure days or weeks of effects and certain losses may be permanent.

The following figure lists Federal Emergency Management Agency (FEMA) Disaster Declarations for Hartford County over the past 65 years. The town prepares for such emergencies through training and updating the Emergency Operations Plan. Statistically, the top three weather vulnerabilities for Southington are tropical hurricanes, flooding, and winter weather events. The town prepares for these types of events by maintaining generators, shelters, training levels, citizen corps, and emergency plans to work with local, state, and federal agencies to meet the residents' needs.

[4] Op. cit. City-Data

Figure 26. FEMA Disaster Declarations Hartford County

Year	Weather or Event	Disaster #
1955	Hurricane, Torrential Rain & Floods	42
1978	Blizzard & Snowstorm	3060
1979	Tornado & Severe Storm	608
1982	Severe Storms & Flooding	661
1984	Severe Storms & Flooding	711
1985	Hurricane Gloria	747
1991	Hurricane Bob	916
1993	Severe Winds & Blizzard, Record Snowfall	3098
1996	Blizzard of 96	1092
1999	Hurricane Floyd	1302
2003	Snow	3176
2004	Snow	3192
2005	Hurricane Katrina	3246
2005	Record Snow	3200
2005	Severe Storms & Flooding	1619
2006	Snow	3266
2007	Severe Storms & Flooding	1619
2011	Hurricane Irene	3331
2011	Severe Storm	3342
2011	Severe Storm	4046
2012	Hurricane Sandy	3353
2013	Severe Winter Storm	3361
2013	Severe Winter Storm & Snowstorm	4103
2020	COVID-19	3439
2020	Tropical Storm Isaias	3535

Reviewing the full range of natural hazards suggested under FEMA planning guidance, Southington identified several natural hazards addressed in the Emergency Operations Plan, including, in part:

Dam Failure

Dam failure can be a result of natural disasters such as structural failure due to earthquakes or overtopping due to heavy precipitation. Dams in Connecticut are regulated by the Department of Energy & Environmental Protection.

The Town of Southington owns six dams including one Class C (high hazard) and one Class B (significant hazard). All of these dams are in good condition and inspections are performed in accordance with DEEP regulations.

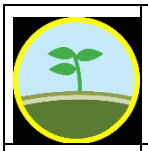
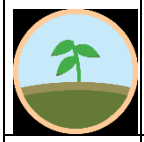
Drought

Drought is a prolonged period of less than normal precipitation such that the lack of water causes a serious hydrologic imbalance. The U.S. Drought Monitor (USDM) is a map that is updated each Thursday to show the location and intensity of drought across the country. The USDM uses a five-category system, labeled:

- Abnormally Dry or D0 (a precursor to drought, not actually drought)
- Moderate (D1)
- Severe (D2)
- Extreme (D3)
- Exceptional (D4) Drought

Drought categories show experts' assessments of conditions related to dryness and drought including observations of how much water is available in streams, lakes, and soils compared to usual for the same time of year. U.S. Drought Monitor data go back to 2000.

Figure 27. U.S. Drought Monitor Five-Category System

	D0 - Abnormally Dry	• Short-term dryness slowing planting, growth of crops • Some lingering water deficits • Pastures or crops not fully recovered	
	D1 – Moderate Drought	• Some damage to crops, pastures • Some water shortages developing • Voluntary water-use restrictions requested	
	D2 – Severe Drought	• Crop or pasture loss likely • Water shortages common • Water restrictions imposed	
	D3 – Extreme Drought	• Major crop/pasture losses • Widespread water shortages or restrictions	
	D4 – Exceptional Drought	• Exceptional and widespread crop/pasture losses • Shortages of water creating water emergencies	

The U.S. Drought Monitor started in 2000. Since 2000, the longest duration of drought (D1-D4) in Connecticut lasted 46 weeks beginning on June 21, 2016 and ending on May 2, 2017. The most intense period of drought occurred the week of November 15, 2016 where D3 affected 44.5% of Connecticut land.[5]

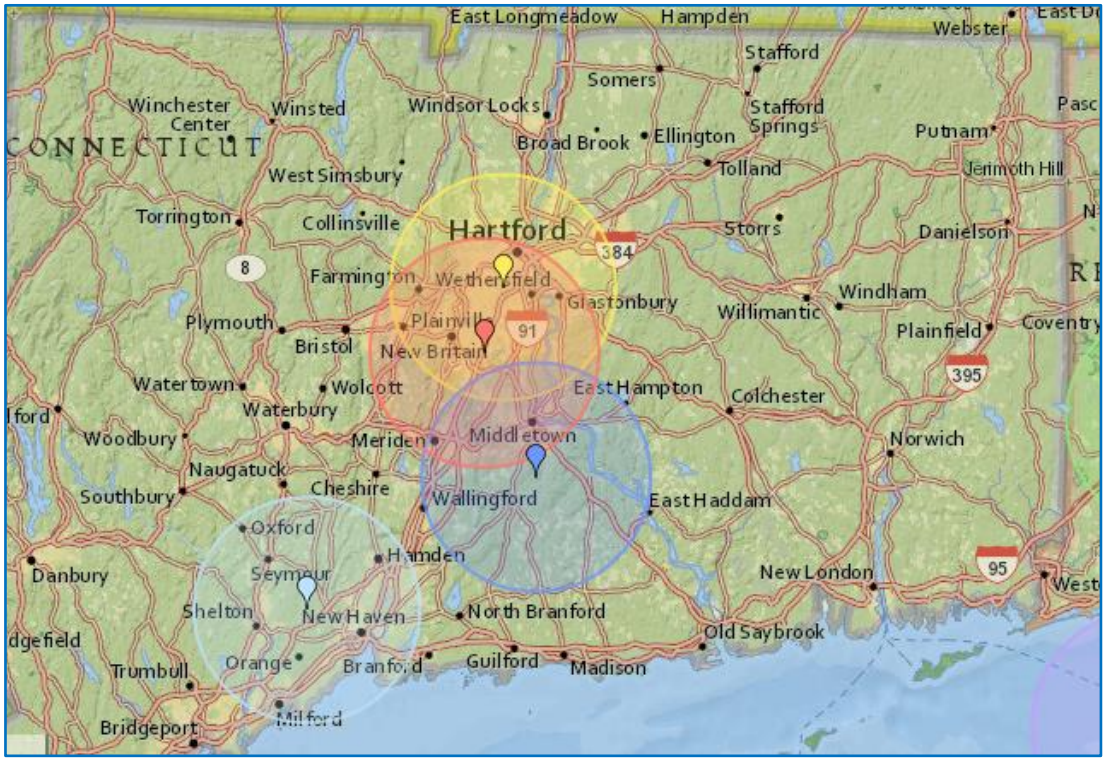
[5] https://www.drought.gov/drought/states/connecticut

Earthquakes

An earthquake is caused when the Earth's crust, composed of a dozen or more rigid plates, bump against one another. Most earthquakes are the result of strain release along zones of weakness (faults) in response to the slow-motion of those crustal plates.

Damage from the impact of an earthquake can be as small as a slight shift or vibration to sustaining structural and critical infrastructure damage and/or collapse on a severe scale including damage to energy pipelines in the area. The following figure illustrates earthquakes centered in Connecticut over the past three years.

Figure 28. Connecticut-Centered Earthquakes 2017-2020[6]



Extreme Heat

Extreme Heat is the condition whereby temperatures hover 10 degrees or more above the average high temperature in a region for an extended period. A heat wave is a prolonged period of excessive heat, often combined with excessive humidity. A heat wave combined with a drought can be a very dangerous situation.

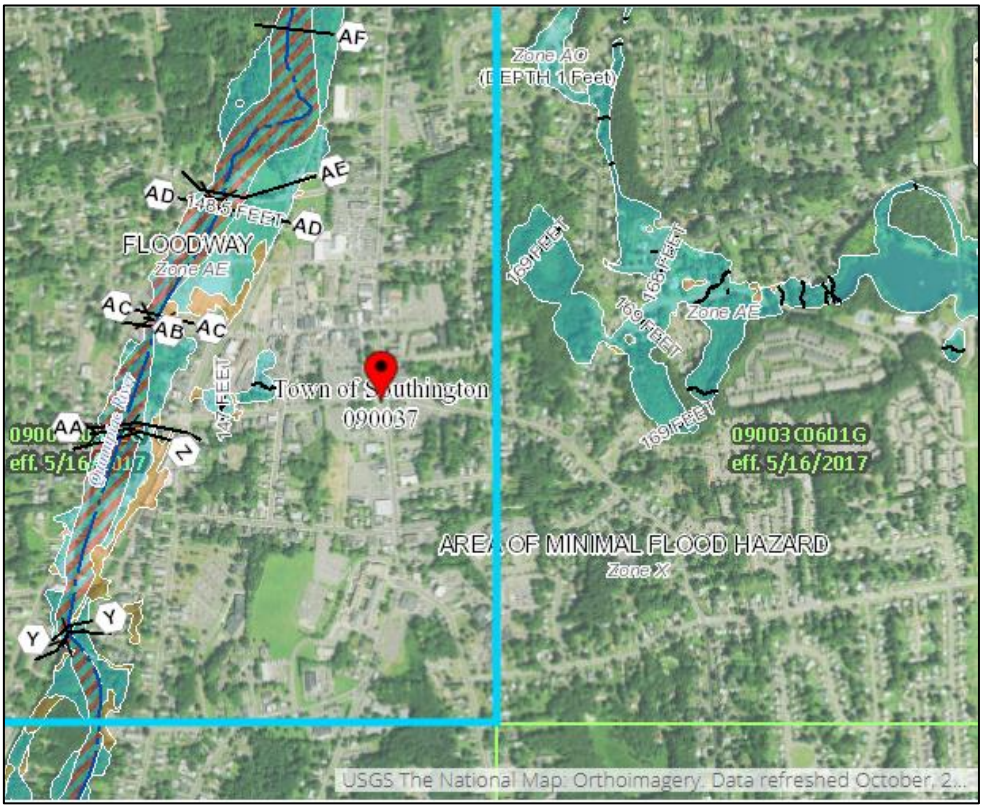
[6] https://earthquaketrack.com/p/united-states/connecticut/recent

Public health impacts during these periods include concerns of heat exhaustion or heat stroke and a higher vulnerability to wildfire. Individuals, especially the elderly, who live in residences without air-conditioning or if there are electrical service blackouts, are more susceptible to heat-related emergencies. Local water supply distribution from natural sources can be severely compromised reducing water supply for firefighting purposes.

Floods

Floods are one of the costliest natural hazards in the world, yet most flood loss is both predictable and preventable. Floods are an accumulation of water within a body of water, which results in the overflow of excess water onto adjacent lands, usually floodplains. Most floods fall into the following three categories: riverine flooding, coastal flooding, and shallow flooding. Because Southington is relatively flat in most of the town, flood waters recede slowly once the waters accumulate.

Figure 29. Flood Hazard Zone Map[7]



The majority of the Town drains to the Quinnipiac River (a tributary to Long Island Sound), although the eastern edge of town drains to the Mattabesset River in Berlin. Aside from the Quinnipiac River, other major streams in Southington include Cussgutter Brook, Eightmile River, Roaring Brook, Hamlin Brook, and Misery Brook.

[7] https://msc.fema.gov/portal/search#searchresultsanchor

Landslides

A landslide is defined as the movement of a mass of rock, debris, or earth down a slope. Landslides are a type of "mass wasting," which denotes any down-slope movement of soil and rock under the direct influence of gravity. The term "landslide" encompasses five modes of slope movement: falls, topples, slides, spreads, and flows. These are further subdivided by the type of geologic material (bedrock, debris, or earth). Debris flows (commonly referred to as mudflows or mudslides) and rock falls are examples of common landslide types.

Almost every landslide has multiple causes. Slope movement occurs when forces acting down-slope (mainly due to gravity) exceed the strength of the earth materials that compose the slope. Causes include factors that increase the effects of down-slope forces and factors that contribute to low or reduced strength. Landslides can be initiated in slopes already on the verge of movement by rainfall, snowmelt, changes in water level, stream erosion, changes in ground water, earthquakes, volcanic activity, disturbance by human activities, or any combination of these factors. Earthquake shaking and other factors can also induce landslides underwater. These landslides are called submarine landslides. Submarine landslides sometimes cause tsunamis that damage coastal areas.[8]

Terrain and Waterways

Southington rests in a valley between two mountains on its east and west sides. The terrain is relatively flat between the two mountains and sits approximately 154 feet above sea level. The town has developed sophisticated water and road distribution systems that provide for public safety and quality of life. One of the benefits of these development accomplishments is the assurance the citizens have that the service providers have access to most, if not all the areas where they reside.

The Quinnipiac, Eight Mile, and Ten Mile Rivers flow through the Town of Southington, providing for a picturesque feature, with myriad recreational opportunities within the community. From fishing and canoeing, to hiking and camping, these rivers provide an abundance of opportunities for the residents and visitors to Southington. These rivers provide the fire department with opportunities to offer public education materials to reduce the associated risks of navigable waterways.

[8] https://www.usgs.gov/

Tornados and High Winds

Tornados are a violent rotating column of air that has contact with the ground and is often visible as a funnel cloud. Its vortex rotates cyclonically with wind speeds ranging from as low as 40 mph to as high as 300 mph. Classified by the Enhanced Fujita Scale (EF-Scale 2007), tornados are categorized by a numeric score of zero to five based on observed damage severity.

Figure 30. Enhanced Fujita Scale (EF-Scale 2007)

Designation	Wind Speed (mph)	Typical Damage
EF-0	65–85	Minor or no damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornadoes with no reported damage (i.e., those that remain in open fields) are always rated EF-0.
EF-1	86–110	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF-2	111–135	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF-3	136–165	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations are badly damaged.
EF-4	166–200	Devastating damage. Well-constructed and whole frame houses completely leveled; cars and other large objects thrown, and small missiles generated.
EF-5	> 200	Extreme damage. Strong-framed, well-built houses leveled off foundations are swept away; steel-reinforced concrete structures are critically damaged; tall buildings collapse or have severe structural deformations; some cars, trucks, and train cars can be thrown approximately 1 mile (1.6 km).

Tropical Cyclones and Hurricanes

Tropical Cyclones and Hurricanes are an intense tropical weather system of strong thunderstorms with a well-defined surface circulation and maximum sustained winds of 74 mph or higher. Tropical storms are extremely low-pressure areas over the ocean with a cyclonic rotation of winds. They can be considered very strong thunderstorms. The tropical storms are named so because they usually develop in the tropics. A tropical storm is classified according to its speed. When the speed of the wind is between 39 mph to 73 mph, the tropical depression developed is classified as a tropical storm. Those storms that form in the middle latitudes are often called Extratropical Storms.

Figure 31. Saffir-Simpson Hurricane Damage Scale

Scale	Wind Estimate	Typical Damage
Category 1	**74-95**	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, siding and gutters. Large branches of trees will snap, and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last several days.
Category 2	**96-110**	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and obstruct roadways. Near-total power loss to impacted area.
Category 3 (Major)	**111-129**	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
Category 4 (Major)	**130-156**	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted, and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
Category 5 (Major)	**157 or Higher**	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Since the mid-1950s, Southington and Hartford County have received the effects of several hurricane and tropical cyclone events, including the federal disaster declarations identified in the following figure.

Figure 32. FEMA Hurricane-Related Disaster Declarations Hartford County

Year	Hurricane-Related Event	Disaster #
1955	Hurricane, Torrential Rain & Floods	42
1985	Hurricane Gloria	747
1991	Hurricane Bob	916
1999	Hurricane Floyd	1302
2005	Hurricane Katrina	3246
2011	Hurricane Irene	3331
2012	Hurricane Sandy	3353
2020	Tropical Storm Isaias	3535

Wildfires

Wildfires are large, destructive fires that spreads quickly over woodland, grass, and brush. Recently, they have become a serious and growing hazard over much of the western United States. Although fires in undeveloped areas are healthy for trees and grasses, wildfires pose threats to both life and property where humans have developed. Beneficial fires and threatening wildland fires meet at an area known as the urban-wildland interface area.

Wildland-urban interface is the contact zone between undeveloped forested areas and urban areas. This transitional environment is most susceptible to fire. As people and wildlands come into contact, conflict arises from the threat of wildfire or from emergency services inadequate to protect rural populations.

Connecticut traditionally experiences high forest fire danger in the Spring from mid-March through May. Department of Energy and Environmental Protection (DEEP) Division of Forestry monitors the danger of forest fire to help protect Connecticut's 1.8 million acres of forested land. DEEP distributes daily advisories identifying the fire danger level in Connecticut, which is especially important in the Spring, which is the height of the elevated threat for forest fires in Connecticut. Forest fire danger levels are classified at low, moderate, high, very high or extreme. In an average year approximately 500 acres of Connecticut woodland are burned by forest fires.

Winter Storms

Winter Storms include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation, including blizzards, the most dangerous of all winter storms, and ice storms that down trees, cause widespread power outages, damage property, and cause fatalities and injuries to human life. A Nor'easter is the biggest threat for winter weather, usually from November through April, causing significant snowstorms and mixed frozen precipitation. Strong winds are produced that cause coastal flooding and erosion.

The impacts of winter storms are primarily measured in financial costs associated with management and recovery from the disaster. House fires and carbon monoxide poisoning pose higher risks as people use supplemental heating devices to combat the cold temperatures. Power outages and downed trees have a significant impact on residents.

Figure 33. Winter Weather Disaster Declarations in Southington and Hartford County

Year	Winter Weather Event	Disaster #
1978	Blizzard & Snowstorm	3060
1993	Severe Winds & Blizzard, Record Snowfall	3098
1996	Blizzard of 96	1092
2003	Snow	3176
2004	Snow	3192
2005	Record Snow	3200
2006	Snow	3266
2013	Severe Winter Storm	3361
2013	Severe Winter Storm & Snowstorm	4103

All weather events that occur in New England do not become significant in the damage or harm to the area they affect. Weather events do contribute to the number of emergency incidents, hospital visits, and demands on governmental services. Weather events have potential to interrupt transportation circulation, communication systems, community events, and business revenue.

Fire department planning efforts should continue to focus on this list from the Emergency Operations Plan to remain proficient in weather-related operations. Proficiency in common occurrences leads to adaptability and success in more rarely experienced emergency situations.

Human-Caused Hazards

Technological or human-caused hazards result from accidents or failures of systems and structures; or the actions of people - either accidental or intentional. Intentional actions are always deliberate; however, the intent may differ (e.g., a deliberate action may be planned, careless, reckless, or with the intent to cause harm). In careless or reckless acts, or those that are poorly planned and or executed, the outcome may have unintended consequences.

Community Land Use Regulations

As permitted by Connecticut General Statutes, specifically Chapter 126, the Town of Southington adopted and enacted land use regulations to divide the land within the town into zones according to land use and building regulations. These rules provide guidance for decisions for development that may occur in certain areas, and likewise prohibited areas for certain types of development. Regulations that create these development zones are referred to as zoning regulations for development.

An important component in development plans are the historical considerations given to the structure development and construction. Set-backs, distance between structures, types of building materials, utility and water availability, and fire protection, detection, and suppression system requirements are all important factors in development within a community.

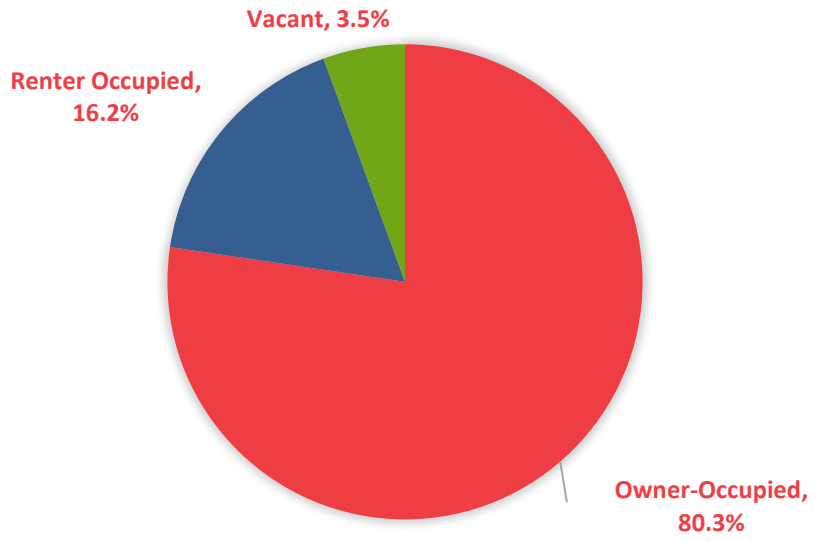
Hazardous Substances and Processes

As of 1986, the Federal Emergency Planning Community Right-to-Know Act requires businesses that possess or maintain hazardous chemicals that exceed established thresholds to complete a Tier II Hazardous Chemical Inventory Report. The Environmental Protection Agency requires these occupancies to submit annual Tier II reports to local fire departments, Local Emergency Planning Committees (LEPC), and State Emergency Response Commissions (SERCs) to enable planning for the response and mitigation of any potential spills or accidents. Additionally, the reporting facilities must submit the designated emergency point of contact.

Housing Type and Density

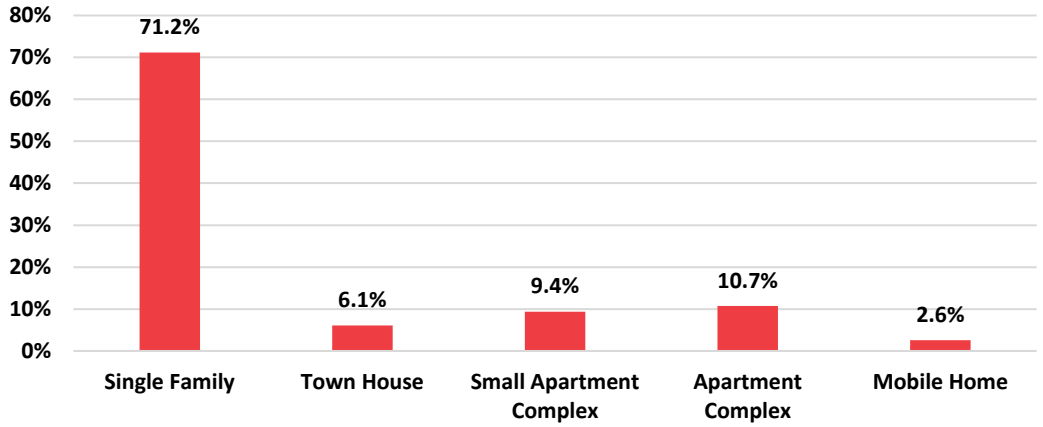
Studying a community's housing features reveals numerous risk indicators that provide insight into areas where prevention programs alter risk factors within the community. Data involving occupancy rates, infrastructure age, property value, and ownership status of households provides valuable clues to needed prevention efforts. From this insight, planers discover the effects where less maintenance and repairs are performed on low valued, vacant, or rental properties than higher value categories. Owner-occupied homes are maintained more often as owners are seeking to maintain or improve property values.

Figure 34. Ownership Distribution in Southington



According to the National Fire Protection Association (NFPA), the top five causes of fatal fires, which account for 90% of fire deaths, are cooking, heating, electrical, intentional, and smoking. These types of fires occur in all residential types, warranting the need for a foundational fire safety campaign that incorporates educational information and messages for homeowners and renters alike.

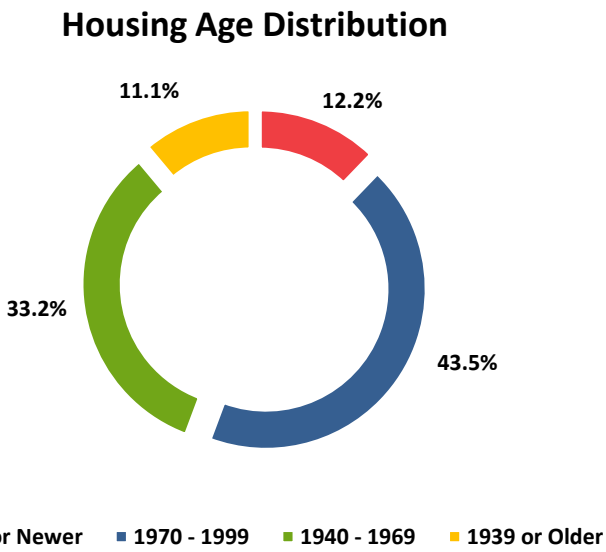
Figure 35. Types of Residential Occupancies



Home heating risk is higher in the colder months, as many homes are heated with natural gas, fuel oil, propane, or wood stoves which increases risk for carbon monoxide poisoning compared to all-electric homes. Fire safety programs regarding carbon monoxide poisoning prevention and the use of a carbon monoxide alarm would benefit many residents.

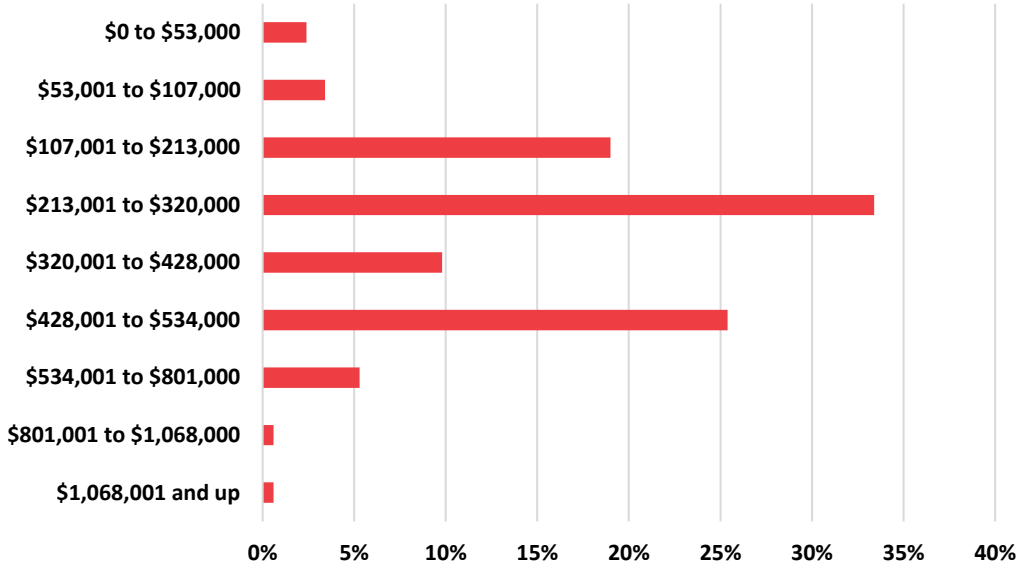
Reducing fire fatalities and injuries in the home should be the main goal of any fire prevention program. Statistics show that smoke alarms improve human survivability in residential fires by at least 50%. NFPA's best practice for smoke alarm replacement is 10 years from the date of manufacture. In addition, emphasis should be given to homes that were built when there were fewer life safety code requires for smoke alarms, electrical receptacles, and electrical panels. Incorporating a smoke alarm installation program with a home fire safety inspection by targeting homes which are 10 years or older can substantially reduce risk from fire and fire-related hazards.

Figure 36. Age of Home Distribution in Southington



Fire suppression systems (fire sprinklers) are proven life-saving devices, with more than 125 years of empirical data serving to document their effectiveness. In the United States, however, fire sprinkler systems remain elusive in residential properties, especially in one-and two-family dwellings. Informational campaigns for historical house renovation and for new construction certainly help to curtail this elusiveness.

Figure 37. Single Family Home Value Distribution Southington



A 2008 study prepared for the Centers for Disease Control[9] of lithium battery-powered smoke alarms installed in 1998–2001 in five states investigated whether these alarms were present and operational eight to ten years later. This study found that at least one of the installed alarms was still present and functional in only 38 percent of the homes visited. Slightly more than one-third (37%) of the installed alarms had been removed, one-third (33%) were present and operational, and slightly less than one-third (30%) were present but not operational.

Transportation

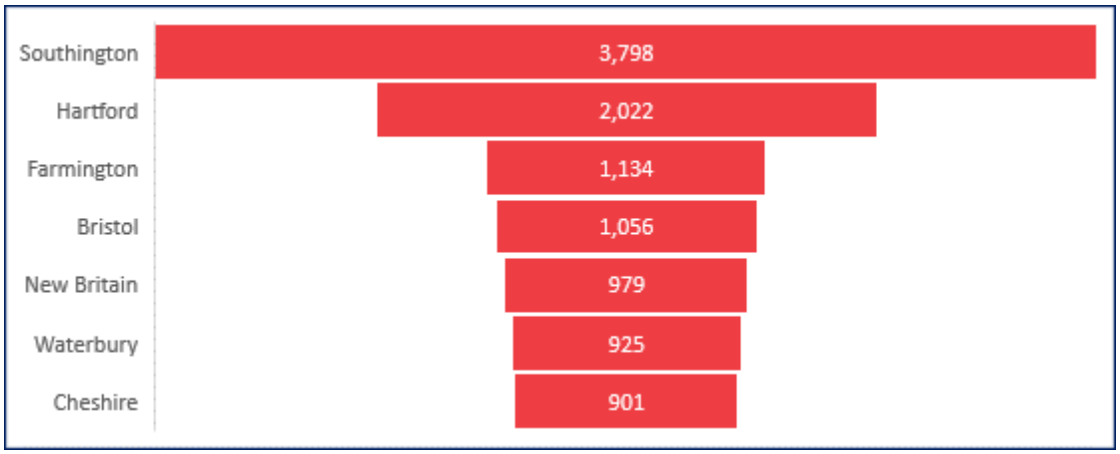
Southington is located along exits 28 through 32 of Interstate 84, exit 4 off Interstate 691, and is bisected by Connecticut Route 10.[10] Other major transportation routes include Routes 10, 120, 177, 229, 322, and 364. Although no longer served by a railroad, the Town is part of the CTFastrak bus rapid transit system providing bus services to Hartford and Waterbury.

[9] Evaluation of the "10-Year" Smoke Alarm Project (nchharchive.org)
[10] Town of Southington

The effects of the pandemic COVID-19 stretched much farther than health problems, as the unemployment figure across the U.S. and the World spiked at record rates. From January 2000 to December 2017 Southington's unemployment rate fell below the state and national rate each month. The employment level in Southington does correspond to risks managed by local governments, including fire departments. As residents commute to work, traffic congestion slows and even alters emergency response routes and times. Often, fire department incident call volume is highest during the morning and evening worker commute.

Residents of Southington experienced a mean travel time to work of 32.2 minutes (2014-2018). Large numbers of resident's commute to workplaces in Southington, and many additional residents commute to neighboring communities. The following figure depicts the destination for residents for employment.

Figure 38. Southington Citizen's Employment Destination



Large Square Footage Buildings

Large square footage buildings include warehouses, shopping malls, industrial complexes, and similar sized buildings. Large square footage buildings provide additional challenges to emergency responders over buildings more routinely found within a jurisdiction. Because of the larger size, additional personnel and larger volumes of water compound the effect on the emergency response system.

In addition to extra firefighting personnel for handling larger and additional hose lines, firefighters must also advance hose lines further than in smaller sized buildings. Also, other positions become necessary when fighting fires in these large buildings. Examples of additional crews needed for large facilities include safety hose lines and rapid intervention crews (RIC), multiple water supply points, responder rehabilitation, medical stand-by, and personnel refilling air supply cylinders.

Because large square footage facilities require extended search and rescue times, occupant safety is also at greater risk. These structures rely on fire protection systems to extinguish and/or stop the fire from progressing past the area or room of origin. Negative economic impacts follow an emergency incident of this magnitude.

Target Hazards and Critical Infrastructure

Target Hazards

The Federal Emergency Management Agency (FEMA) defines target hazards as "facilities in either the public or private sector that provide essential products and services to the general public, are otherwise necessary to preserve the welfare and quality of life in the community, or fulfill important public safety, emergency response, and/or disaster recovery functions." The NFPA further breaks these down into three risk categories for occupancies.

- **High-Risk Occupancy**: An occupancy that has a history of high frequency fires, high potential for loss of life or economic loss, or that has a low or moderate history of fires or loss of life, but the occupants have a high dependency on the built-in fire protection features or staff to assist in evacuation during a fire or other emergency.

- **Moderate-Risk Occupancy**: An occupancy that has a history of a moderate frequency of fires or a moderate potential for the loss of life or economic loss.

- **Low-Risk Occupancy:** An occupancy that has a history of low frequency of fires and minimal potential for life or economic loss.

Target hazards should be the focus of planning efforts for preparedness, resiliency, and recovery efforts. The impact of disruption to the normal operation of these critical facilities can compound other effects and impacts on a community. Therefore, response plans, drills, and training evolutions assist in familiarity and efficiency for emergency response operations at these facilities.

Critical Infrastructure

Critical infrastructure are assets, systems, and networks, whether physical or virtual, that are so vital to the community that their damage or destruction would have a debilitating effect.

Critical infrastructure in Southington includes the four Fire Stations, Police Department (Emergency Operations Center), Town Hall, Water Department, Water Pollution Control Facility, Municipal Center, Calendar House (Senior Center), eight elementary schools, two middle schools, and the high school.

Capitol Region Natural Hazards Mitigation Plan

The Capitol Region includes 38 municipalities around Connecticut's State Capitol of Hartford. Through the Capitol Region Council of Governments, this region is active in planning for natural hazards mitigation to reduce their vulnerabilities to natural disasters and enable our communities to minimize losses and recover more effectively when disasters do occur.

The Capitol Region Council of Governments has prepared a multi-jurisdictional natural hazard mitigation plan that has been adopted by all member cities and towns and received FEMA's approval on November 7, 2019. The plan will be in effect until November 6, 2024.

The purpose of this plan is to identify natural hazards likely to affect the Capitol Region and its nearly one million residents, assess vulnerabilities to these hazards, and set forth mitigation strategies that will reduce the loss of life and property, economic disruptions, and the cost of post-disaster recovery for the region's communities. The impacts of these natural hazards were evaluated as well as the locations and groups of people particularly vulnerable to the effects of these hazards. Mitigation goals and strategies were developed at both the regional and local levels to reduce or prevent the damages to life and property that can result from these natural hazards. The Capitol Region Council of Governments, the Capitol Region Emergency Planning Committee, as well as local and other partners, are responsible for the implementation of the regional goals contained in this plan. Each participating municipality identified its own mitigation goals and strategies and assumes responsibility for the implementation of those measures.

This Hazard Mitigation Plan includes a very thorough community risk assessment. This section of the Southington Fire Department Master Plan summarizes the Hazard Assessments and Goals contained within the plan. ESCI will then correlate the Hazard Mitigation Plan with the Historical Service Demand and Performance of the Southington Fire Department.

The Capitol Region Hazard Mitigation Plan considers the following natural hazards that affect the region:

Figure 39. Natural Hazards Considered in the Capitol Region Hazard Mitigation Plan

Natural Hazards
Dam Failure
Drought
Earthquake
Flooding
Forest and Wildland Fires
Hurricanes and Tropical Storms
Tornadoes and High Winds
Severe Winter Storms

Within the Hazard Mitigation Plan, the impacts of these natural hazards were evaluated as well as the locations and groups of people particularly vulnerable to the effects of these hazards. Mitigation goals and strategies were developed at both the regional and local levels to reduce or prevent the damages to life and property that can result from these natural hazards. The Capitol Region Council of Governments and Capitol Region Emergency Planning Committee, in addition to local and other partners, are responsible for the implementation of the regional goals contained in this plan. Each participating municipality identified its own mitigation goals and strategies and assumes responsibility for the implementation of those measures.

To evaluate the impacts of these hazards on the region, the planning committee evaluated historical accounts of major storms and other events; examined flood insurance claims data and public assistance provided after federally declared disasters; analyzed demographic data and physical features; and used HAZUS- MH, a computer model, to estimate losses due to flooding, hurricanes, and earthquakes.

As part of the 2019 Plan Update, the planning committee and local and regional staff reexamined the goals, objectives, and strategic mitigation activities proposed in the 2014 Plan. The committee further considered the experience of the member communities with natural disasters of the last five years as well as input from the public and other stakeholders to develop a blueprint for better protecting the region during the next five years. This process culminated with each mitigation action being prioritized, and responsible agencies, potential funding sources, and time frames for implementing the projects identified. The adopted goal is to "Minimize the loss of life and property and economic disruptions that can result from natural hazards. The following four objectives and associated mitigation actions were developed in support of that goal.

Figure 40. Hazard Mitigation Plan Objectives and Mitigation Actions

Hazard Mitigation Plan Objectives and Mitigation Actions
Objective 1: Improve stormwater management and groundwater recharge throughout the region to prevent increased flooding and lessen the effects of drought.
Mitigation Actions: 1.1 Encourage all municipalities in the region to adopt regulations that incorporate or refer to recommended practices from the most current Connecticut Stormwater Quality Manual, Connecticut Guidelines for Erosion and Sedimentation Control and, in particular, those that promote low-impact development and green infrastructure techniques. This will encourage development that is in harmony with natural drainage systems. 1.2 Foster improved understanding of the importance of stream management, maintenance of natural drainage channels, and use of green infrastructure practices among municipal staff, inland wetlands commissions, and planning and zoning commissions through education.
Objective 2: Assist municipalities in implementing hazard mitigation strategies.
Mitigation Actions: 2.1 Work with member municipalities to maintain this regional Natural Hazard Mitigation Plan with updates at least every 5 years. 2.2 Annually notify communities of the opportunities to apply for mitigation funds under the PDM and FMA programs and notify communities of HMGP opportunities as applicable. Provide letters of support when appropriate. 2.3 Incorporate additional natural hazard mitigation concerns into the regional Plan of Conservation and Development if it is updated in 2019-2024, and provide specific instructions to municipalities to address natural hazard mitigation in local Plans of Conservation and Development as they are updated. 2.4 Encourage municipalities to participate in the National Flood Insurance Program's Community Rating System by hosting an information workshop.
Objective 3: Assist municipalities in minimizing risks associated with power disruptions.
Mitigation Actions: 3.1 Encourage the installation of generators at critical facilities and in developments serving the elderly or special need populations, or development of microgrids to serve the same purpose, through outreach and associated work with local officials to determine which facilities still do not possess standby power but require it.
Objective 4: Assist municipalities in minimizing risks associated with droughts.
Mitigation Actions: 4.1 Assist municipalities that do not currently have drought ordinances in enacting such ordinances to enable the enforcement of water conservation, and assist with messaging and notifications regarding droughts. These actions should be consistent with guidance resulting from implementation of the State Water Plan (2018) and the Coordinated Water System Plan (2018) as well as the updated Connecticut Drought Preparedness and Response Plan.

Each of the 38 municipalities in the Capitol Region also reassessed its goals, objectives, and strategic mitigation actions from the 2014 Plan and developed a new strategic course of action for the upcoming 5 years. While many are unique to the individual communities, there are commonalities among the actions proposed, and most communities have proposed a range of activities including public education and awareness; natural resource protection; plans, studies, and regulatory actions; structural projects and modifications to buildings, facilities, and infrastructure; as well as measures to improve preparedness and emergency response.

The Capitol Region Natural Hazards Mitigation Plan has identified the top three natural hazards that present a high risk to Southington are flooding, winter storms, and tropical storms/hurricanes. The plan summarizes the reasons for this prioritization as follows:

Flooding: Southington experiences recurrent flooding throughout Town, with localized flooding at known locations four to five times per year. As the town is relatively flat, floodwaters tend to recede slowly. Known flooding areas include West Main Street, Woodruff Street, Curtiss Street, North Main Street, Pratt Street, and River Street and the area along the Quinnipiac Reviver are prone flooding.

Winter Storms: Ice and snow make roads impassable and down tree limbs, disrupting utility service. People can become stranded in their homes, potentially without heat or power. Higher elevations may be at a greater risk. Following Winter Storm Alfred in late October 2011, power was lost for nine days to most customers, with some power not restored for two weeks. Many restaurants did not have backup power and there was significant spoilage. A few areas, such as those near large fields, are prone to drifting snow. Following the January 2013 blizzard, snow removal was the primary financial impact. Two commercial roofs were reported collapsed due to this event. No significant impacts due to icing have been observed in recent years. Ice jam flooding tends to be localized. Areas on the east side of Town near the reservoir, and open areas with higher elevation, generally have icing during winters.

Tropical Storms / Hurricanes: Following Tropical Storm Irene in 2011, power was lost for approximately one day in Southington, although some residents lost power for up to five days. A maximum of 3,854 customers were without power. Damages during Tropical Storm Sandy were relatively minimal.

Average Annualized Loss figures are useful tools for comparison of the risks faced from different hazards with different likelihoods of occurring in a given time period. Within the Capitol Region Hazard Mitigation Plan, dam failure, drought, tornado, and wildfire losses were sourced from the 2014 Connecticut Natural Hazard Mitigation Plan Update, with dam failure data supplemented by the National Performance of Dams Program and the Connecticut Department of Energy & Environmental Protection. Earthquake and hurricane losses were calculated in HAZUS-MH. Losses for flooding came from NFIP claims, for winter storms from Public Assistance Reimbursements, and for thunderstorms from the NCEI database. These are presented in the table below in dollars per year.

Figure 41. Average Annualized Losses, Southington[11]

Dam Failure	Drought	Earthquakes	Flooding	Hurricanes and Tropical Storms	Severe Winter Storms	Thunderstorms	Tornadoes	Wildfires	Total
$77	$0	$86,576	$20,510	$2,699,933	$127,416	$5,720	$631,903	$6,675	$3,758,810

The Town of Southington's top six mitigation strategies, in order of priority, are listed below. Southington has two top priorities and two priorities listed third.

Tied for Priority 1: Natural Resources and Protection; Structural Projects

Tied for Priority 3: Prevention; Property Protection

Priority 5: Education and Awareness

Priority 6: Preparedness and Emergency Response

The Town of Southington has proposed to initiate 17 mitigation strategies during the 5-year period of the Capitol Region Hazard Mitigation Plan. They are listed below in order starting with the highest priority based on FEMA Guidelines.

Figure 42. 2019-2024 Mitigation Strategies[12]

Action #1	
Consider and document the labor resource needs and benefits of participation in the Sustainable CT program.	
Goal	4. Increase the use of natural, "green," or "soft" hazard mitigation measures, such as open space preservation and green infrastructure.
Category	Natural Resources Protection
Lead	Planning
Cost	$0 - $10,000
Funding	Town Operating Budget
Timeframe	01/2019 - 12/2019
Priority	High

[11] https://crcog.org/wp-content/uploads/2019/12/Southington.pdf
[12] https://crcog.org/wp-content/uploads/2019/12/Southington.pdf

Action #2	
Include procedures specific to the liquid propane plant in the Town's Emergency Operations Plan	
Goal	7. Improve the emergency response capabilities of the region and its communities
Category	Preparedness & Emergency Response
Lead	Planning
Cost	$0 - $10,000
Funding	Town Operating Budget
Timeframe	07/2019 - 06/2020
Priority	High

Action #3	
Purchase new generator for the municipal center.	
Goal	7. Improve the emergency response capabilities of the region and its communities
Category	Preparedness & Emergency Response
Lead	Emergency Management
Cost	$10,000 - $25,000
Funding	Town Operating Budget / DEMHS
Timeframe	01/2019 - 12/2020
Priority	High

Action #4	
Construct dry hydrants and cisterns on the east side of town and near West Ridge	
Goal	7. Improve the emergency response capabilities of the region and its communities
Category	Preparedness & Emergency Response
Lead	Fire Department
Cost	$25,000 - $50,000
Funding	CT DEEP
Timeframe	07/2020 - 06/2021
Priority	High

Action #5	
Conduct outreach to local small businesses with the aim of preventing the accidental release and pollution from chemicals stored and used at their facilities during or following natural hazard events.	
Goal	6. Improve public outreach, education, and warning systems
Category	Education & Awareness
Lead	Planning, in coordination with DEEP
Cost	$0 - $10,000
Funding	Materials & Resources Provided by CT DEEP
Timeframe	01/2019 - 12/2019
Priority	Medium

Action #6	
Coordinate with NEMO and CRCOG to share resources and gain technical support for hazard mitigation actions involving stormwater management and public outreach, which have parallel benefits related to MS4 stormwater permit compliance.	
Goal	1. Minimize the impact of natural hazards on physical buildings and infrastructure
Category	Prevention
Lead	Public Works
Cost	$0 - $10,000
Funding	Town Operating Budget
Timeframe	01/2020 - 12/2020
Priority	Medium

Action #7	
Participate in EMI courses or the seminars and annual conference held by the Connecticut Association of Flood Managers.	
Goal	3. Improve institutional awareness and understanding of natural hazard impacts and mitigation within municipal governments and other decision-making bodies
Category	Education & Awareness
Lead	Planning
Cost	$0 - $10,000
Funding	Town Operating Budget
Timeframe	07/2019 - 06/2024
Priority	Medium

Action #8	
Create and adopt Low Impact Development (LID) regulations.	
Goal	2. Ensure Municipal Codes and Regulations support hazard mitigation
Category	Prevention
Lead	Planning
Cost	$10,000 - $25,000
Funding	Town Operating Budget / Grants
Timeframe	01/2020 - 12/2022
Priority	Medium

Action #9	
Require installation of underground utilities in all new developments, when feasible, through the Subdivision Regulations.	
Goal	2. Ensure Municipal Codes and Regulations support hazard mitigation
Category	Prevention
Lead	Planning
Cost	$10,000 - $25,000
Funding	Town Operating Budget
Timeframe	07/2020 - 06/2022
Priority	Medium

Action #10	
Work with groceries and gas stations to assist them with installation of emergency generators so they can reopen quickly following hazard events.	
Goal	7. Improve the emergency response capabilities of the region and its communities
Category	Preparedness & Emergency Response
Lead	Emergency Management
Cost	$25,000 - $50,000
Funding	Town Operating Budget
Timeframe	07/2021 - 06/2023
Priority	Medium

Action #11	
Purchase new equipment for snow removal.	
Goal	7. Improve the emergency response capabilities of the region and its communities
Category	Preparedness & Emergency Response
Lead	Public Works
Cost	$50,000 - $100,000
Funding	Grants
Timeframe	01/2023 - 12/2024
Priority	Medium

Action #12	
Contact the owners of Repetitive Loss Properties and nearby properties at risk to inquire about mitigation undertaken and suggest options for mitigating flooding in those areas. This should be accomplished with a letter directly mailed to each property owner.	
Goal	1. Minimize the impact of natural hazards on physical buildings and infrastructure
Category	Property Protection
Lead	Planning
Cost	$0 - $10,000
Funding	Town Operating Budget / DEMHS
Timeframe	07/2021 - 06/2022
Priority	Low

Action #13	
Coordinate with CT SHPO to conduct outreach to historic property owners to educate them on methods of retrofitting their properties to be more hazard-resilient while maintaining historic character.	
Goal	8. Ensure community character and social equity are addressed in mitigation activities
Category	Education & Awareness
Lead	Planning, in coordination with SHPO
Cost	$0 - $10,000
Funding	SHPO
Timeframe	01/2021 - 12/2022
Priority	Low

Action #14	
Coordinate with CT SHPO to conduct historic resource surveys, focusing on areas within natural hazard risk zones (such as flood or wildfire hazard zones and areas near steep slopes), to support identification of vulnerable historic properties and preparation of resiliency plans across the state. This action leverages existing resources and best practices for protection of historic and cultural resources through an ongoing statewide initiative by CT SHPO.	
Goal	8. Ensure community character and social equity are addressed in mitigation activities
Category	Property Protection
Lead	Planning, in coordination with SHPO
Cost	$10,000 - $25,000
Funding	SHPO
Timeframe	07/2021 - 06/2023
Priority	Low

Action #15	
Work with CT DEEP to complete a formal validation of the Repetitive Loss Property list and update the mitigation status of each listed property.	
Goal	1. Minimize the impact of natural hazards on physical buildings and infrastructure
Category	Property Protection
Lead	Planning
Cost	$10,000 - $25,000
Funding	Town Operating Budget / CT DEEP / DEMHS
Timeframe	07/2021 - 06/2023
Priority	Low

Action #16	
Work with property owners to remove constrictions and/or widen channels on private property to mitigate exacerbation of flooding conditions.	
Goal	6. Improve public outreach, education, and warning systems
Category	Education & Awareness
Lead	Public Works
Cost	$25,000 - $50,000
Funding	Town Operating Budget
Timeframe	07/2023 - 06/2024
Priority	Low

Action #17	
Relocate EOC to Fire Department and convert the current EOC at the Police Station into a backup EOC.	
Goal	7. Improve the emergency response capabilities of the region and its communities
Category	Structural Projects
Lead	Emergency Management
Cost	More than $100,000
Funding	Town Operating Budget / Grants / DEMHS
Timeframe	07/2023 - 06/2024
Priority	Low

Risk Prioritization

In Dr. Lori Moore-Merrell's recent article *3 Elements of an Effective Fire Department Community Risk Assessment*, she provided the following explanation for the three main elements that should provide the foundation for all community risk assessments:[13]

Figure 43. Community Risk Assessment Elements

Community Risk Assessment Element	Description
1. Probability (likelihood) of an incident occurring.	Probability is associated with the frequency of an incident type. Incidents with high probability will occur more frequently. Once these predictions are made, risks can then be ranked as having a low, moderate, or high probability of occurring.
2. Consequence (magnitude) of an incident on the community.	Consequence is the measure of the outcome of an incident type occurrence. To assess consequence, fire department leaders must first identify, categorize, and prioritize community hazards. Hazards are the causes of danger and peril in the community. Risk quantifies the degree of potential danger the hazard presents. The consequences of an emergency incident result from a combination of the risk level of the hazard, the duration and nature of the event, and the response interventions. Consequences are divided into four categories: 1. Civilian and firefighter injury or loss of life 2. Property damage or loss 3. Critical infrastructure damage or loss 4. Environmental damage or loss
3. Impact of an incident on the department's response system.	Impact is a measure that explains the effects of multiple concurrent incidents on the fire department. Impact describes a fire department's ability to provide ongoing services to the remaining areas of a community considering frequent activity in known high-volume demand areas.

[13] *https://www.lexipol.com/resources/blog/3-elements-of-an-effective-fire-department-community-risk-assessment/.*

Establishing Community Risk Priorities

After the risks within a community have been identified and prioritized, the community is well-positioned to develop an effective set of Community Risk Reduction strategies and tactics to mitigate the risks.

Figure 44. Community Risk Reduction Planning Cycle

The National Fire Protection Association defines Community Risk Reduction (CRR) as "programs, actions, and services used by a community, which prevent or mitigate the loss of life, property, and resources associated with life safety, fire, and other disasters within a community." Vision 20/20 describes Community Risk Reduction as a "process to identify and prioritize local risks, followed by the integrated and strategic investment of resources (emergency response and prevention) to reduce their occurrence and impact." In both instances, the previously identified and prioritized hazards form the basis for Community Risk Reduction Programs in an effort to save lives and property.

Figure 45. Community Risk Reduction Planning Considerations

Risk Assessment by First Due District

As previously stated within the Community Profile and Risk Identification section of this study, FEMA defines target hazards as "facilities in either the public or private sector that provide essential products and services to the general public, are otherwise necessary to preserve the welfare and quality of life in the community, or fulfill important public safety, emergency response, and/or disaster recovery functions." The NFPA further breaks these down into three risk categories for occupancies.

High-Risk Occupancy: An occupancy that has a history of a high frequency of fires, high potential for loss of life or economic loss, or that has a low or moderate history of fires or loss of life but the occupants have a high dependency on the built-in fire protection features or staff to assist in evacuation during a fire or other emergency.

Moderate-Risk Occupancy: An occupancy that has a history of a moderate frequency of fires or a moderate potential for the loss of life or economic loss.

Low-Risk Occupancy: An occupancy that has a history of a low frequency of fires and minimal potential for life or economic loss.

To provide a visual illustration of the areas of critical need in the Town of Southington, ESCI has produced *Risk Assessment by First Due District Maps* for each Southington Fire Department first due response area. These maps attribute a risk classification of low-, medium-, and high-risk to each parcel within individual station response areas. Specific Community Risk Priorities are included within the *Recommended Future Delivery System Models* section of this report.

A portion of the data used by ESCI to compile the *Risk Assessment by First Due District Maps* was compiled with the assistance of FireCARES: Community Assessment/Response Evaluation System. The content reproduced from the FireCARES Database remains the property of FireCARES and contributing fire departments. The FireCARES team and partners are not responsible for any claims arising from works based on the original Data, Text, Tables, or Figures. FireCARES uses publicly available land use records and associated information, and as such, the locality may have access to more recent and up-to-date records and information.

Community risks were determined via statistical regression models that predict various types of risk as a function of community attributes. Five community risks were modeled separately for low- medium- and high-hazard structures. The community risks were:

- Number of reported structure fires,
- Percentage of reported fires that spread beyond the room of origin,
- Percentage of reported fires that spread beyond the room of origin and spread beyond the structure of origin,
- Number of reported injuries resulting from structure fires, and
- Number of reported deaths resulting from structure fires.

Community risks were estimated for each of three different classes of structures in a community including low, medium, and high hazard structures as categorized by the NFPA.

Identifying and Categorizing Community Risk

Community risk level is typically established through an overall profile of the community based on the unique mixture of demographics, socioeconomic factors, occupancy risk, fire management zones, and the level of services currently provided.

Consequences of community hazards, associated risk events, and fire department mitigation efforts may be divided into 4 categories.

- Civilian and firefighter injury or loss of life.
- Property damage or loss.
- Critical infrastructure damage or loss.
- Environmental damage or loss.

Each of these categories contains hazards and therefore risks relevant to emergency responders.

Characteristics of properties can have significant impact on outcome and associated response requirements. Each property or structure in a community can be considered a hazard that carries inherent risks based on occupancy type and fire load.

Occupancy risk is a sublevel of property risk and is established through an assessment of the relative risk to life and property resulting from a fire inherent in a specific building/structure or in generic occupancy classes (e.g., high rise residential).

The *NFPA Fire Protection Handbook* defines hazard levels of occupancies by types.

High-Hazard Occupancies – High-rise buildings, hospitals, schools, nursing homes, explosive plants, refineries, public assembly structures, other high life hazard or large fire potential occupancies.

Medium-Hazard Occupancies – Apartments, offices, mercantile and industrial occupancies that may require extensive use of fire fighting forces.

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

Community risks were also estimated as a function of the socio-demographic and geographic characteristics of the locations (census tracts) of reported structure fires over a nine-year period (2007-2016) according to available NFIRS data. The socio-demographic attributes include:

- *Population characteristics* (e.g., size category of the department, population, number of males, age group counts, race counts).
- *Housing characteristics* (e.g., total housing units, total vacancies, size of home, number of renters, age of units).
- *Household characteristics* (e.g., median household income, social vulnerability index).
- *Geographic region.*

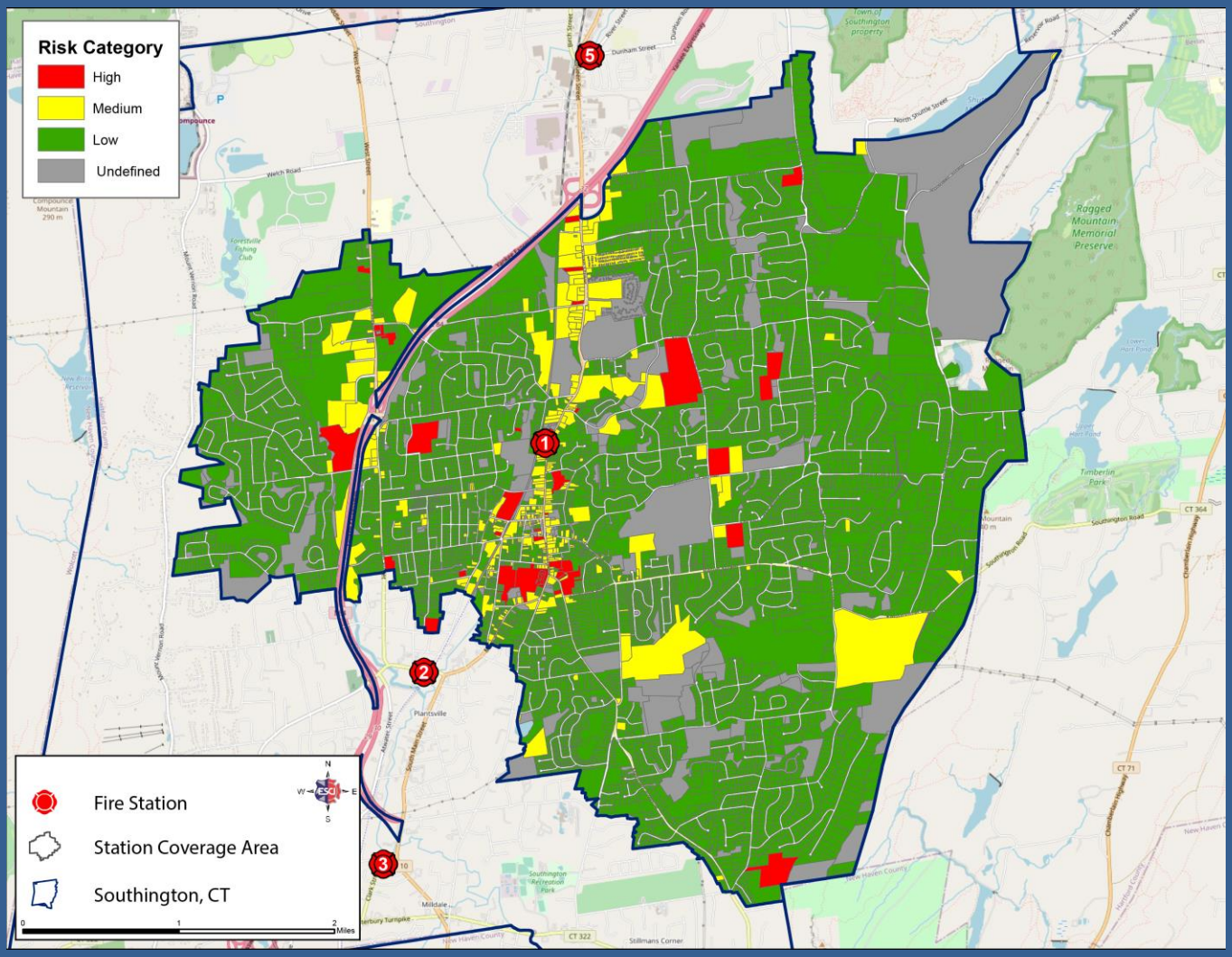
The final set of variables varied by model and were selected to ensure the best prediction of risk. Note that because deaths are rare, many departments will be predicted to have only a fractional number of deaths.

Community risks are not currently estimated for communities with populations less than 10,000 people because small departments are expected to behave different from larger departments.

Southington Fire Department

Risk Assessment by First Due District

Station 1 **310 North Main Street**

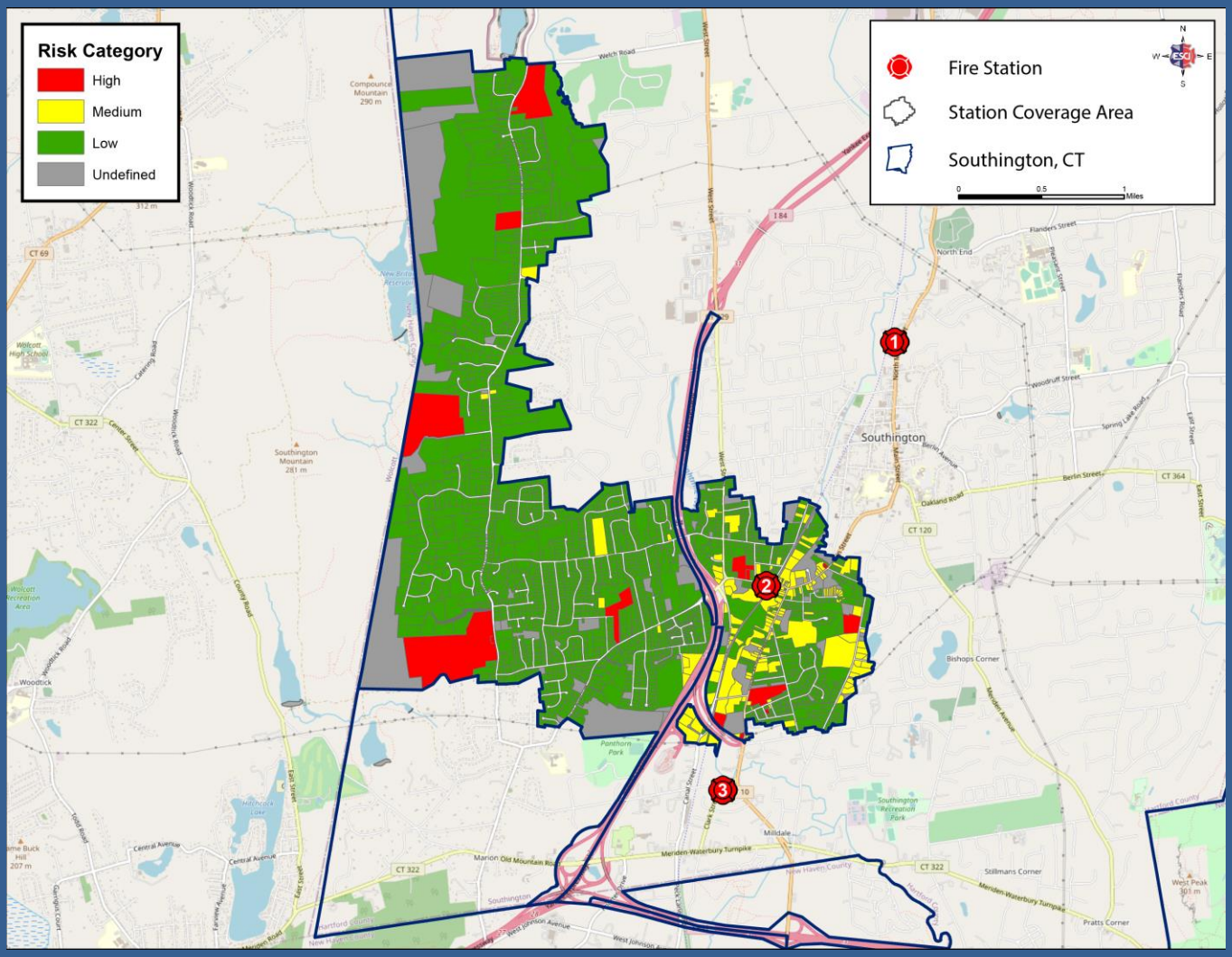


2020 Total Population	2020 Total Daytime Population	2020 Median Household Income	2020 Median Age	2020 Total Housing Units	2020 Owner Occupied HUs	2019 HHs w/1+ Person's w/Disability (ACS 5-Yr)	2019 HHs: Inc Below Poverty Level (ACS 5-Yr): Percent	2020 Total Businesses (SIC)	2020 Total Employees (SIC)
26,532	23,853	$97,686	46	10,959	8,497	2,564	4.62%	925	8,939

Southington Fire Department

Risk Assessment By First Due District

Station 2 **128 West Main Street**



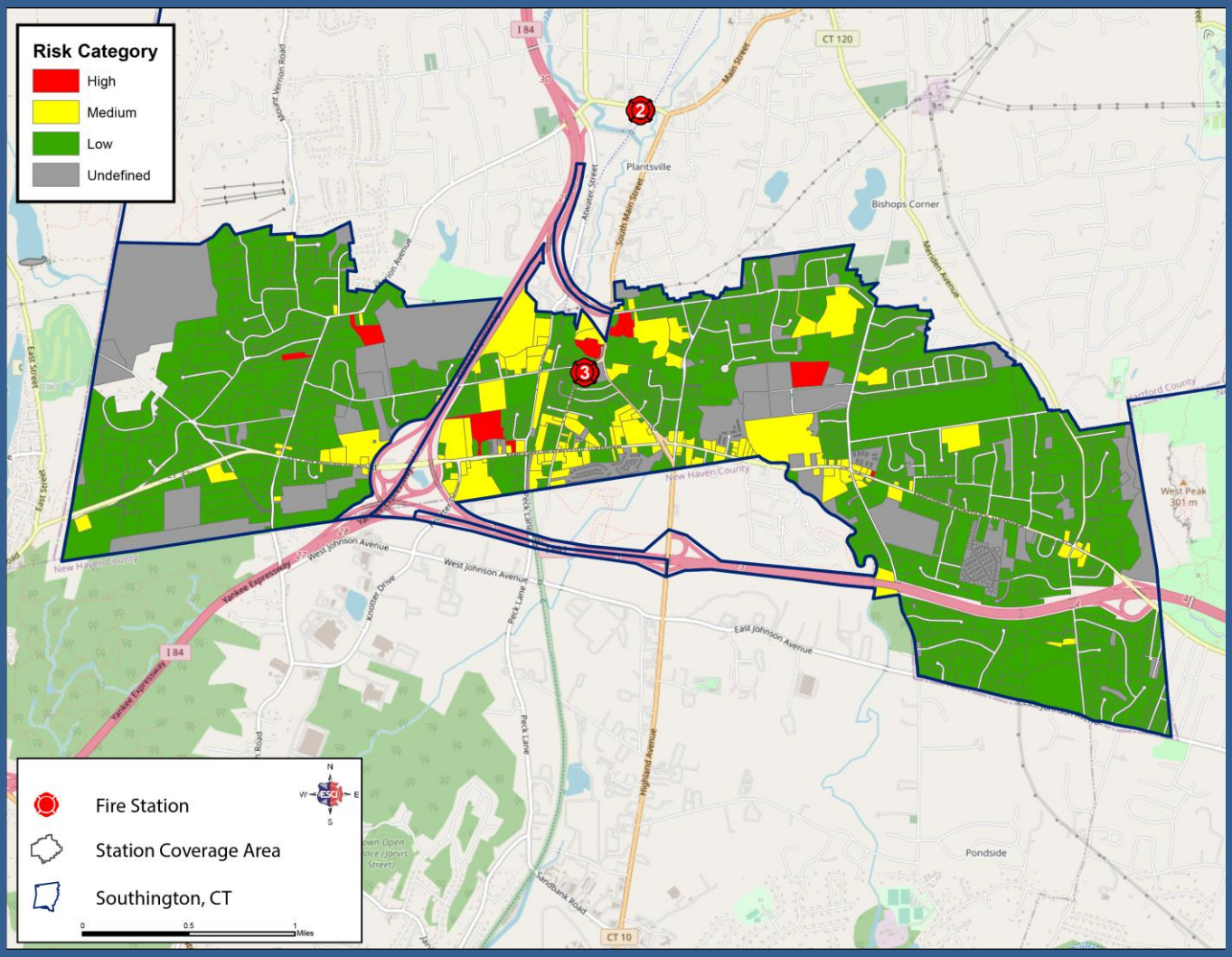
2020 Total Population	2020 Total Daytime Population	2020 Median Household Income	2020 Median Age	2020 Total Housing Units	2020 Owner Occupied HUs	2019 HHs w/1+ Person's w/Disability (ACS 5-Yr)	2019 HHs: Inc Below Poverty Level (ACS 5-Yr): Percent	2020 Total Businesses (SIC)	2020 Total Employees (SIC)
7,172	6,360	$109,119	44.4	2,837	2,278	458	4.04%	257	2,412

Southington Fire Department

Risk Assessment By First Due District

Station 3

35 Clark Street

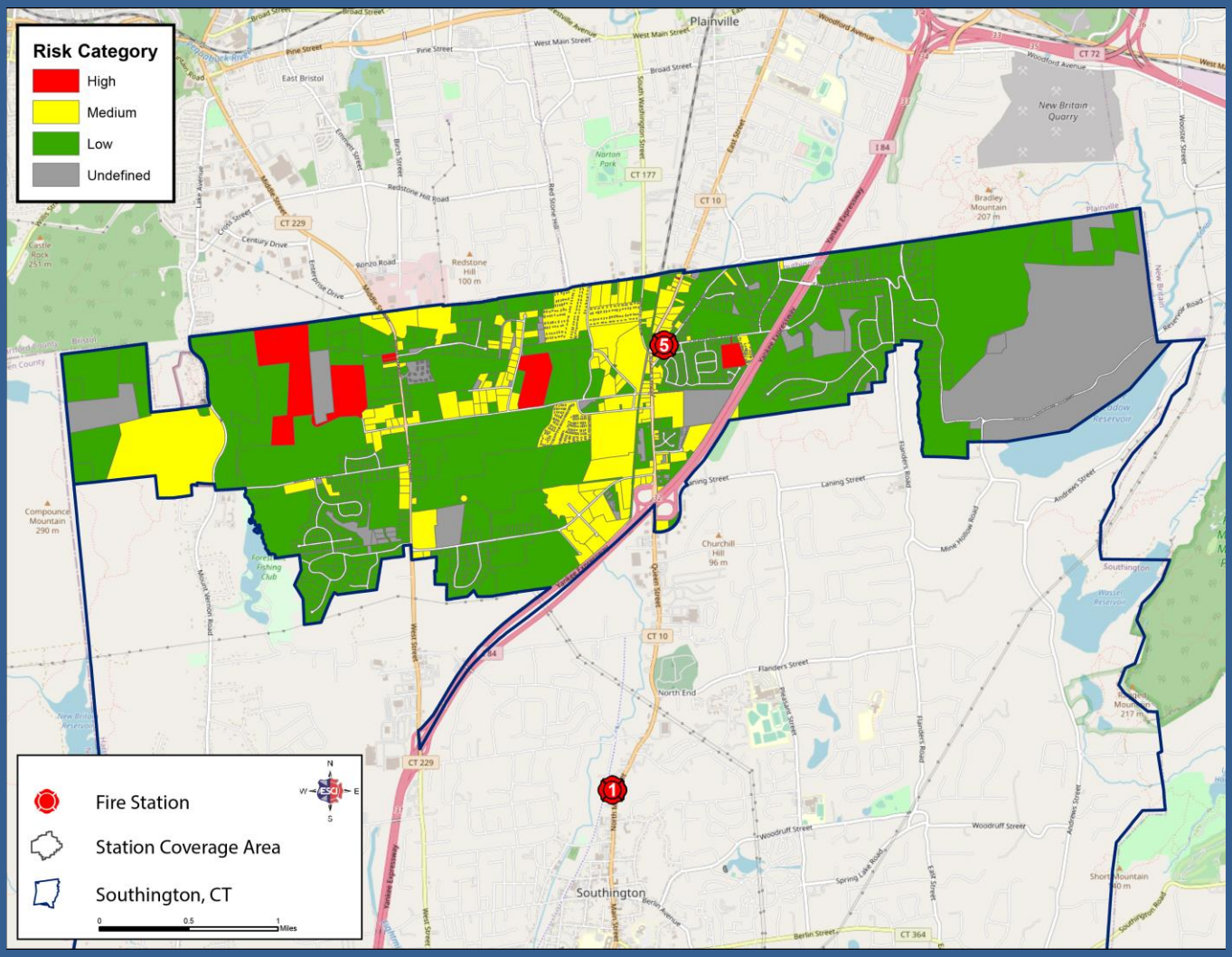


2020 Total Population	2020 Total Daytime Population	2020 Median Household Income	2020 Median Age	2020 Total Housing Units	2020 Owner Occupied HUs	2019 HHs w/1+ Person's w/Disability (ACS 5-Yr)	2019 HHs: Inc Below Poverty Level (ACS 5-Yr): Percent	2020 Total Businesses (SIC)	2020 Total Employees (SIC)
6,438	6,373	$100,342	46.6	2,604	2,069	604	3.47%	319	3,423

Southington Fire Department

Risk Assessment By First Due District

Station 5 **50 River Street**



2020 Total Population	2020 Total Daytime Population	2020 Median Household Income	2020 Median Age	2020 Total Housing Units	2020 Owner Occupied HUs	2019 HHs w/1+ Person's w/Disability (ACS 5-Yr)	2019 HHs: Inc Below Poverty Level (ACS 5-Yr): Percent	2020 Total Businesses (SIC)	2020 Total Employees (SIC)
2,989	5,209	$79,049	52.1	1,346	1,134	259	6.39%	372	5,580

Financial Overview

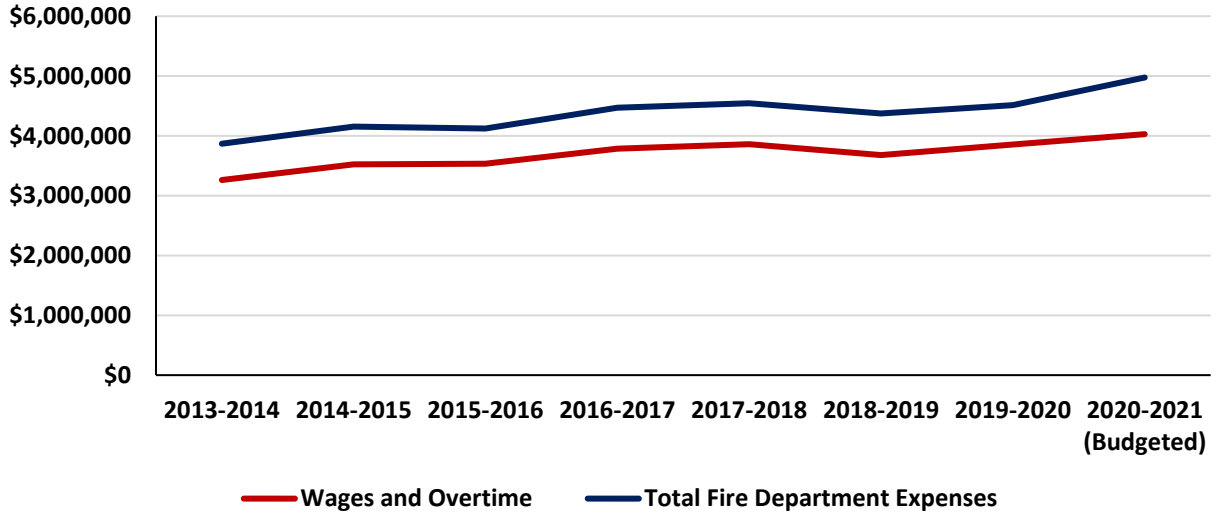
This section provides an analysis of the finances of the Southington Fire Department. The focus of this analysis is on the budgeted and actual expenses, union contract, post-employment benefits (OPEB), and costs of the volunteer program.

Documents provided by Southington for this analysis include the annual budgets, CAFRs, union contract, and apparatus plan. Additionally, the department provided estimates for the costs and effectiveness of the volunteer program.

Annual Budget

Public safety departments are inherently expensive to operate. Personnel costs, minimum staffing, and training are some of the major components that drive the overall department cost. Because of this, it is critical to understand what is driving changes to the costs and take appropriate steps to manage it for maximum value.

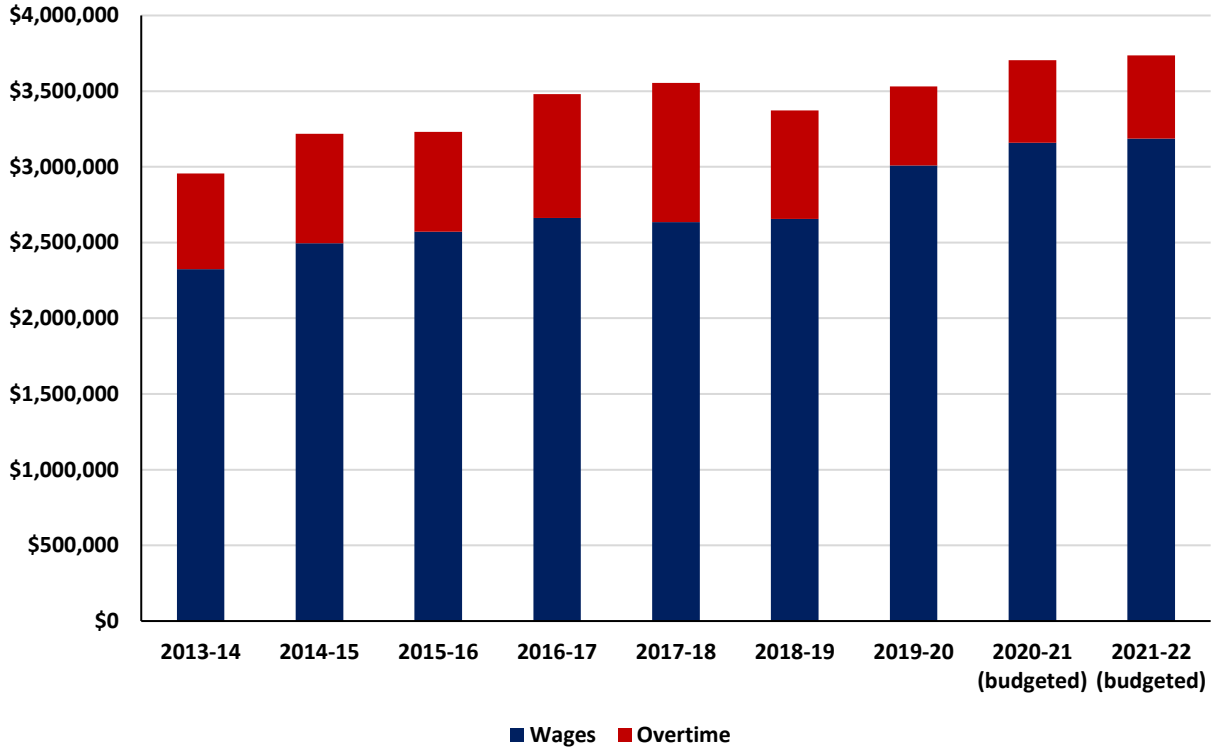
Figure 46. Total Expenses and Personnel Costs



As seen in the chart above, a nine year history of actual or budgeted expenses shows a steady but modest increase in overall department expenses as well as the largest component of that expense, wages, and overtime.

The average annual increase is 3.23% for total expenses and 3.06% for wages and overtime. This average increase indicates effective cost containment throughout this period. It is noteworthy that the department added two positions during this timeframe and still contained costs, mostly through a reduction in overtime. The chart below demonstrates the increasing overtime costs that were contained with the addition of new positions.

Figure 47. Wages and Overtime

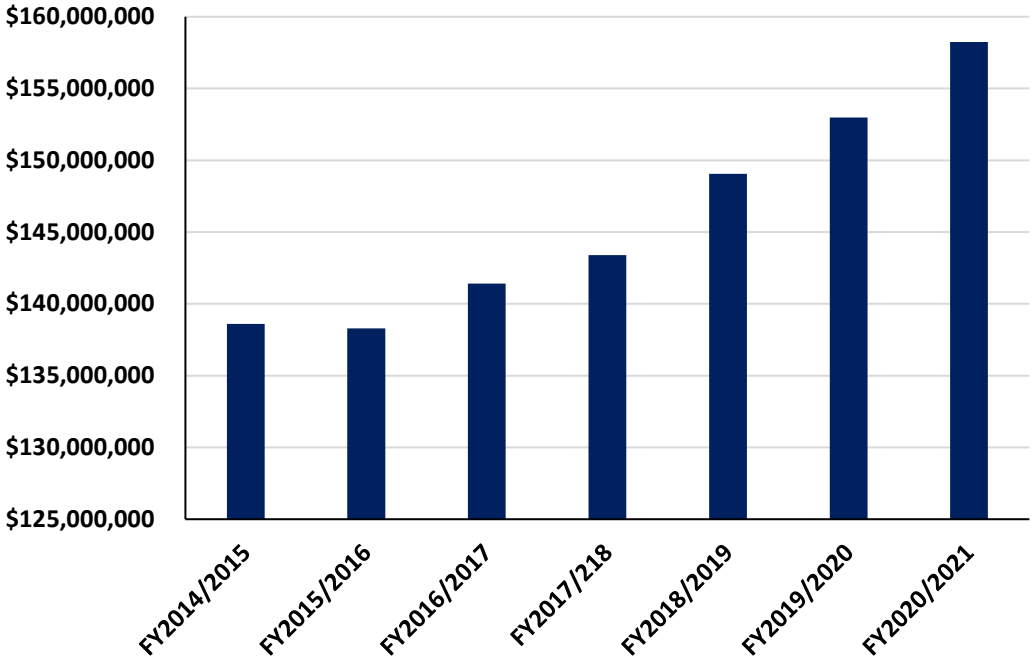


Town of Southington Historical Revenue and Expense

The Southington Fire Department is funded primarily through the General Fund of the Town of Southington. The General Fund is used for revenues and expenses for general government services such as education, police, fire, public works, library, public health, and administration. General fund revenues include property taxes, state aid, and local receipts. 80.8% of the revenue comes from Property Tax.

From FY2014/2015 through FY2020/2021, the General Fund has grown at an average annualized rate of 2.95%. The General Fund has ranged from $138,608,727 in 2014/2015 to $158,243,387 in 2020/2021. This growth is shown in the table and chart below.

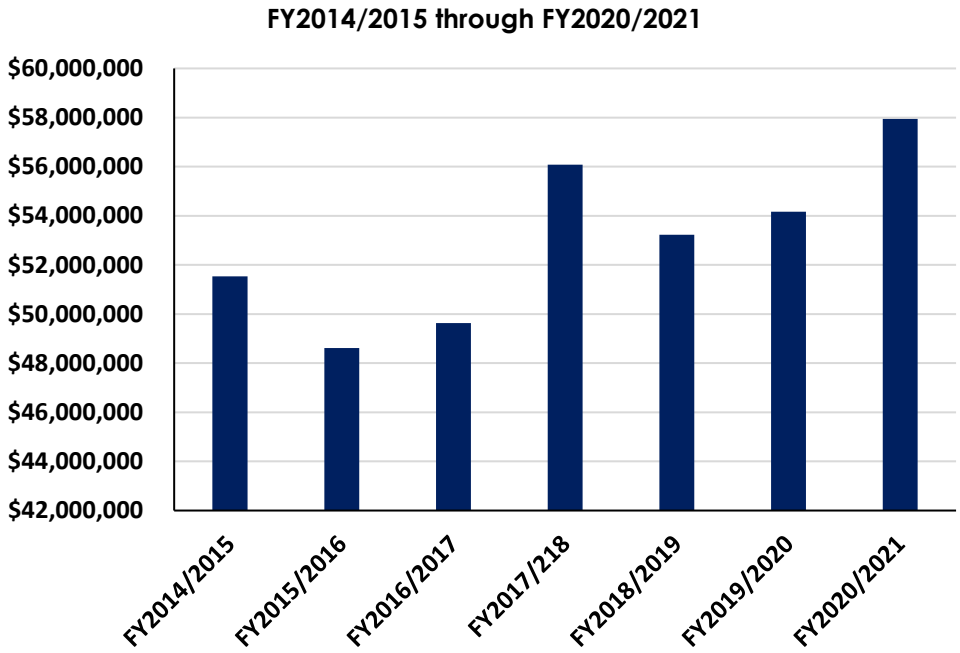
Figure 48. Town of Southington General Fund FY2014/15 - FY2020/21



The Town of Southington breaks up the General Fund into two categories. One section includes Education and General Government combined. Those are the figures that are shown in the graph and chart above. For Southington Fire Department, the more important measurement will be the General Government portion of the General Fund.

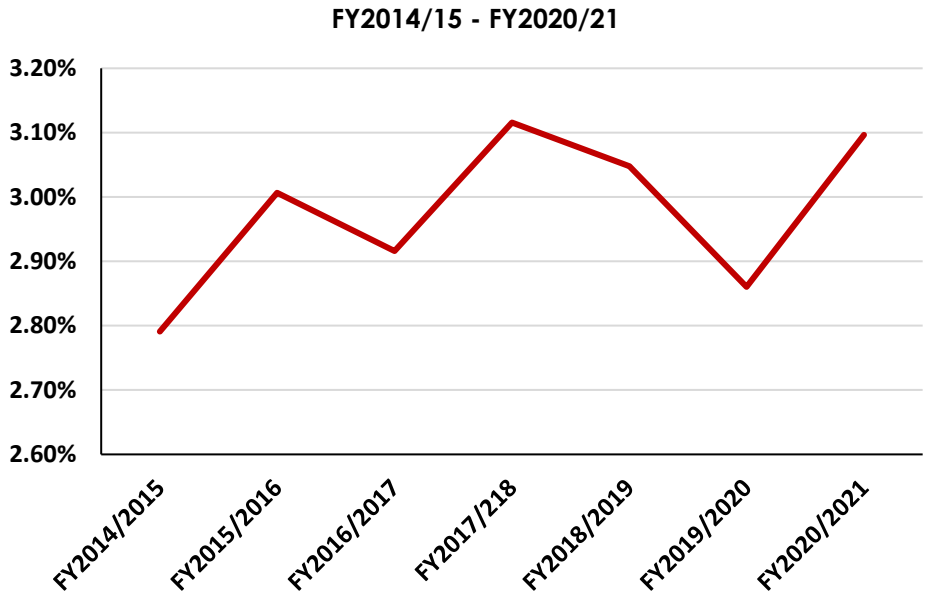
From FY2014/2015 through FY2020/2021, the General Government General Fund has grown at an average annualized rate of 3.91%. The General Fund has ranged from $51,536,722 in 2014/2015 to $57,941,942 in 2020/2021. This growth is shown in the following chart.

Figure 49. Town of Southington General Government General Fund Totals



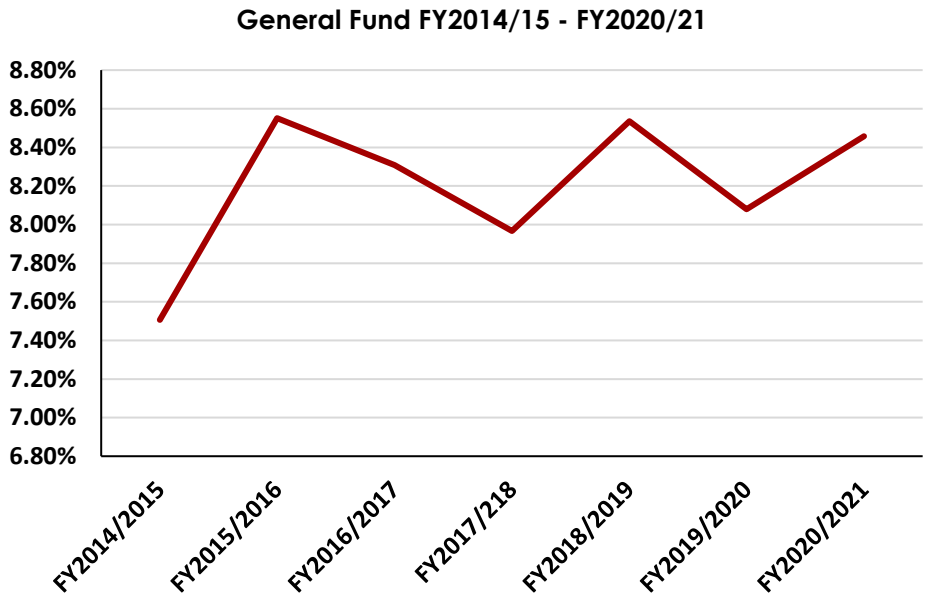
ESCI notes that General Government General Fund growth rate is out pacing the Combined General Fund growth rate. This is an that may require some investigation to ensure proper funding exists within the current tax base to fund the future increase in budgeted needs. Southington Fire Department makes up, on average, 2.98% of the Total General Fund for the Town of Southington. This is shown in the graph below.

Figure 50. Southington Fire Department Percentage of General Fund



The Southington Fire Department makes up, an average of 8.2% of the General Government General Fund. This is shown in the graph below.

Figure 51. Southington Fire Department Percentage of General Government



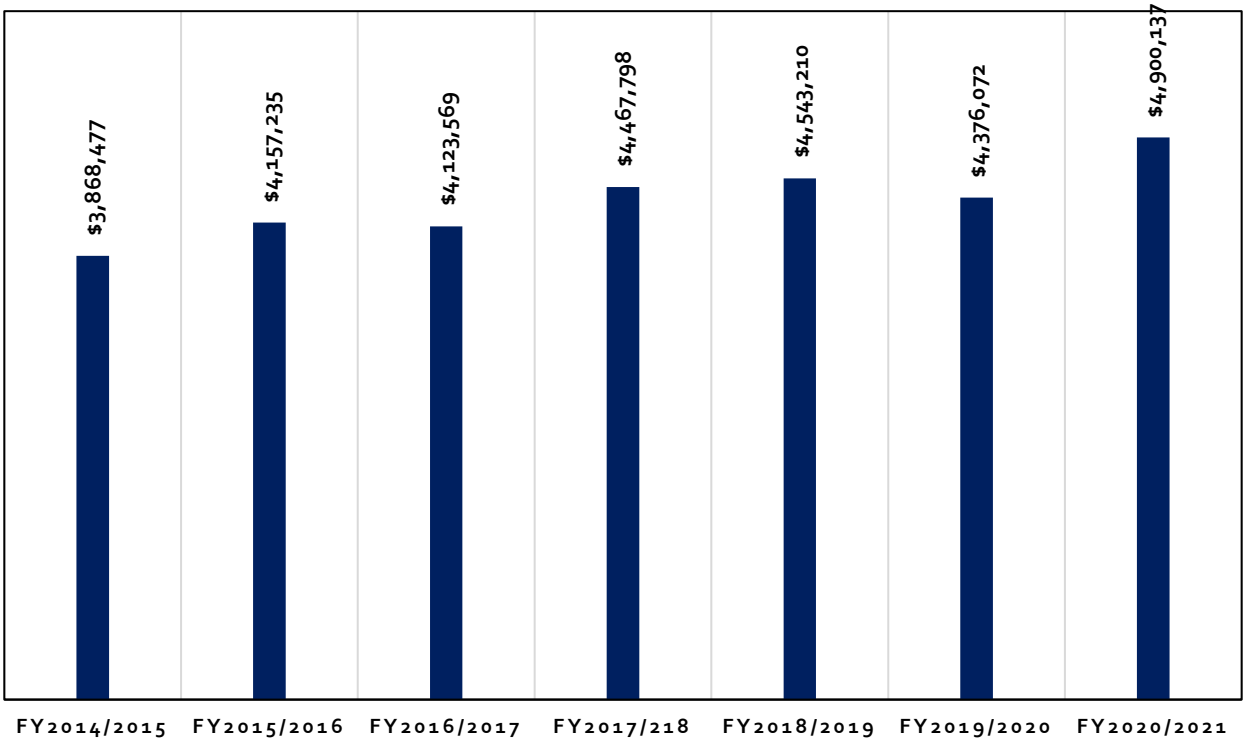
The Southington Fire Department makes up a relatively small portion of the combined General Fund. But when compared with its representative portion of the General Government fund, Southington Fire Department is approaching 10% of the total.

Southington Fire Department Historical Expense

The Southington Fire Department's budget has experienced growth from FY2014/15-FY2020/21. The budget has grown at an annualized average rate of 4.16%. Growing from $3,868,477 in FY2014/15 to $4,900,137 in 2020/21. The chart and graph below show the historical growth of the Southington Fire Department budget from FY2014/2015-FY2020/21.

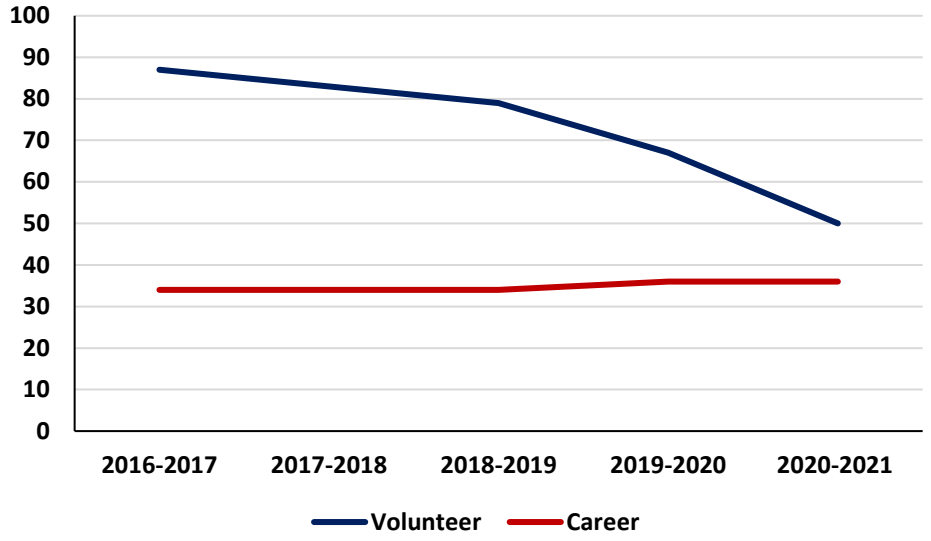
Figure 52. Southington Fire Department Budget

FY2014/15-FY2020/21



During the period of FY2016/17-FY2020/21, the Southington Fire Department has experienced some changes in the total Full Time Equivalent positions during each Fiscal Year. These counts have ranged from 34 positions in 2016/17 to 36 positions in 2020/21. ESCI would suggest that the Southington Fire Department evaluate this area and make sure that there are adequate filled positions to meet the needs of the Town of Southington. The graph below shows the changes in position counts from FY2016/17-FY2020/21.

Figure 53. Southington Fire Department Total Positions FY2016/17-FY2020/21

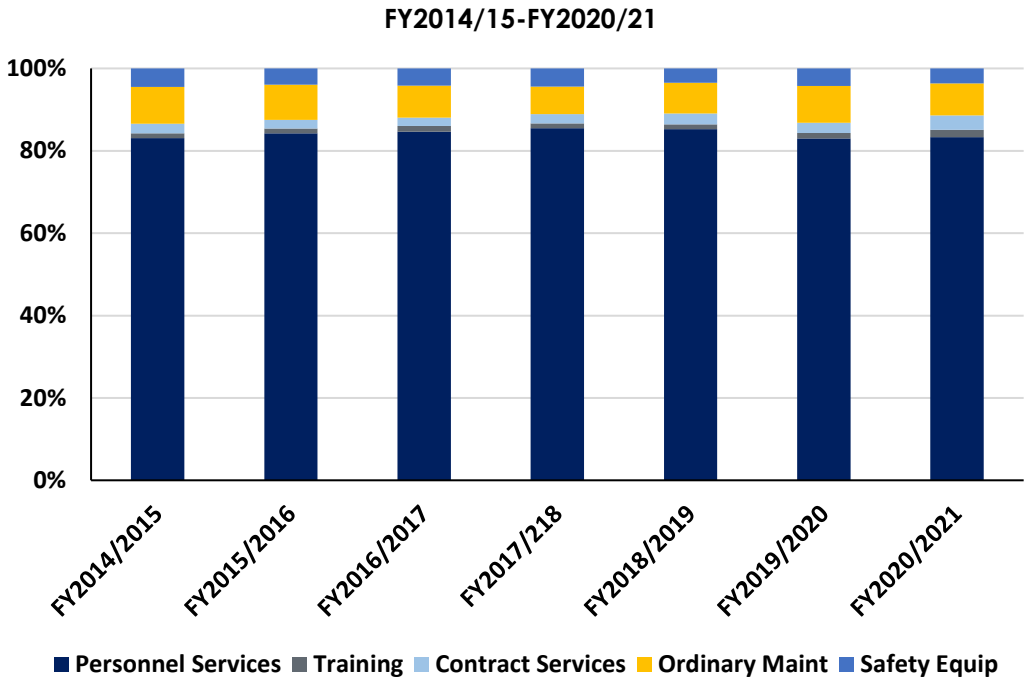


To provide the Southington Fire Department with an overview of how expenses occur in relation to one another, ESCI has broken the department budget in to 5 areas with the description of each below:

- **Personnel Services:** Employee Wages, Overtime, Private Duty Overtime (Reimbursable), Longevity, Stipends, Volunteer Reimbursement, Tuition Reimbursement, Health Club Reimbursement, Volunteer Firefighter Life Insurances, Annual 401(a) Town Contribution for Volunteers, Uniform and Shoes, Dues and Conferences
- **Training:** Tuition, Online Services, Recertification Expenses, Props, Textbooks
- **Contract Services:** Legal Fees, Annual Maintenance Contracts, Medical Services, Energy Lease, Refuse/Haz Waste
- **Ordinary Maintenance:** Building Maintenance, Vehicle Maintenance, Utilities, Fuel, Office Supplies, Program Supplies, Equipment and Furniture
- **Safety Equipment:** Fire Equipment, Minitor Pagers, Portable Radios, Air Packs and Equipment, and Thermal Imaging Cameras

The following graph illustrates the Southington Fire Department Budget broken out by the categories listed above.

Figure 54. Southington Fire Department Budget by Category



Personnel Services makes up the largest portion of the Southington Fire Department Budget. Personnel accounts for 84.16% of the total budget on average. Ordinary Maintenance makes up 8.02% on average. Safety Equipment is third at 4.05% on average. Contract Services and Training make up a little less than 2% each. Expenses over the 7-year period remain steady and do not show areas of uncontrolled growth. Although the budgets have experienced growth, the categories remain stable as a percentage of the whole.

Of particular interest for the Southington Fire Department are the true and comparable costs of funding both volunteer and career services. While the annual expense of an individual volunteer is less than that of an employee, the costs of recruiting, retaining, or replacing multiple volunteers annually possesses a cost that should be identified and evaluated. Recruiting fewer high performing volunteers who can be retained for several years is often more cost effective than continually training, outfitting, and losing volunteers in high numbers in an attempt to maintain roster numbers seen in the past. The decline in volunteerism is a national issue that affects all volunteer organizations such as Rotary, Boy Scouts, and the Volunteer Fire Service. Investments in the retention of volunteer firefighters are as critical as finding new recruits. Southington Fire Department should analyze and evaluate the true costs of a volunteer firefighter and determine the timeframe required to reach the balance point for return on investment. If volunteer firefighters cannot reliably be retained through that point, investments will be needed to address the retention issue or to seek other avenues to ensure the responsible spending of taxpayer dollars.

Expenses over the 7-year period remain steady and do not show areas of uncontrolled growth. Although the budgets have experienced growth, the categories remain stable as a percentage of the whole.

Below, a series of charts are presented that reflect the Southington Fire Department Budget broken down within categories. These charts help to visually show the stability within the categories over time.

Figure 55. Southington Fire Department Budget by Category FY2014-2015

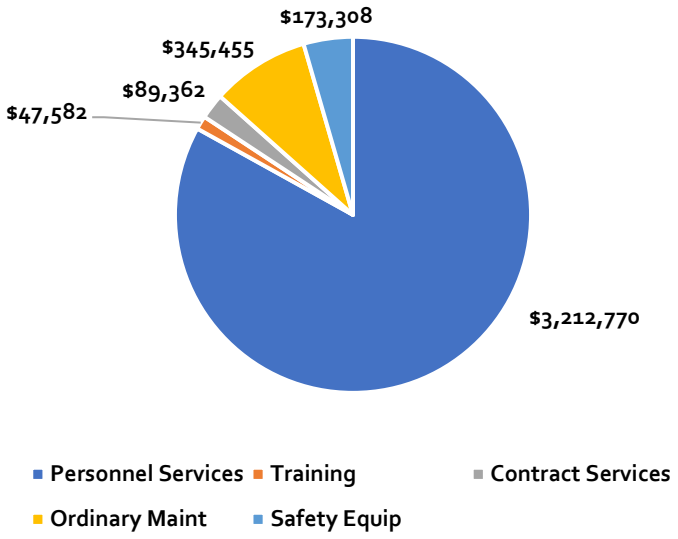


Figure 56. Southington Fire Department Budget by Category FY2015-2016

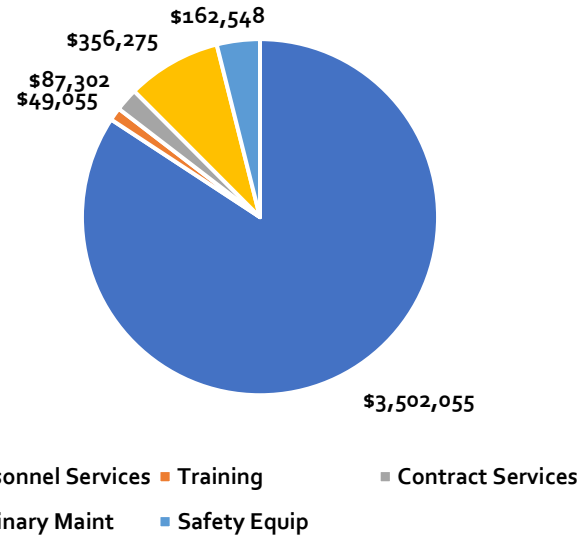


Figure 57. Southington Fire Department Budget by Category FY2016-2017

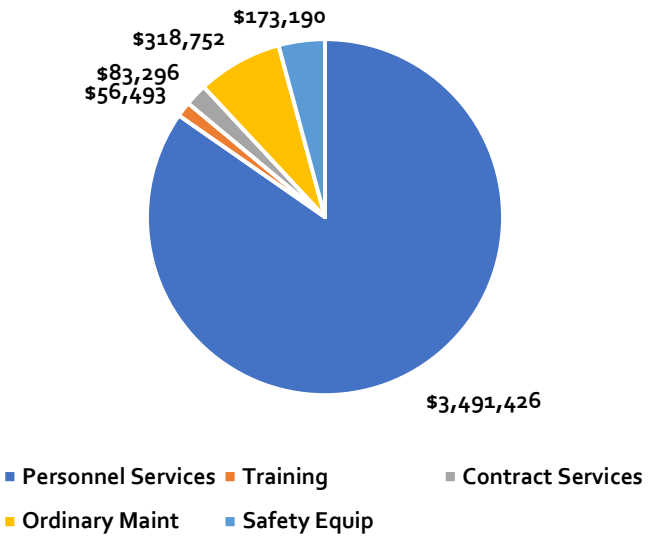


Figure 58. Southington Fire Department Budget by Category FY2017-2018

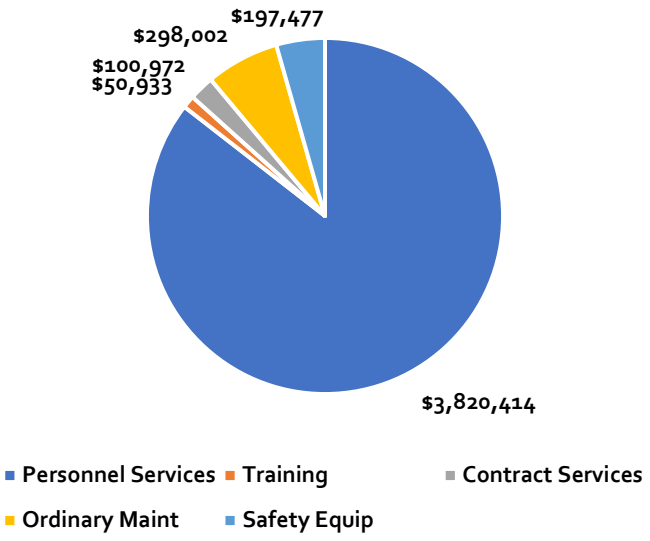


Figure 59. Southington Fire Department Budget by Category FY2018-2019

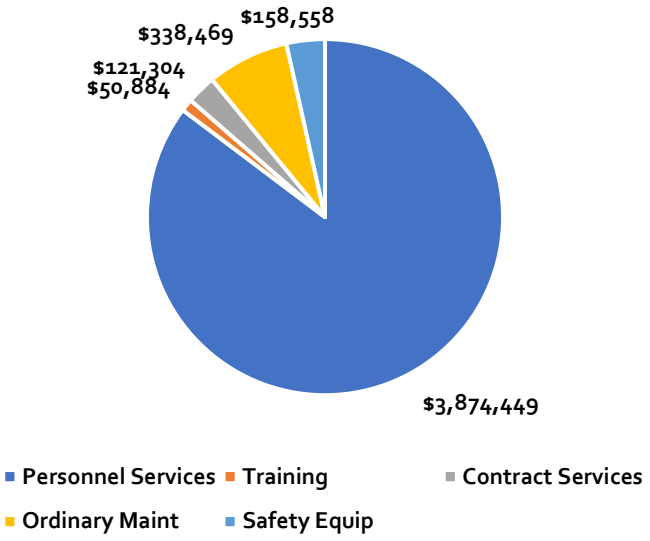


Figure 60. Southington Fire Department Budget by Category FY2019-2020

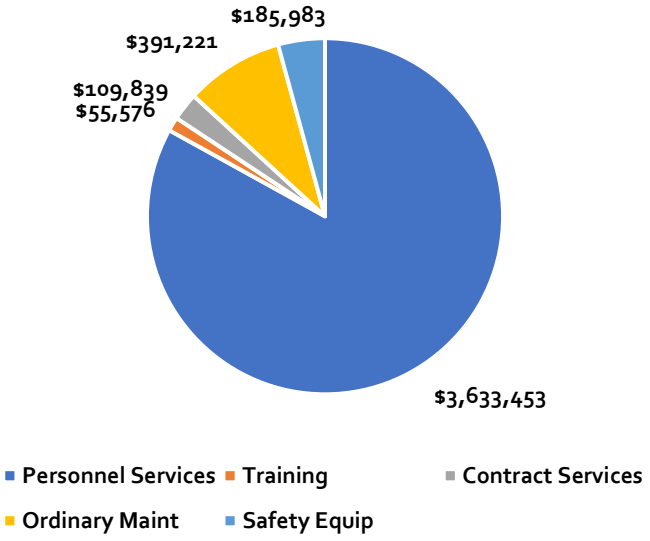
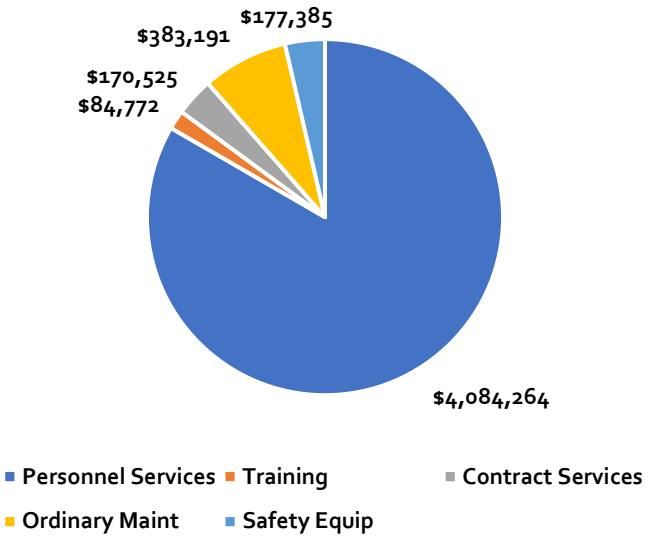


Figure 61. Southington Fire Department Budget by Category FY2020-2021



Capital Expense

The Town of Southington has a comprehensive 5-year Capital Budget plan that they use to make Capital purchases. ESCI has been provided with copies of the plan. The Town of Southington is a highly rated debt issuer and appears to have no issues creating revenue through the issuance of bonds.

Upcoming planned Capital Expenses for the Southington Fire Department fall into two general categories: Buildings and Vehicles/Equipment. The following figure is a summary of each of those areas.

The Southington Fire Department has the following Capital Expenses planned for Buildings:

Figure 62. Southington Fire Department Building Capital Expenses

Year	2021/22	2022/23	2023/24	2024/25
Fire Co. 2 Roof Replacement	$120,000			

Year	2021/22	2022/23	2023/24	2024/25
Parking Lot Repair Fire Station Co.2	$62,500			

Year	2021/22	2022/23	2023/24	2024/25
Parking Lot Repair Fire Station Co.5	$58,500			

Year	2021/22	2022/23	2023/24	2024/25
Fire Co. 5 Roof Replacement			$160,000	

The Southington Fire Department has the following Capital Expenses planned for Vehicles/Equipment:

Figure 63. Southington Fire Department Vehicle / Equipment Capital Expenses

Year	2021/22	2022/23	2023/24	2024/25
Fire Engine Replacement	$650,000	$650,000	$725,000	$725,000
Aerial Truck Replacement	$1,700,000			

Year	2021/22	2022/23	2023/24	2024/25
ATV/UTV Replacement				$50,000

Union Contract

The contract with I.A.F.F. Local 2033 expired on June 30, 2021, and negotiations are in process. Working under an expired contract is not unusual but morale may decline the longer negotiations continue. There are several financial items for Southington to consider when negotiating this and future contracts. All successful negotiations involve compromise, and these items should be addressed in the context of the entire agreement.

The current negotiated work week is either 40 or 42 hours. Under FLSA, public safety personnel can have their time calculated in work periods rather than the standard 40 hour work week. The contractual work week is more generous than the legal standard and will result in higher overtime costs than an alternate work period. It is not uncommon to have this in a public safety union contract but may be something that can be adjusted in future negotiations to reduce overtime costs.

Personnel accrue 90 hours of sick leave at the beginning and middle of each year for a total of 180 hours or approximately 22 days per year. This is allowed to accumulate to 1,440 total hours or approximately 180 days. Southington should examine the ramifications of having such a large bank of sick time available to personnel. Often the rationale is for an employee to have a benefit to deal with a longer, non-work related illness or injury. An alternative is an acceptable disability insurance policy. These large banks are also often used as a retirement payout. A payout clause exists but is capped and grandfathered.

There is also an incentive to not use sick time. An employee gets ten hours of vacation in the following fiscal year for every six months they use no more than one sick day. Awarding this benefit in the following fiscal year usually means compensating the employee at a higher rate of pay than the previous year. Outside of financial concerns, the policy of encouraging personnel to not use sick time should be examined. Personnel that are sick should remain out of work to prevent others from getting sick.

Personnel may waive their health insurance. In addition to not having to pay the premium co-share, they receive an annual incentive of $1,00-3,000 depending on the coverage level (single, couple, family). Having coverage occur from another source is a good financial tool to reduce costs and exposure. The incentive may not be enough to encourage personnel from waiving coverage and Southington should survey the personnel to see if an increase would encourage more waivers.

Post-Employment Compensation and Benefits

Per the contract with I.A.F.F. Local 2033, career personnel are entitled to a retirement pension and other post-employment benefits (OPEB). Understanding the future financial commitment of these obligations is critical to ensure proper funding and avoiding spikes in costs. By making these observations we are not suggesting that these benefits are not deserved or that they should be changed. However, it is important for Southington to understand the financial commitments it has made.

Personnel participate in the State MERS retirement plan which requires employee and employer contributions. The state manages the pension fund and dictates the contribution rates based on liabilities and fund performance. A recent change in the discount rate from 8% to 7% significantly impacted the cost structure and Southington should have a plan to deal with future fluctuations.

Postretirement healthcare is only offered to personnel who pay the full COBRA rates. As of June 30, 2019, the total Southington OPEB liability was $41,150. Municipalities that offer OPEB tend to have much larger liabilities and many struggle to fund the program. OPEB should be avoided if possible and any request to include it should have an actuarial study done to calculate the future liability.

Volunteer Costs

Fire service volunteers are unique in the amount of funding needed to support them. Most volunteers in society need little to no financial resources while firefighters require substantial resources to be trained and equipped to appropriate standards. A trained volunteer firefighter is an investment that only pays off if they are actively responding to calls.

The main financial incentive for volunteers is the stipend program which pays volunteers based on a schedule of activities and milestones. There is also a budgeted amount for retirement plans that is divided amongst qualified volunteers as well as a tax abatement program. The two charts below illustrate the declining return on investment from the volunteer program. The first chart compares the stipend expense and total volunteers with trendlines. The trendline for the stipend expense is flat, but the pandemic and a change to the stipend calculation is contributing to a temporary depression of those numbers. A decline in volunteers of over 40% can be seen over this time period as well. The second chart shows the increasing cost of the stipend per volunteer resulting from the sharp decline in the number of volunteers.

Figure 64. Volunteer Stipend

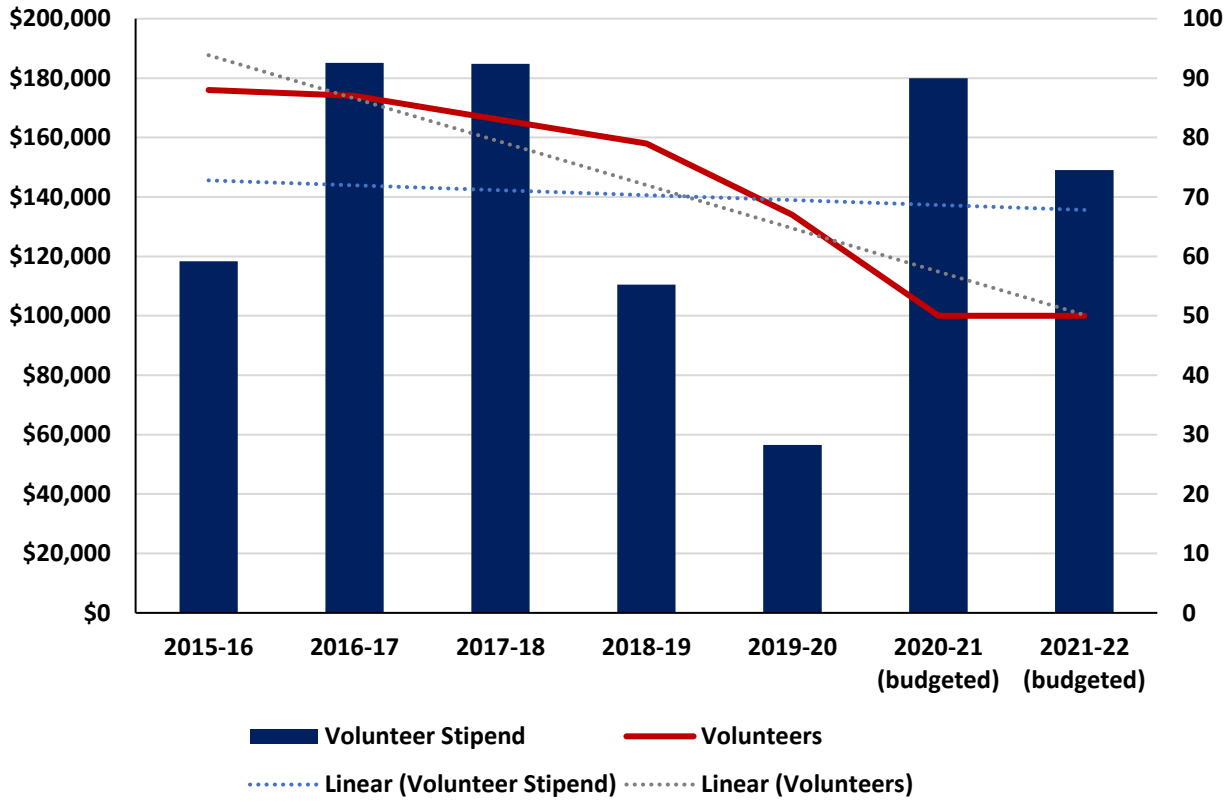
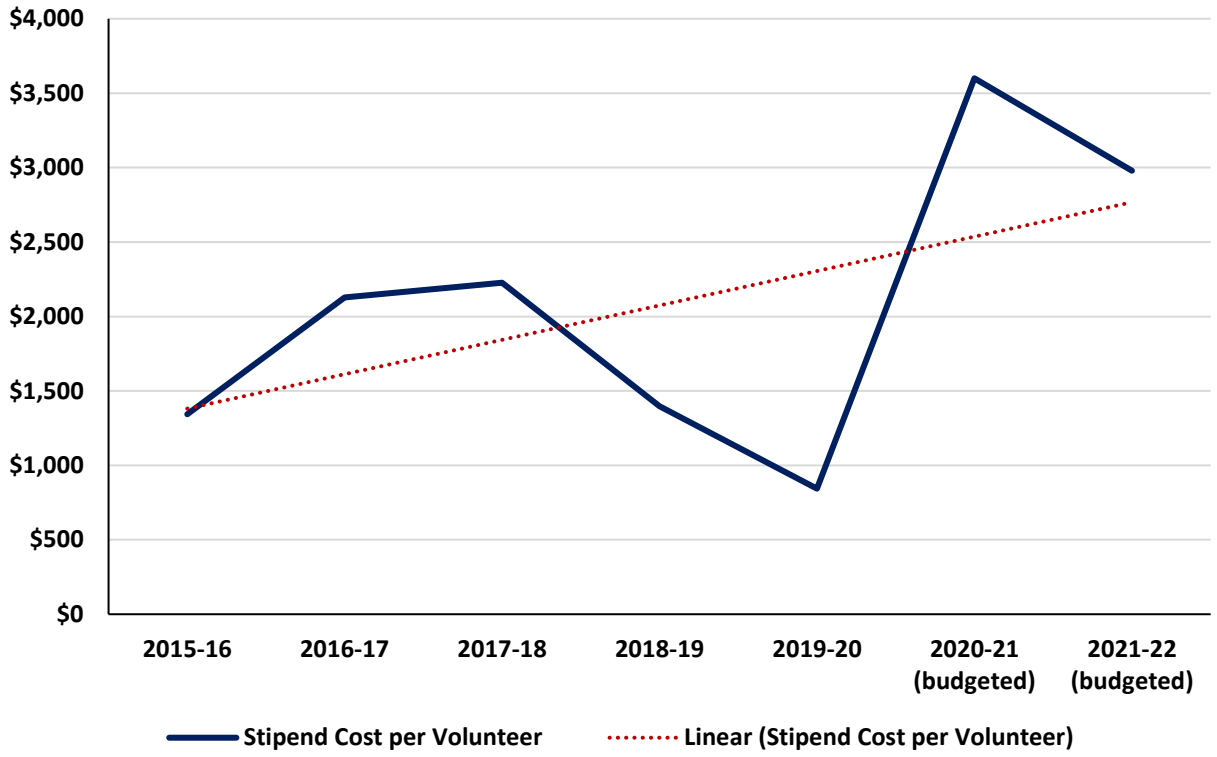


Figure 65. Stipend Cost per Volunteer



An active volunteer will always cost substantially less than an employee, so these incentives may be justified. However, there are several issues that may arise with the current configuration. Tax abatements are only beneficial if you pay property tax. Younger individuals may not own municipally taxable property and therefore receive no benefit. Resources should be aligned with the recruitment/retention goals.

Another issue is the use of a divided pool of funds for retirement. As the number of active volunteers continues to decline, the share of the pool per qualified volunteer will increase resulting in a small number of volunteers getting an increasing benefit. Again, resources should be aligned with recruitment/retention goals and this structure should be reevaluated.

The training and equipping of a volunteer firefighter to appropriate standards takes a large amount of time and funding. Since 2015, approximately $81,900 has been spent on tuition for 69 new volunteers. Today, only 22 of those volunteers remain active, a 32% success rate. In addition to the initial training, volunteers must get customized equipment made that is not easily transferable to other members. With an estimated cost of $5,035 for bunker gear, helmet, boots, radios, medical evaluation, and Firefighter I training, approximately $141,940 of mostly unusable equipment was left behind by the volunteers who left.

The previous paints a bleak picture regarding the return on investment of volunteers. The time spent managing and overseeing the program is not included in this analysis but is likely substantial. This should be considered when making fiscal decisions about this program. However, there is a non-financial component that also must be taken into consideration. Volunteer firefighters have a long and proud history in many communities. The inclusion of citizens volunteering their time can only bring the fire service closer to the community it serves. Decisions on the future of volunteerism should not be made solely on financial data.

Management Components

Effective fire department management is a common challenge for fire service leaders. Today's fire departments must address management complexities that include an effective organizational structure, adequacy of response, maintenance of competencies, a qualified workforce, and financial sustainability for the future. In the following report section, ESCI examined Southington Fire Department's current efforts to manage the organization and identified measures and best practices as the Department moves into the future.

The development of baseline management components in an organization enables it to move forward in an organized and effective manner. In the absence of foundational management elements, the organization will tend to operate in a random and generally ineffective manner.

NFPA 1201: *Standard for Providing Fire and Emergency Services to the Public*, addresses the need to have an adopted master plan, an established organizational structure, established mutual aid systems, and a variety of other managerial attributes in place to best serve the community effectively. Of specific focus are mission, vision, and values statements that can be utilized as the department moves forward.

Mission, Vision, and Organizational Values

A mission statement is an explanation of the organization's reason for existence. The mission statement supports the vision and communicates purpose and direction to personnel, customers, and other stakeholders. The mission statement should answer the questions "What is our organization's purpose?" and "Why does our organization exist?" As illustrated below, Southington Fire Department's Mission Statement answers these questions.

Figure 66. Southington Fire Department's Mission Statement

The mission of the Southington Fire Department is to provide to the residents of Southington and those who pass through it fire and rescue services. To protect life and property through prevention, code enforcement, fire suppression, rescue, and emergency medical services.".

A vision statement establishes the ideal image that the organization wishes to achieve. The vision statement should answer the questions "Where are we headed?" and "If we achieved all strategic goals, what would we look like 10 years from now?" Southington Fire Department does not currently have an

established Vision Statement; however, the creation of a statement will be accomplished during the Strategic Planning phase following the completion of this document. A sample of a Vision Statement for Southington Fire Department is provided below.

Figure 67. Sample Southington Fire Department Vision Statement

To be the premier emergency services provider in our region that is constantly striving for excellence in service delivery through education, innovation, teamwork, and collaboration.

An organizational values statement includes the core principles that guide the organization and its culture. In a values-led organization, the values guide decision-making and establish a standard against which actions can be assessed. The values statement should answer the questions "What values should guide the operations of our organization?" and "What conduct should our personnel uphold?" The Organizational Values Statements should clearly identify the values that guide the operations of the Southington Fire Department and are upheld by the Department's members. As the department has not identified defined Organizational Values, a sample of Organizational Values are provided below.

Figure 68. Sample Southington Fire Department Organizational Values

Our core values are driven by:

Accountability	*Personal, to each other and our community*
Compassion	*We demonstrate kindness and empathy*
Dedication	*We are committed to our organization and community*
Ethics	*We will consistently strive to do the right thing*
Honesty	*Truth and fairness in endeavors large and small*
Integrity	*We adhere to sound moral principals*

ESCI will work with the Southington Fire Department following the completion of this document to establish clear mission and vision statements as well as relevant organizational values during the Strategic Planning process. Just as the operations of a fire and EMS department are dynamic, so are the guiding principles for the organization. These components can change as the department and community change.

Julie Chakraverty recently wrote an article for Forbes.com titled *Company Vision and Values: Do They Still Matter*?[14] In this article, she cited a recent report from the World Economic Forum that found that a "sense of purpose" in work is the second most important criteria for millennials considering a job, after salary. Ms. Chakraverty concluded that given that this generation will make up the majority of the workforce in coming years, it is not difficult to predict that if candidates for employment do not believe or support an organization's mission, they will not accept a job offer. This can lead to recruitment challenges. Ms. Chakraverty's research further suggested that personnel aged between 45 and 54-years-old and 55 to 64-years-old—not uncommon age groups for management—were the least likely age groups to be able to recite their organizations' s mission and vision.

Internal Communications Processes

Internally, Southington Fire Department provides a variety of methods to communicate with staff members. These include regularly scheduled meetings, emails, directives, and a quarterly newsletter for all members.

External Communications Processes

Externally, Southington Fire Department maintains a website to provide information to its customers, but it does not have a formal citizen feedback/input mechanism in place to receive necessary end-user feedback. The fire department has its own section of the town website, uses Facebook (2,000 followers), Twitter (484 followers), and Instagram (900 followers) in an effort to communicate key information to its customers. Historically, successful fire departments have used a community newsletter to communicate with the citizens of their jurisdictions. Now, these same agencies have started to transition to social media platforms as the customer base begins to express an expectation of digital communication and in a more real-time environment.

ESCI noted that there is a link on the Fire Department's webpage titled "JoinSFD.org". When this link is clicked, there are options to select links for more information about becoming a volunteer firefighter, career firefighter, or CERT Member. At the time of this evaluation, the links to career firefighter and CERT Member information returned error messages. ESCI further noted that there were separate links on the website that went directly to the volunteer firefighter, career firefighter, and CERT member information without going through the JoinSFD.org. This could be confusing for members of the public who are interested in joining the fire department.

[14] *https://www.forbes.com/sites/voicesfromeurope/2018/03/28/company-vision-and-values-do-they-still-matter/#7755b77b217f.*

ESCI recommends that Southington Fire Department continue to develop its social media presence to provide information to, and receive information from, its customers. It is also recommended that Southington Fire Department evaluate the use of a survey tool to collect performance feedback of those citizens who have used the services of Southington Fire Department. The gathering of information directly from these individuals will allow Department and Town leadership to key in on specific performance issues that allow for intervention in a timelier manner, as well as highlight those performance issues that customers indicate as being of high value.

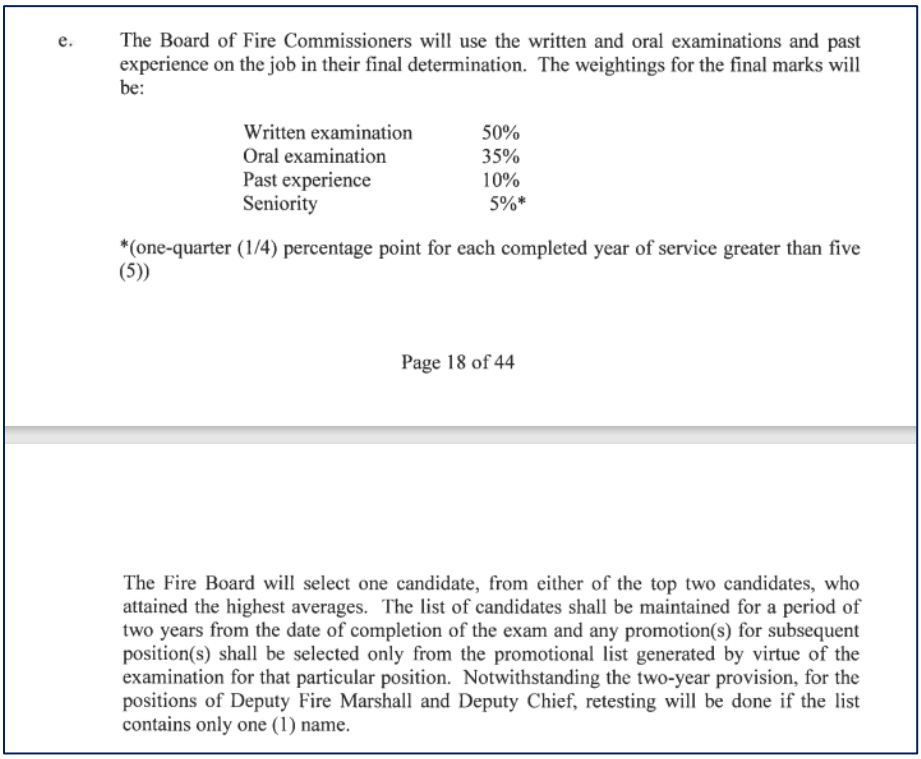
Recruitment, Promotion, and Disciplinary Processes

Full-Time Firefighters

The hiring process for full time firefighters is conducted by the Board of Fire Commissioners and the Fire Chief from a hiring list generated biennially. The hiring list is compiled through a written test and oral board interview conducted by an outside agency. During the application process candidates apply using the FirefighterApp.com and there is a charge of $75 to apply. Candidates for full time firefighter positions must be a U.S. citizen, possess a high school diploma or the equivalent, be a Connecticut certified Emergency Medical Technician, possess a valid Connecticut Driver's License, and possess a valid CPAT card issued within one year at the time of the written test. Active Southington volunteer firefighters and veterans are given preference points based on eligibility. The eligibility list is validated by the terms established by the Board of Fire Commissioners.

Promotion of career firefighters is handled in accordance with Section 6 e of the 2018-2020 2021 Contract between the Town of Southington and IAFF Local 2033.

Figure 69. Promotions[15]



e. The Board of Fire Commissioners will use the written and oral examinations and past experience on the job in their final determination. The weightings for the final marks will be:

Written examination	50%
Oral examination	35%
Past experience	10%
Seniority	5%*

*(one-quarter (1/4) percentage point for each completed year of service greater than five (5))

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The Fire Board will select one candidate, from either of the top two candidates, who attained the highest averages. The list of candidates shall be maintained for a period of two years from the date of completion of the exam and any promotion(s) for subsequent position(s) shall be selected only from the promotional list generated by virtue of the examination for that particular position. Notwithstanding the two-year provision, for the positions of Deputy Fire Marshall and Deputy Chief, retesting will be done if the list contains only one (1) name.

NFPA 1021 is the *Standard for Fire Officer Professional Qualifications*. This standard identifies the minimum job performance requirements (JPRs) for the various ranks of fire officers. ESCI recommends that a joint labor management committee review the current promotional process and evaluate the process in its entirety to ensure that test components correlate to the current job descriptions and JPRs established by the national standard as they relate to the positions within the Southington Fire Department. As the ultimate goal should be to ensure a defensible promotion process in the event of a legal challenge, ESCI also suggests that the Southington Fire Department re-evaluate the merits of including the civilian Board of Fire Commissioners within the promotional process.

It is ESCI's suggestion that the Southington Fire Department may improve the current promotional process by allowing the professional human resources and fire department personnel to conduct the entire process, thereby eliminating the potential political influence that could be introduced by the inclusion of the elected board.

Volunteer Firefighters

The Southington Department has a six-step application process for volunteer firefighter applicants. The process is as follows.

[15] Section 6 e of the 2018-2020 2021 Contract between the Town of Southington and IAFF Local 2033.

Figure 70. Southington Fire Department Volunteer Firefighter Application Process

Southington Fire Department Volunteer Firefighter Application Process
1. Drop off or email completed application* to Fire Headquarters.
2. Once a positive background check is completed, applicants are notified by email and an interview time is scheduled and held with the chief and/or assistant chief and a station is assigned.
3. A copy of the application is sent to the assigned company's officers and a meeting is held with the officers and the applicant.
4. The company officers send a letter of acceptance to the administrative office and a packet is sent to the applicant with directions on scheduling their physical. Within two weeks of receipt of the packet, the applicant must complete a physical.
5. After the administrative office receives notice of the outcome of the physical, a letter is sent to the applicant notifying them of the status as a social member until the next probationary class is held. The fire company officers will be notified by letter of the applicant's status and the need of a mentor to be assigned to the applicant.
6. The social member will be contacted as the start of the probationary class begins where all necessary paperwork will be completed on the first night of class.
7. The probationary period is one year. Within first year new member must be entered into a Firefighter I class pending openings.

* Application is currently under revision.

Volunteer Firefighter Trends

In February 2020, NFPA published its 2018 U.S. Fire Department Profile report.[16] The report, which is based on data collected via a national survey of fire departments, estimated 745,000 volunteer firefighters in the United States in 2018, which was a 3.58% decrease from 2000.

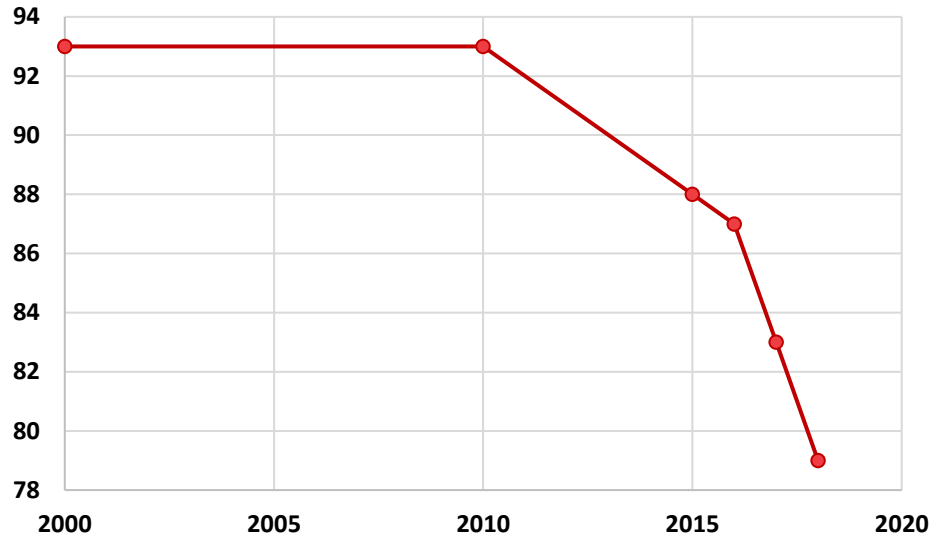
Figure 71. Volunteer Firefighters in the U.S., 2000-2018

Year	# Volunteer Firefighters in the U.S.	Change from Previously Reported Year (%) in the U.S.
2000	777,350	-
2010	768,150	-1.18
2015	814,850	6.07
2016	729,000	-10.54
2017	682,600	-6.36
2018	745,000	9.14
2000 Compared to 2018		**-3.58%**

[16] https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osfdprofile.pdf.

During this same time period, the Southington Fire Department experienced a 15.05% decrease in volunteer firefighters.

Figure 72. Volunteer Firefighters in Southington, 2000–2018



The 15.05% decrease in Southington's volunteer firefighting force represented a net loss of 14 volunteer firefighters between 2000 and 2018.

Figure 73. Volunteer Firefighters in the Southington, 2000–2018

Year	# Volunteer Firefighters	Annual Change (%)
2000	93	—
2010	93	0
2015	88	-5.38
2016	87	-1.14
2017	83	-4.56
2018	79	-4.82
2000 Compared to 2018		**-15.05%**

The International Association of Fire Chiefs, Volunteer Combination Officers Section, released the report *A Call for Action: The Blue Ribbon Report; Preserving and Improving the Future of the Volunteer Fire Service* in 2004. The report suggests that recruiting and retaining volunteer firefighters is not limited to Southington or even the State Connecticut, but is, in fact, a national concern.

The 2007 report *Retention & Recruitment for the Volunteer Emergency Serves: Challenges & Solutions* from the National Volunteer Fire Council and United States Fire Administration[17] identified the following 12 root causes of recruitment and retention challenges.

Figure 74. Root Causes of Recruitment and Retention Challenges

Sources Of Challenge	Contributing Factors
1. Time Demands	▪ The two-income family and working multiple jobs ▪ Increased training time demands ▪ Higher emergency call volume ▪ Additional demands within department (fundraising, administrative)
2. 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
3. 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
4. Changes In The "Nature of The Business"	▪ Abuse of emergency services by the public ▪ Less of an emphasis on social aspects of volunteering
5. 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
6. Changes In Sociological Conditions (In Rural Areas)	▪ Employers less willing to let employees off to run calls ▪ Time demand ▪ "Me" generation
7. Leadership Problems	▪ Poor leadership and lack of coordination ▪ Authoritative management style ▪ Failure to manage change
8. 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

[17] https://www.usfa.fema.gov/downloads/pdf/publications/fa-310.pdf

Sources Of Challenge	Contributing Factors
9. Increasing Use of Combination Departments	▪ Disagreements among chiefs or other department leaders ▪ Friction between volunteer and career members
10. Higher Cost of Housing (In Affluent Communities)	▪ Volunteers cannot afford to live in the community they serve
11. Aging Communities	▪ Greater number of older people today ▪ Lack of economic growth and jobs in some towns
12. Internal Conflict	▪ Disagreements among departmental leaders ▪ Friction between volunteer and career members

ESCI recommends that the Southington Fire Department make it a priority to not only recruit new members, but to also retain its existing volunteer members by researching programs and activities that will support current department's efforts to recruit and retain volunteer firefighters.

Compensation

An agency's ability to attract, hire, and retain personnel has a direct impact on its ability to provide the desired services effectively and efficiently. The Southington Fire Department is no different. Agencies should provide periodic reviews of current compensation structures, market competitiveness, and department compensation philosophies. These internal and external comparisons of equitable positions and workloads ensure the agency can attract and maintain an effective workforce.

Full-Time Firefighters

Salaries for Southington's full-time career firefighters are set forth in Appendix A of the Contract[18]:

Figure 75. Appendix A: Salary Schedule Effective July 1, 2020 Through June 30, 2021

SALARY SCHEDULE EFFECTIVE JULY 1, 2020 THROUGH JUNE 30, 2021

CLASSIFICATION	STEP 1	STEP 2	STEP 3	STEP 4
Firefighters	$65,959	$70,166	$72,872	$76,603
Lieutenants	$79,811			
Captains	$83,141			
Inspector	$58,380			
Inspector/Firefighter	$84,644			
Battalion Chief, Deputy Fire Marshal	$90,049			
Deputy Chief	$101,621			

[18] 2018-2020 2021 Contract between the Town of Southington and IAFF Local 2033.

Volunteer Firefighters

The Southington Fire Department spends approximately $5,035 on each volunteer firefighter before they are certified to respond to emergency calls. Expenses include a medical evaluation, personal protective equipment, and Firefighter I Training. The detailed breakdown of these costs is listed below.

Figure 76. Cost of Onboarding a Firefighter

Description	Cost
Medical Evaluation	$500.00
Bunker Gear	$2,470.00
Helmet	$315.00
Boots	$100.00
Radios	$500.00
Firefighter I	$1,150.00
Total Initial Cost of Onboarding a Volunteer Firefighter:	**$5,035.00**

Once a volunteer firefighter is trained, certified, and approved to respond to emergency calls, the Southington Fire Department offers a variety of stipends to encourage volunteer participation. Volunteer firefighter stipends are shown in the following figure.

Figure 77. Volunteer Firefighter Stipends

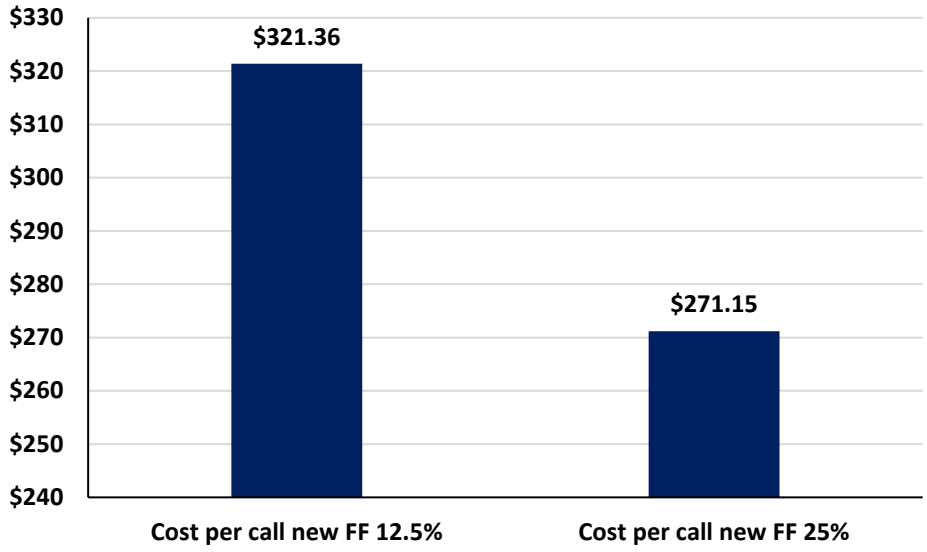
Stipend	Amount
Per-Call Reimbursement	$7.95 for firefighters; $8.69 for fire officers
Instructor for Mandatory Training	$18 for 1-4 hours; $36 for 4-8 hours; excludes meeting night training
Live Burn Training	$50
CPR Training	$30 upon successful completion
EMT Recertification	$50 per classroom day, upon successful completion
Fire Officer I	$500 upon successful completion; one-time payment
Fire Instructor I	$250 upon successful completion; one-time payment
Storm Watch	$60 per shift; maximum of 8 hours per shift
Officers Meeting	$30
Fire Watch	$60 per shift; maximum of 8 hours per shift

Stipend	Amount
401 (A) Plan	• An annual budgeted amount is divided among the qualifying members and deposited into the 401 (A) Plan. • The exact amount is calculated annually based on the budgeted amount and the number of qualifying members approved by the Board of Fire Commissioners. • Eligibility for full share or a half share is based on a member's call volume, their attendance at all mandatory training (all mandatory drills are required and a minimum call volume of 25% for a full share and 12.5-24% for a half share. • Members do not have access to this money until termination or retirement. • The plan's investment schedule is: 2 years – 20%; 3 years – 40%; 5 years – 80%; 6 or more years – 100%.
Tax Abatement	Qualifications for the Tax Abatement mirror the 401(A) Plan. Eligible members receive a Tax Abatement of up to $2,000 for a full share and $1,000 for a half share. Retired members who served 25 years or more receive a Tax Abatement of $2,000 annually.
Fitness Membership	Reimbursement annually after completion at a maximum rate of the current YMCA fee.
Life Insurance 24/7 Coverage	$20,000 life; $20,000 D&D
Life Insurance – On Duty Coverage	$25,000 for D&D; $2,500 for accidental medical expenses, $400 for 104 total weeks disability Workers Compensation also provided through the Town's Worker's Compensation Carrier
Medical Insurance	Available at the COBRA Rate
Heart and Hypertension Benefits	In accordance with State Worker's Compensation Laws
Bonus Points for Entry-Level Career Firefighter Testing	Volunteer firefighters who test for Entry-Level Career Firefighter Positions are eligible for up to 5 points to have added to their score to be calculated at a rate of 1 point per year of eligible completion.

While the annual expense of an individual volunteer is less than the salary of a full-time employee, the costs of recruiting, retaining, or replacing multiple of volunteers annually possesses a cost that should be identified and evaluated. Recruiting fewer high performing volunteers who can be retained for several years is more cost effective than continually training, outfitting, and losing volunteers in high numbers in an attempt to maintain roster numbers seen in the past.

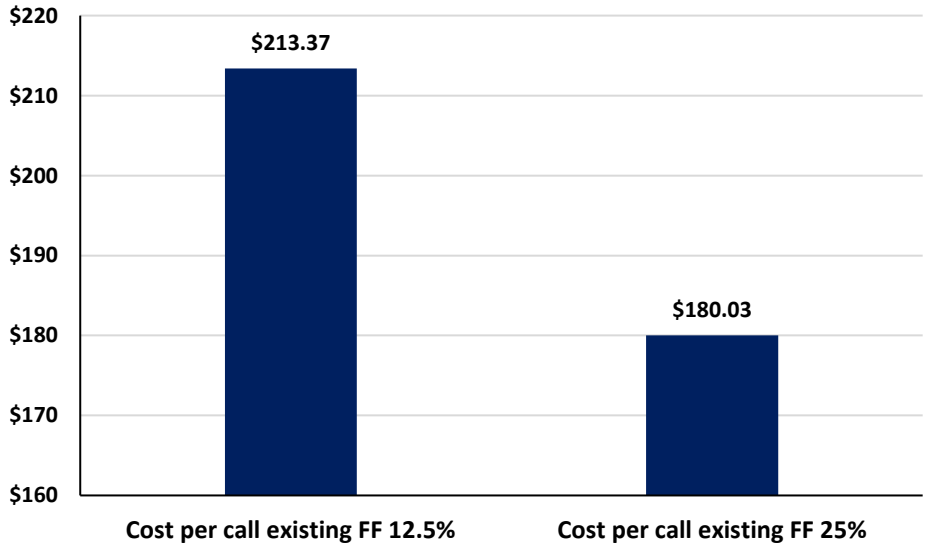
Based on the 2019 costs and numbers of calls, a new volunteer firefighter who responded to between 12.5 and 24% of the department's calls for service cost the Southington Fire Department $321.36 per call. The cost is reduced to $271.15 per call if this same new firefighter responded to 25% or more of the department's calls.

Figure 78. New Volunteer Firefighter Cost Vs. Participation; 2019



The value of retaining volunteer firefighters is quantified when the cost per call of a new volunteer firefighter is compared to the cost per call of an existing volunteer firefighter. The cost of an existing firefighter in both the 12.5-24% and the 25% or more response category is 18.5% lower than the cost per call for a new firefighter in this same participation range. The existing firefighters also bring the value of experience.

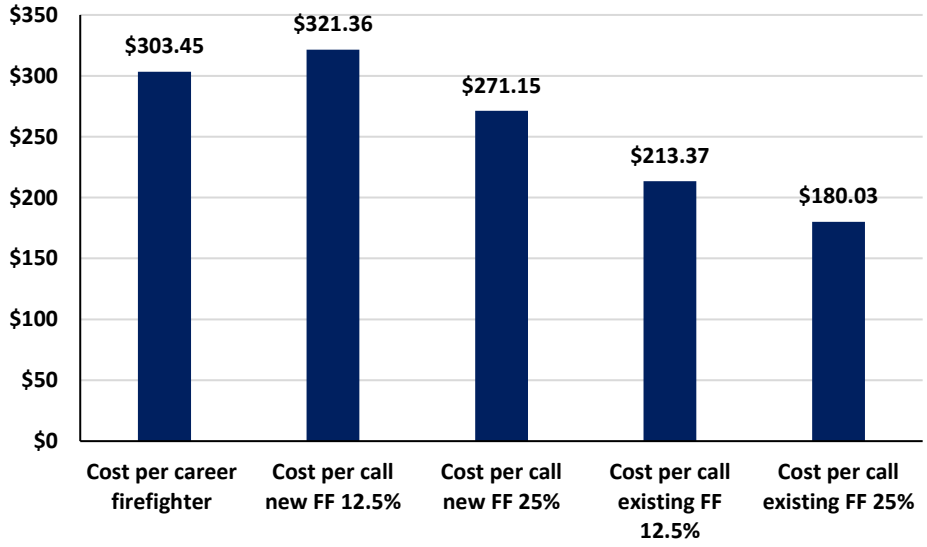
Figure 79. Existing Volunteer Firefighter Cost Vs. Participation; 2019



Considering that the cost per call of an existing volunteer firefighter who responded to 25% or more of the Southington Fire Department's calls in 2019 is 18.5% less than the cost of a new volunteer firefighter who responded to between 12.5 and 24% of Southington's calls for service in 2019, the Southington Fire Department should make it a priority to retain their active existing volunteer firefighters.

When evaluating the cost of a volunteer firefighter compared to a career firefighter, ESCI used the total cost for an entry level firefighter based on the 2019 salary and a 38% multiplier to the total cost accounted for employee benefits. ESCI notes that the cost of a career firefighter per call is actually less than the cost of a new volunteer firefighter who responded to between 12.5 and 24% of the calls for service in 2019. A new volunteer firefighter who responded to 25% or more of the calls for service in 2019 does provide a savings for the town compared to the salary of a career firefighter.

Figure 80. Cost Per Call: Career and Volunteer Firefighters; 2019



ESCI suggests that the Town of Southington establish participation requirements for volunteer firefighters to ensure that the town is not paying a higher cost per call for volunteer firefighters than it does for career firefighters.

Counseling Services

Our nation's firefighters face emotional needs that are quite different and unique to the occupation. The percentage of firefighters struggling with career-related stress is extremely high, with suicide rates climbing each year. These issues manifest themselves through higher divorce rates and addictions such as alcohol, drugs, or gambling. Frequently seen in recent studies and another major concern is Post Traumatic Stress Disorder (PTSD). As these symptoms occur, personnel need a support system in place that is readily accessible from someone who is qualified and truly understands his or her circumstances.

The Southington Fire Department offers mental health services and peer support counseling to all its firefighters. ESCI recommends that the Southington Fire Department conduct periodic reviews of its program to ensure that firefighters have the resources they need when they need them. A collaborative review by labor and management of the current programs and other available options would position the Southington Fire Department to ensure that the offered programs best serve the needs of its firefighters.

Health and Safety Programs

In recent years, the fire service has become increasingly concerned with the issue of firefighter cancer, and cancer-prevention practices. Firefighters in Southington are provided with two hoods that are recommended to be washed weekly; however, this is not enforced. While there are two gear washers and dryers, not all firefighters have two sets of gear, so they are faced with the decision to borrow gear or wait to wash gear until such time that they are not responding to calls. ESCI recommends that the Southington Fire Department develop a plan to issue all firefighters two sets of gear. An additional preventative measure that could be taken by the Southington Fire Department is to limit/reduce firefighter exposure to toxic products of combustion which occur *after the fire* (aka, off-gassing). The Southington Fire Department should take steps to store turnout gear in a well-ventilated room to prevent additional firefighter exposure to off gassing of chemicals absorbed into turnout gear during a fire.

According to the National Fire Protection Association (NFPA), 43% of firefighter deaths are caused by overexertion and stress. And in 2020, the Firefighter Cancer Support Network revealed that 61% of career firefighter line-of-duty deaths occurred as a result of cancer from 2002 to 2017.

The Southington Fire Department provides medical exams for new firefighters and biennial thereafter. ESCI recommends that the Southington Fire Department periodically review its medical evaluation program for compliance with NFPA 1582: *Standard on Comprehensive Occupational Medical Program for Fire Departments*. Additionally, the Southington Fire Department should consider emphasizing health and wellness programs for its first responders because of an increased risk for cardiovascular disease and certain types of cancer in the fire service. Prevention programs and health monitoring provide cost savings to fire organizations, reducing workers' compensation costs, sick leave/overtime hiring costs, and improves the overall mental and physical health and wellness of first responders.

ESCI noted that Article 29 of the 2018-2020 Contract between the Town of Southington and IAFF Local 2033 includes the following height and weight restrictions for career firefighters. These same requirements are listed at the top of the application to become a volunteer firefighter.

Figure 81. Firefighter Height and Weight Restrictions

ARTICLE 29
HEIGHT AND WEIGHT RESTRICTIONS

SECTION 1. All employees hired on or after November 16, 1989 must, as a condition of employment, not exceed the following maximum body weight for their height:

MALES:

5'4"	5'5"	5'6"	5'7"	5'8"	5'9"	5'10"	5'11"	6'0"	6'1"	6'2"
170	175	180	185	190	195	200	205	210	215	220

FEMALES:

5'3"	5'4"	5'5"	5'6"	5'7"	5'8"	5'9"	5'10"	5'11"	6'10"	6'11"
140	145	150	155	160	165	170	175	180	185	190

Maximum body weights for heights not listed above shall be extrapolated from the schedule at five (5) pounds per inch of height.

While height and weight requirements were once considered to be the primary measure of firefighter fitness, NFPA 1583, *Standard on Health-Related Fitness Programs for Fire Department Members* recommends a periodic assessment under the supervision of the fire department health and fitness coordinator.

6.2 Fitness Assessment

6.2.1 All members shall be cleared annually for participation in the fitness assessment by the physician as directed by NFPA 1582.

6.2.2 If a member has an acute medical problem or a newly acquired chronic medical condition, the fitness assessment shall be postponed until that person has recovered from this condition and is cleared as is required by 6.2.1.*

6.3 Pre-Assessment Questionnaire. *The health and fitness coordinator shall administer to all members a pre-assessment questionnaire that seeks to identify contraindications for participation in the fitness assessment and department exercise program.*

6.4* Fitness Assessment Components. *The annual fitness assessments shall consist of the following components:*

(1) Aerobic capacity
(2) Body composition
(3) Muscular strength
(4) Muscular endurance
(5) Flexibility

In addition to providing fitness evaluations, the Southington Fire Department should establish a Fire Department Safety committee in alignment with Chapter 4 of NFPA 1500: *Standard on Fire Department Occupational Safety, Health, and Wellness Program* The establishment and empowerment of a safety committee can be one of the best tools to increase the safety of firefighters.

The Fire Department Safety Committee should meet monthly and include in its mission the raising of awareness and modifying of member behaviors that will result in a safe work environment. Additionally, the committee should review all accidents, injuries, near-miss incidents, and workplace safety suggestions. The committee should analyze the information before them and report their findings to the Fire Chief. In contrast to being reactionary through the development of additional rules, it is recommended that the committee should work to implement member safety education programs and encourage members' safety self-awareness. The committee should maintain regular and open meeting times and locations, and minutes of the meetings should be recorded and posted for all firefighters to review. ESCI underscores the importance of maintaining a functioning Safety Committee.

Information Technology

Information Technology (IT) is a challenge within the Southington Fire Department. The fire department is currently supported by an IT position that is shared with the Police Department. Because of the demands placed on this position by the Police Department, the fire department often does not have the level of support that it needs in a timely manner. In recent years, the fire department has become increasingly more reliant on computers, laptops, and tablets for both routine and emergency operations and would benefit from a full-time dedicated IT position.

Records Management System

Southington Fire Department uses FireHouse® software for reporting and recordkeeping processes and procedures generally considered consistent with the practices observed in most fire departments across the United States. These records include patient care reports, emergency incident reports, as well as equipment service and maintenance records. Service records include those conducted internally as well as those completed by external service providers for critical equipment, including annual ladder testing and self-contained breathing apparatus (SCBA) units.

The current FireHouse® software company is no longer in business and as such, cannot provide support for issues. Additionally, due to the age of the program, it is difficult to extract information from the database. Southington is currently pursuing the transition to ESO, a newer record management system, that will allow for the consistent and accurate monitoring of performance, trends, and documentation for the department.

Document Control and Security

The Department has established processes and procedures for the security of both digital and hard copy records. All digital records are backed-up locally as well as off-site.

Southington Fire Department has implemented computers at all fire stations to use in recording incidents, accessing emails and Department operating procedures, and recording equipment inventories. At the time of this report, the Department did not have a formal Information Technology management strategy in place. While the department is serviced by the Town's IT, the fire department should have a strategy in place to upgrade hardware and software, select the most appropriate programs based on department need, and an understanding of the process by all personnel for how to suggest new ideas or resolve existing issues.

Technology is an evolving field and agencies failing to have plans in place to address ongoing changes in operating systems can be caught in a position of being required to expend significant and finite budget revenues to update computers no longer supported by manufacturers. As part of its records management efforts, the Department utilizes FireHouse® and Windows® based computers to accomplish its organizational responsibilities. The Department uses the Town's Information Technology services to maintain its computer inventory and securely store digital records off-site. ESCI recommends that Southington Fire Department work with its Information Technology services to ensure an effective Information Technology management strategy is in place to address current and future department related software are operated and maintained in accordance with standards within NFPA 950: *Standard for Data Development and Exchange for the Fire Service* and NFPA 951: *Guide to Building and Utilizing Digital Information*.

Facility Security

Fire departments have typically been open environments where residents and visitors from the community have been allowed access to any part of a fire station with very few limitations. Unfortunately, the current social environment requires emergency services providers to implement specific security measures limiting and controlling access to fire department facilities. This is driven by the need to protect firefighters, expensive equipment, and sensitive data from inadvertently being accessed by individuals desiring to harm the community.

ESCI recommends that the Department expand/improve upon existing video monitoring and recording and electronic key fob access already in progress for exterior entry points to ensure an increased level of security and awareness as to who is or attempting to enter Southington Fire Department facilities.

Organizational Planning Processes

Critical Priorities

As a result of the data-driven decision-making processes that are in effect throughout the Southington Fire Department, the organization has produced and instituted a series of plans for the operations of the organization, consistently moving the department forward and ensuring that it is positioned to respond to the dynamic service demands of the community. Understanding and identifying the critical issues facing any organization is the first step in moving toward resolution. The Southington Fire Chief has identified the most critical issues facing the organization as:

Figure 82. The Southington Fire Department's Critical Priorities

Southington Fire Department's Critical Priorities
1. Staffing on emergency scenes
2. Response times
3. Staffing in Fire Marshal's Office
4. Lack of a road map for the department
5. Lack of training Facility

Now more than any other time in the history of the United States, fire and emergency services agencies operate in a rapidly changing environment. Along with improved tools and technologies used to provide service, there is the increased regulation of activities, new risks to protect, and other challenges that can quickly catch the unwary off guard. Only through continuous internal and external environmental awareness and periodic course corrections can an organization stay on the leading edge.

For Southington to do the best job possible with available resources, the focus must be on improving services while identifying programs or activities that may no longer serve its changing needs. Through planning, a fire department can establish a vision, create a framework within which decisions are made, and chart its course to the future. The quality and accuracy of the planning function determine the success of the organization.

To be truly effective, an emergency services agency must consider planning on four distinct levels:

Figure 83. Levels of Planning

Planning Level	Description
1. Tactical Planning	The development of strategies for potential emergency incidents.
2. Operational Planning	The organization of day-to-day activities, as primarily outlined by a department's standard operating guidelines and procedures. This includes the integration of the agency into other local, regional, or national response network.
3. Master Planning	Preparation for the long-term effectiveness of the agency as the operating environment changes over time.
4. Strategic Planning	The process of *identifying* an organization's mission, vision, and values *and prioritizing goals and objectives* for things that need to be accomplished in the near future.

Without effective planning, it is impossible for any organization to know when it is reaching milestones or providing exceptional services to its constituency. The National Fire Protection Association has established NFPA 1600: *Standard on Disaster/Emergency Management and Business Continuity/Continuity of Operations Programs* and NFPA 1201: *Standard for Providing Fire and Emergency Services to the Public,* as standards to assist fire and EMS departments in establishing and maintaining planning documents and conducting planning activities.

Tactical Planning in the Organization

Beyond the fire station, the firefighter's emergency operational work environment is, more often than not, an unknown environment. Normally, a firefighter's first visit to a building is when the building is involved in a fire or another emergency. In the case of a fire, the internal environment is at its worst. Contrary to movie portrayals, visibility during a fire is at or near zero due to smoke. A lack of familiarity with a building can easily lead a firefighter to become disoriented or injured by an unfamiliar internal layout, or by equipment or other hazards that might be encountered.

It is critically important that firefighters and command staff have comprehensive, accurate information readily at hand to identify hazards, direct tactical operations, and use built-in fire-resistive features. This can only be accomplished by building familiarization tours, developing pre-fire plans, and conducting tactical exercises, either on-site or by tabletop simulation. At the time of this report, Southington Fire Department has limited current or completed pre-fire plans for commercial buildings or residential complexes with more than four families per unit. The Southington Fire Department should have both career and volunteer members conduct/participate in pre-incident planning.

ESCI recommends that Southington Fire Department purchase a software program that is specifically designed to make the information that is collected during pre-plans readily accessible to firefighters in an emergency. Many such programs are on the market including Streetwise, Blazmark, and Raxar among others. The current ESO software being researched may have the ability to fulfill this recommendation.

Operational Planning in the Organization

Operational planning includes the establishment of minimum staffing policies, standardized response plans or protocols, regional incident command planning, mutual and automatic aid planning (locally and regionally), resource identification and planning, and disaster planning.

Within any agency, operational plans should be in place that ensure adequate volumes of the appropriate types of resources are deployed to an emergency. Doing so involves:

- Identification of potential risk types
- Determination of resources needed to mitigate an incident affecting the particular risk type
- A methodology of ensuring that adequate resources are dispatched to an incident via the Southington Public Safety Communications Center protocols.

The development and implementation of rules, regulations, and policies have enabled Southington to move forward in an organized and effective manner. In the absence of these documents, an organization will tend to operate in a random and generally ineffective manner. Currently, Southington Fire Department possesses a series of documented rules, regulations, and policies to be utilized by members at all organization levels.

The Southington Fire Department's policies and procedures are updated annually. ESCI commends the Southington Fire Department's diligence in conducting this annual review and suggests that the department could benefit from having review of all policies and procedures conducted by an independent third-party to assure compliance with industry standards and best practices.

Master Planning in the Organization

Master or long-range planning is preparation for Southington Fire Department's future service delivery effectiveness based on projections of the future service delivery environment. This long-range master plan focuses on the big picture perspective, distant future needs of Southington, and is particularly important in an agency experiencing growth. The need for stronger planning processes is communicated regularly by members of the fire service and the community members it serves. Fire service organizations that engage in a long-range master planning process will be able to utilize this valuable information to answer the following three questions:

- Where is the organization today?
- Where will the organization need to be in the future?
- How will this organization get there?

Southington Fire Department has contracted ESCI to develop a Master Plan. This Master Plan will give Southington a clear idea of where it is today based on an evaluation of current conditions. The Master Plan will also project the future needs of Southington Fire Department, along with providing the strategies to meet them. A master plan is designed to provide a view of the organization in a 15-year time frame.

Strategic Planning in the Organization

Strategic planning supports the organization's mission and sets and prioritizes short-term internal goals. A strategic plan typically involves a three-to-five-year planning window. Community involvement in the process is critical as the strategic plan should be customer-oriented while accomplishing the following:

- Development of a mission statement giving careful attention to the services currently provided and which logically can be provided in the future.
- Development of a vision statement of the agency moving forward.
- Establish the values of the members of the agency.
- Identification of the strengths, weaknesses, opportunities, and challenges of the agency.
- Determination of the community's service priorities.
- Understanding the community's expectations of the agency.
- Establishment of realistic goals and objectives for the future.
- Identifications of implementation tasks for each objective.
- Definition of service outcomes in the form of measurable performance objectives and targets.

Southington Fire Department does not have a current strategic plan in place. Once the Southington Fire Department Master Plan is formulated, the list of recommendations, guidance for changes, and new initiatives will provide direction for developing a new strategic plan, as it is the most effective way to prioritize and plan for implementation of the master plan's findings. This plan will be facilitated by ESCI following the conclusion of this document. The strategic planning process ideally results in a three-to-five-year work plan, intended to guide the work effort of the entire organization toward a common set of goals and objectives. The process should include representation from every major interest group in the organization. Each person in the department should feel that their interests are represented by someone in attendance on the planning team.

Capital Assets and Capital Improvement Programs

Capital assets include all facilities, all vehicles, and the key support equipment used on the apparatus dedicated to achieving the mission of the Southington Fire Department. Facilities and apparatus are the single most expensive infrastructure elements in a fire department. Funding of these elements is difficult to absorb in a single year; therefore, planning must be developed to address replacement, refurbishment, and maintenance in a multi-year funding strategy, or a funding source must be identified. Advanced planning of actual expenses will allow an agency time to acquire the funds necessary to implement a plan. Regardless of an agency's financial condition, if appropriate equipment is not available for use by responders, it is impossible for a fire department to deliver effective services.

The Southington Fire Department maintains a balance of three basic resources that are needed to carry out its emergency mission: people, equipment, and facilities. The Southington Fire Department works collectively with other town agencies to develop and implement a capital improvement plan for facilities and apparatus. The Headquarters Station was renovated in 2005, and six apparatus purchased since 2012.

Providing strategic plans for future leaders is part of successful succession planning, and these living documents convey the importance of the department's mission, core values, and goals. The Southington Fire Department is developing a facilities' capital improvement plan and an apparatus and equipment replacement plan to communicate the department's vision in 2020 based on population and service demand growth. An annual review of these plans will be required.

New technology and innovation in the fire service continue to improve the effectiveness and efficiency of the fire service. These plans, reviewed annually, will provide a safer environment for firefighters and will continue to support the needs of the community.

Facilities

Four fire stations, one with the Administrative Headquarters, make up the fixed facility capabilities of the Southington Fire Department. Appropriately designed facilities provide safe living spaces for personnel and provide an appropriate arrangement for deployment to provide timely service. ESCI visited each of the Southington Fire Department facilities in March 2021. The tour included a building review with a focus on construction, building conditions and amenities, and visible problems or concerns, with input from Southington Fire Department personnel on duty in the fire station. In general, the Southington Fire Department stations were in poor to fair condition and categorized according to the following criteria:

Figure 84. Fire Station Condition Classifications

Excellent	Like new condition. No visible structural defects. The facility is clean and well maintained. Interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices. No significant defect history. Building design and construction match the building's purposes. Age is typically less than 10 years.
Good	The exterior has a good appearance with minor or no defects. Clean lines, good workflow design, and only minor wear of the building interior. Roof and apparatus apron are in good working order, absent any significant full-thickness cracks or crumbling of apron surface or visible roof patches or leaks. Building design and construction match the building's purposes. Age is typically less than 20 years.
Fair	The building appears to be structurally sound with weathered appearance and minor to moderate non-structural defects. The interior condition shows normal wear and tear but flows effectively to the apparatus bay or offices. Mechanical systems are in working order. Building design and construction may not match the building's purposes well. Showing increasing age-related maintenance, but with no critical defects. Age is typically 30 years or more.
Poor	The building appears to be cosmetically weathered and worn with potentially structural defects, although not imminently dangerous or unsafe. Large, multiple full-thickness cracks and crumbling of concrete on apron may exist. The roof has evidence of leaking and/or multiple repairs. The interior is poorly maintained or showing signs of advanced deterioration with moderate to significant non-structural defects. Problematic age-related maintenance and/or major defects are evident. May not be well suited to its intended purpose. Age is typically greater than 40 years.

Figure 85. Southington Fire Department Fire Stations and Facilities

Fire Station	Picture	Address	Date of Construction	Condition
Fire Headquarters Station 1		310 North Main Street Southington, CT 06489	1979 (renovated in 2005)	Fair
Station 2		128 West Main Street Southington, CT 06479	1964	Poor
Station 3		35 Clark Street Southington, CT 06479	1992	Fair
Station 5		50 River Street Southington, CT 06489	1974	Fair

Design and Code Compliance

Stations 1 and 5 were modified to house on-duty firefighters, with individual sleeping quarters and bathroom facilities; however, stations 2 and 3 were not designed for 24-hour occupation. The design of the stations did not originally include areas for turnout gear storage with appropriate ventilation requirements; however, renovations to stations 1 and 5 provide for minimal storage for personal protective equipment (PPE) while stations 2 and 3 do not have adequate PPE storage. All stations have positive capture exhaust removal systems.

Southington Fire Department has automatic fire sprinkler systems at Fire Headquarters and Station 3. Station 5 will have an automatic fire sprinkler system installed in August 2021 and there are currently no plans to install a system at Station 2. Although some stations possess kitchens equipped with a commercial quality hood system above kitchen cooking surfaces, these features are not present throughout.

Safety and Security

The number one concern of any fire and EMS organization is the health and safety of its personnel. Due to the age and independent design of each station for volunteer use, common safety features such as decontamination rooms, eye wash stations, ice machines, and gear storage protected from exhaust fumes are not present. All stations are secured with key or key fob entry capabilities.

Future Viability and Replacement

Two of the four Southington fire stations have outlived their useful life and that some of these stations are no longer located in the optimal location to meet the current service demands in the town. Consideration should be given to relocating some of these stations rather than renovating them. GIS Models for Fire Station Optimization are included within the *Long-Range Deployment Options* Section of this plan.

Apparatus

The Southington Fire Department maintains a sizeable fleet of nine fire suppression vehicles. The following figure provides an inventory of fire apparatus, configuration, and condition, ordered by apparatus number.

Figure 86. Southington Fire Department Apparatus

Radio Call Sign	Apparatus Type	Year	Condition	Status (Frontline, Reserve)
Engine 12	Engine	2017	Good	Frontline
Engine 21	Engine	2015	Good	Frontline
Engine 31	Engine	2012	Good	Frontline
Engine 61	Engine	1999	Fair	Reserve
Squad 1	Engine	2020	New	Frontline
Squad 5	Engine	2019	New	Frontline
Ladder 1	Ladder Truck	2007	Good	Frontline
Ladder 3	Ladder Truck	1993	Fair	Reserve
Tanker 2	Tanker	2020	New	Frontline
Brush 2	Brush Truck	1990	Fair	Frontline

ESCI observed the Southington Fire Department's vehicles to be well maintained and generally in fair to good condition. ESCI evaluated the age of the Southington Fire Department's fleet of apparatus, finding that the units range from a high of 30 years of age, which includes a frontline apparatus and brush vehicle, to a low of just one year. Three of the department's eleven front-line apparatus are five or fewer years old. By averaging the total apparatus list, which includes reserve units, ambulances, and staff vehicles, ESCI calculates an overall combined average of 15.8 years.

ESCI noted that when comparing the number of firefighters on duty to the number of apparatus, the Town of Southington is heavy on apparatus. The cost of maintaining apparatus does place a significant burden on a fire department's operating budget in addition to the burden that replacement costs incur on the capital budget. ESCI recommends a town-wide evaluation of all the apparatus in the fleet with a goal of eliminating apparatus that does not see regular use and does not serve a specific and necessary need.

Apparatus Replacement

Fire apparatus are typically unique pieces of equipment, often customized to operate efficiently in a narrowly defined mission. A pumper may be engineered such that the compartments fit specific equipment and tools, with virtually every space on the truck designated in advance for functionality. This same vehicle, with its specialized design, cannot be expected to function in a completely different capacity, such as a hazardous materials unit or a rescue squad. For this reason, fire apparatus are very expensive and offer little flexibility in reuse and reassignment. Thus, communities across the country have sought to achieve the longest life span possible for these vehicles.

Unfortunately, no mechanical piece of equipment can be expected to last forever. As vehicles age, repairs tend to become more frequent, parts more difficult to obtain, and downtime for repair increases. Given the emergency mission that is so critical to the community, this factor of downtime is one of the most frequently identified reasons for apparatus replacement.

Because of the large expense of a fire apparatus, most communities find the need to plan for the cost of replacement. To properly do so, agencies often turn to the long-accepted practice of establishing a life cycle for the apparatus that results in a well-anticipated replacement date. Forward-thinking organizations then set aside incremental funds during the life of the vehicle so that replacement dollars are ready when needed.

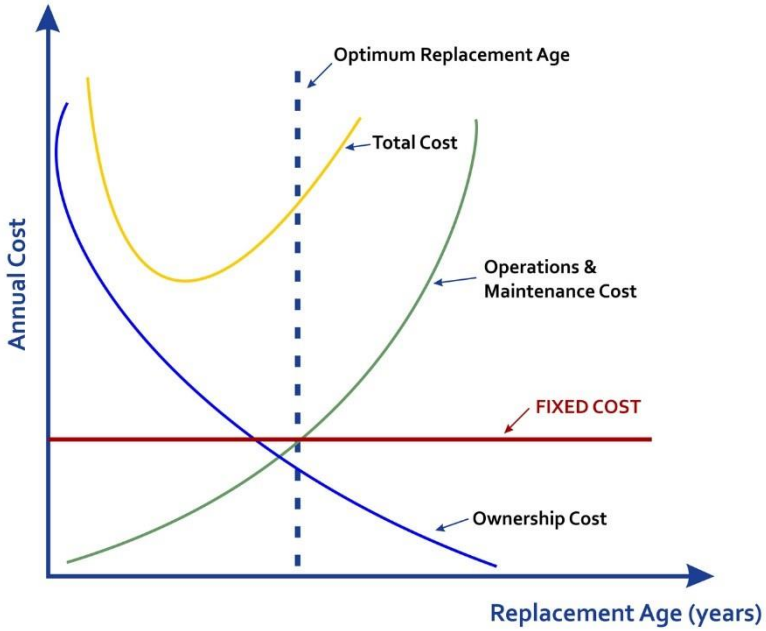
Commendably, the Southington Fire Department has recently replaced three of its fire apparatus. The department established a scheduled replacement plan in 2012 which is regularly updated.

NFPA 1901: *Standard for Automotive Fire Apparatus* is a nationally recognized industry standard for the design, maintenance, and operation of fire suppression apparatus. The issue of replacement cycles for various types of apparatus has been discussed by the committee that develops this standard for many years. In developing its latest edition, the committee calls for a life cycle of 12 years in front-line service and five years in reserve status for engines, and 15 years in front-line service and five years in reserve status for ladder trucks.

This does not mean that a fire engine cannot be effective as a front-line pumper beyond 12 years. A visit to many departments across the United States will prove that time and time again. Small, volunteer fire departments with only a hundred or so calls per year often get up to 25 years from a pumper, though the technology is admittedly not up to date. Likewise, busy, downtown fire stations in urban communities move their engines out of front-line status in as little as eight years.

A conceptual model that may be used when a replacement cycle is considered is the Economic Theory of Vehicle Replacement. The theory states that as a vehicle ages, the cost of capital diminishes and its operating cost increases. The combination of these two costs produces a total cost curve. The model suggests the optimal time to replace any piece of apparatus is when the operating cost begins to exceed the capital costs. This optimal time may not be a fixed point but rather a range over time. The flat spot at the bottom of the Total Cost curve in the following figure represents the ideal time to replace an apparatus.

Figure 87. Economic Theory of Vehicle Replacement



Shortening the replacement cycle to within this window allows for an apparatus to be replaced at optimal savings to the department. If the department does not routinely replace equipment in a timely manner, the overall reduction in replacement spending can result in a quick increase in maintenance and repair expenditures. Officials who assume that deferring replacement purchases is a good tactic for balancing the budget must understand that two events may occur:

1. Costs are transferred from the capital budget to the operating budget.

2. Such deferral may increase overall fleet costs.

Regardless of its net effect on current apparatus costs, the deferral of replacement purchases unquestionably increases future replacement spending needs.

Support Equipment Replacement

Support Equipment includes self-contained breathing apparatus (SCBA), radios, cardiac monitors, and other assorted high-value equipment. ESCI observed support equipment that was in service at all four fire stations. The equipment was generally well-maintained and in good condition.

The Southington Fire Department should ensure that their Equipment Replacement Plans are updated annually by the Fleet and Equipment Committee to provide an inventory of equipment that is in good general repair and scheduled for replacement, including SCBA, radios, and other high-value equipment.

Staffing

The size and structure of an organization's staffing are dependent upon the specific needs of the organization. These needs must directly correlate to the needs of the Town of Southington as a structure that works for one agency may not necessarily work for another. This section provides an overview of the Town of Southington's staffing configuration and management practices.

Fire department staffing can be divided into two distinct groups. The first group is typically recognized by the citizens and is commonly known as the operations section; it can be generally classified as the emergency response personnel. The second group works behind the scenes to provide the support needed by the operation's personnel to deliver an effective emergency response and is commonly known as the administrative section or support services section. Like many fire departments, the Southington Fire Department has distinct staff personnel, Chief Officers, who perform specific administrative functions but are also required to perform operationally if the need arises.

While a fire department's evaluation focuses on several factors, staffing is one of the most important. When reviewing staffing, one must define the expectations of each work unit in addition to the organization's overall performance. Once the work product (output or outcome) is defined, and performance metrics are established, senior leadership assumes responsibility in determining appropriate staffing necessary to accomplish goals and meet performance objectives.

Administration & Support Staffing

Administration

One of the primary responsibilities of the administrative team is to ensure that the operations segment of the organization has the ability and means to respond to and mitigate emergencies safely and efficiently. An effective administration and support services system is critical to the success of the Department.

Typical responsibilities of the administration staff include planning, organizing, directing, coordinating, and evaluating the various programs within the Southington Fire Department. This list of functions is not exhaustive, and other functions may be added. It is also important to understand these functions do not occur linearly and can more often occur simultaneously. This requires the Fire Chief and administrative support staff to focus on many different areas concurrently.

The Southington Fire Department staffs four full-time administration positions. These positions include the Fire Chief, Assistant Chief/Fire Marshal, an executive assistant, and an administrative assistant. This represents 4.6% of the Department's total combined staffing of 86 positions (36 full-time positions and 50 volunteer). It is ESCI's experience that effective administrative staffing totals for municipal fire department operations typically range from 12 to 15% of agency totals. After reviewing the functions and responsibilities assigned to the workgroup, ESCI concluded that the number of full-time equivalents (FTEs) assigned resides in the extreme lower range of the normally experienced administrative levels to support the responsibilities of the Southington Fire Department's administration appropriately. ESCI will make recommendations to address administrative staffing in the Opportunities and Recommendations section of this report.

Training

The Training Division is staffed by the Deputy Chief of Safety and Training.

Southington Fire Department Training Program

The Southington Fire Department has a robust training program. The 2020-2021 Training Plan includes the following topics and allocation of training hours.

Figure 88. Southington Fire Department 2020-2021 Training Plan

Training Topic	Description	Hours
Company Drills	Conducted three times a month for two to three hours per session; 30-60 minutes of the monthly company meeting night is reserved for administrative training. The on-duty crews receive the same training offered at night sessions during their assigned shifts.	9
Driver Training	Incumbent driver/operators demonstrate driving proficiency through the completion of *NFPA 1002 Job Performance Requirements (JPR) 4.3.1 Driving/Operating a Fire Department Vehicle* three hours each quarter.	3
Pump/Aerial Operator Training	Incumbent driver/operators complete quarterly pumping and aerial operations evaluations based on NFPA 1002 Job Performance Requirements.	3
Practical Skills Evaluations	Conducted twice each year based on Job Performance Requirements (JPR's) under NFPA 1001 *Standard for Firefighter Professional Qualifications.*	6
Probationary Firefighter Program	Comprehensive orientation and training program.	24

Training Topic	Description	Hours
Officer Development	Officer development training sessions are held quarterly at the beginning of each staff meeting to enhance the effectiveness of those serving at the chief and company officer level within the organization. One additional session is also scheduled to provide an opportunity for officers to participate in computer-based ICS scenarios incorporating the use of standard operational guidelines. Annually, officer meetings are facilitated to discuss individual development plans that will be tailored to meet the unique personal needs and goals. Each officer is given the opportunity to discuss their short and long–term professional goals, while also identifying specific areas where they would like to focus their training and educational efforts. Several options are available as resources to Southington Fire Department to refine and achieve their training objectives. In addition to the current training schedule, NFPA 1021 *Standard for Fire Officer Professional Qualifications* offers four levels of certification via the National Board on Fire Service Professional Qualification (Pro Board) certification. Additionally, ISO requires a minimum amount of training in specific areas for all suppression personnel. By improving the training opportunities offered and requiring that each officer complete these requirements, the training section of the ISO evaluation could potentially improve the Town's ISO rating by up to nine points, nearly an entire class. Finally, the National Fire Academy provides funding for one training course and lodging per year per firefighter. There are multiple leadership course opportunities available, including Southington Fire Department hosting a course locally.	12
Fire Suppression	Two four-hour or one eight-hour training event to allow for more time and labor-intensive hands-on training to be conducted.	8
Hazardous Materials	Hazardous Materials Operational response training will be conducted in accordance with OSHA 1910.120 and utilizing the Connecticut Fire Academy refresher program.	8
EMT and EMR Recertification	The distribution of continuing EMS education will be completed through online modules and practical training every two years based on the NREMT "*National Continued Competency Program* (NCCP)."	40 EMT 16 EMR
Specialty Training		4
Total Hours		**133**

Connecticut Department of Labor's Division of Occupational Safety and Health Training Requirements

The Connecticut Department of Labor's Division of Occupational Safety and Health (CONN-OSHA) administers Connecticut's Public Employer Only State Plan and enforces occupational safety and health standards as they apply to all municipal and state personnel. As a State Plan state, CONN-OSHA adopts and enforces standards that are at least as effective as the federal requirements. A complete listing of the" Required Minimum Training for Connecticut Fire Services to Meet State Regulations" is included within this report as Appendix C.

OSHA CFR 1910.156 requires "Training and education commensurate with duties and functions members are expected to perform, provided before they perform fire emergency activities." It further requires "Training and education frequently enough to assure each member is able to perform assigned duties and functions satisfactorily and in a safe manner."

ESCI was told repeatedly by Southington firefighters that it has been multiple years since they had attended a live burn training evolution. While it is understood that the skills associated with performing fire suppression activities can be refreshed without live fire, ESCI suggests that the suppression of live fire is one of the most high-risk and low-frequency activities in which Southington firefighters engage. ESCI's recommends that the Southington Fire Department make it a priority to incorporate annual live fire training into its training program.

Insurance Services Offices Training Requirements

Another factor that must be considered in relation to firefighter training is Insurance Services Office (ISO). The following is a summary of the items that ISO considers when reviewing a community's firefighter training program.

Figure 89. ISO Annual Training Requirements

ISO Annual Training Component	Description
Training Facilities / Use of Facilities	Drill tower, Live fire training structure (including smoke room) 2-acre training area 18 hours per year per firefighter (for maximum credit)
Company Training	Company training at fire stations, 16 hours per member per month (for maximum credit)
Classes for Officers	Certification of all officers 12 hours per year of continuing education for all officers (for maximum credit)
New Driver and Operator Training	Classes for new drivers and operators, 60 hours (for maximum credit)
Existing Driver and Operator Training	Classes for existing drivers and operators, 12 hours per year (for maximum credit)
Training on Hazardous Materials	6-hour session per member per year (for maximum credit)
Recruit Training	240 hours per recruit in the first year (for maximum credit)
Building Familiarization for Pre-fire Planning Programs	The community should conduct a pre-fire planning inspection of each commercial, industrial, institutional, and other similar structure once a year for maximum credit in the Fire Suppression Rating Schedule (FSRS). Records of the inspections should include complete and up-to-date notes and sketches.

ESCI correlated the requirements of the Southington Fire Department Training Program with the ISO requirements. It is understood that there is some flexibility within some of the Southington Training Program topics to account for ISO Training. ESCI offers the following suggestions for reclassifying some of the types of training that are conducted in the Southington Fire Department to better-align them with ISO which will ideally improve the department's chances of receiving full training credit during their next ISO evaluation. The Southington Fire Department currently uses the rating bureau section of FireHouse to track this training; when the transition to ESO takes place, every effort should be made to correlate the training program topics to ISO's requirements.

Figure 90. Comparison of Southington Fire Department and ISO Annual Training Requirements

Southington Training Topic	Hours	ISO Training Topic	Hours	ESCI Note
Company Drills	9	Company Training	Company training at fire stations, 16 hours per member per month (for maximum credit)	Increase company drills to 16 hours per month per member for maximum credit.
Driver Training Pump/Aerial Operator Training	3 3	New Driver and Operator Training Existing Driver and Operator Training	Classes for new drivers and operators, 60 hours (for maximum credit) Classes for existing Drivers and Operators, 12 hours per year (for maximum credit)	Increase driver and operator training to 60 hours for new driver / operators and 12 hours per year for existing drivers for maximum credit.
Practical Skills Evaluations	6			Reclassify this training to better-align with ISO.
Probationary Firefighter Program	24	Recruit Training	240 hours per recruit in the first year (for maximum credit).	Connecticut's Firefighter I and II combined satisfy the 240 hours per recruit during the first year to receive full credit.
Officer Development	12	Classes for Officers	Certification of all officers 12 hours per year of continuing education for all officers (for maximum credit).	Southington's Training Program currently satisfies this ISO Requirement.

Southington Training Topic	Hours	ISO Training Topic	Hours	ESCI Note
Fire Suppression	8			Reclassify this training to better-align with ISO.
Hazardous Materials	8	Training on Hazardous Materials	6-hour session per member per year (for maximum credit)	Southington's Training Program currently satisfies this ISO Requirement
EMT Recertification	40	*Not Applicable to ISO*		
EMR Recertification	16	*Not Applicable to ISO*		
Specialty Training	4	*Not Applicable to ISO*		Reclassify this training to better-align with ISO.
		Training Facilities / Use of Facilities	Drill tower Live fire training structure (including smoke room) 2-acre training area 18 hours per year per firefighter (for maximum credit)	The Southington Fire Department should reclassify its current training program topics to specifically include this subject.
		Building Familiarization for Pre-fire Planning Programs	The community should conduct a pre-fire planning inspection of each commercial, industrial, institutional, and other similar structure once a year for maximum credit in the Fire Suppression Rating Schedule (FSRS). Records of the inspections should include complete and up-to-date notes and sketches.	The Southington Fire Department should reclassify its current training program topics to specifically include this subject.

Officer Development

The Southington Fire Department holds Officer Development Training Sessions quarterly at the beginning of each staff meeting. Topics of these training sessions will be at the discretion of the Senior Management Team. One additional session is added each year to provide an opportunity for officers to participate in computer-based ICS scenarios incorporating the use of standard operational guidelines.

According to the 2020-2021 Training Program, officers also meet annually with their supervisors as well as the Training Division to discuss their short and long–term professional goals, while also identifying specific areas where they would like to focus their training and educational efforts.

While these quarterly meetings and annual supervisor meetings are a good beginning, the Southington Fire Department must develop a more formalized Professional Development Plan to develop its fire officers and aid in succession planning. A successful Professional Development Program will benefit both the personnel and the organization they serve. The intent of the Professional Development Program is to engage personnel in identifying gaps in understanding and development that prepares and enables him or her to be successful in current and future roles. This directly translates to personal fulfillment and job satisfaction as well as positioning personnel for future success within the organization. A comprehensive written Personal Development Program should be developed for each organizational level: front-line personnel, first-level supervisors, mid-level managers, and senior leaders.

The Southington Fire Department should develop a Professional Development Program for all positions within the organization. The International Association of Fire Chiefs has developed the Officer Development Handbook, which is intended to function as the foundation for any organization's Professional Development Program. The handbook provides a foundation and explanation of the basic tenets of a Professional Development Program upon which an organization can build upon and customize to meet its own needs.

As part of the Professional Development Program, ESCI suggests that understanding the increasingly complex demands placed upon the leaders of today's fire service, that the town recognize the various levels of Fire Officers that exist within NFPA 1021, *Standard for Fire Officer Professional Qualifications* for midlevel and department chief officers.

Figure 91. NFPA 1021 Fire Officer Levels

Level	Description
Fire Officer I	First-line supervisory officer who has met all the job performance and certification requirements of Firefighter II as defined in NFPA 1001: *Standard for Firefighter Professional Qualifications*, and Fire Instructor I as defined in NFPA 1041: *Standard for Fire Service Instructor Professional Qualifications*.
Fire Officer II	Mid-level supervisor who performs both supervisory and first-line managerial functions who has met all the job performance and certification requirement of Fire Officer I as defined in NFPA 1021.
Fire Officer III	Midlevel supervisor who performs both supervisory and first-line managerial functions who has met all the job performance and certification requirements of Fire Officer II as defined in NFPA 1021: *Standard for Fire Officer Professional Qualifications*.
Fire Officer IV	Upper-level supervisor who performs both supervisory and first-line managerial functions who has met all the job performance and certification requirements of Fire Officer III as defined in NFPA 1021.

Additionally, the Southington Fire Department should give consideration to building National Fire Academy Classes into its Professional Development Program. Active members of fire or emergency management organizations are eligible for a stipend reimbursement to attend the National Fire Academy in Emmitsburg, Maryland. All tuition, instruction, and course materials for National Fire Academy courses are provided at no cost. All active members of fire and emergency management organizations are eligible for stipend reimbursement once every fiscal year.

The National Fire Academy's Managing Officer Program is a multi-year curriculum that introduces emerging emergency services leaders to personal and professional skills in change management, risk reduction, and adaptive leadership. This program is ideal for Southington's Battalion Chiefs and Captains as well as those who aspire to those ranks.

The Executive Fire Officer (EFO) Program is the flagship program of the National Fire Academy. It provides senior fire officers with a broad perspective on various facets of fire and emergency medical services administration. The courses and accompanying research examine how to exercise leadership when dealing with difficult or unique problems within communities. This program is ideal for Southington's Fire Chief, Assistant Chief and Deputy Chief as well as those who aspire to those ranks.

Fire Marshal's Office

The Fire Marshal's Office (FMO) is staffed by an Assistant Chief who, in addition to serving as second in command of the fire department, is the Fire Marshal. The Assistant Chief supervises the Deputy Fire Marshal, and two firefighter/inspectors who are also utilized as additional firefighters when on duty or when shift overtime is available. Current staffing levels are not sufficient to allow prevention personnel to complete required inspections, training, recertification, and all commercial occupancies. Although all are certified and at times used as firefighters on incident scenes, training for fire competencies and with operational crews is limited. All prevention staff must complete 90 hours of continuing education credit every three years. All personnel are certified Fire Marshal's, Code Inspectors, and Fire Investigators. The Fire Marshal's Office is responsible for the following major areas:

- Inspections
- Plans Review
- Code Enforcement
- Fire Investigations
- Public Education
- Community Risk Reduction

The Fire Marshal's Office is located on the 2nd floor of the administration building and each staff member has an office and storage space. Although not directly in the division, the department's administrative assistant is an integral part of the division's operations producing all letters, inspection fees, abatement notices, plans for review, and inspection records. The Town of Southington should consider providing additional positions for the FMO and other support functions.

Professional Qualifications

Fire Marshal Certification in the State of Connecticut is managed by Department of Administrative Services. The Office of Education and Data Management (OEDM) administers all aspects of the credentialing exams for the Office of State Fire Marshal, including the tests for the pre-certification fire training program and challenge exams. In order to become a certified Fire Code Inspector or a certified Fire Investigator, candidates must either complete a training course or an examination.

The Fire Code Inspector module and the Fire Investigator modules are offered biannually (spring and fall semesters), and have exams built into the training. By scoring a minimum of 70% on the final exam, and by submitting the required documentation, candidates earn certification.

The written tests for Fire Code Inspector and Fire Investigator are offered four times a year (Challenge Exams), in February, May, August, and November. The Fire Investigator exam also has a practical assessment, which is offered twice a year in April and November.

Fire Safety Inspections

A core role of Southington's fire prevention efforts occurs as fire safety inspections. These inspections provide not only fire code compliance but are an opportunity for inspections to interact with the community, educate and inform, rely critical information to suppression crews regarding contents, hazards, or building changes, and to build goodwill between the fire department and the community. When a sufficient number of personnel are available to conduct annual fire safety inspections of all commercial, educational, and institutional occupancies, the community becomes better informed, and the fire department is better equipped to successfully mitigate incidents.

Inspection frequency is governed by Connecticut General Statute; however, the FMO cannot realistically meet all requirements. Educational and health care facilities are typically large campuses with multiple buildings and levels and can take an inspector several days to thoroughly inspect. Additionally, daily inspections for new businesses and childcare, liquor business inspections, and new construction must be completed in a timely manner and are typically worked into a schedule.

While some occupancies are required statutorily to be inspected at regular intervals, many occupancies have never been inspected due to a lack of personnel needed to perform inspections and other job requirements. This can create issues because in the event of an emergency no information will be available regarding layout, storage areas, or other hazards that can be potentially life-threatening to firefighters.

Plans Review

The Southington Fire Department charges a flat fee between $75 and $350 to conduct plans reviews, as illustrated in the following figures.

Figure 92. Southington Fire Department Plan Review Fees

Southington Fire Department

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Fire Marshall

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HAROLD BALLARD
Deputy Fire Marshal
Captain

NOTICE OF FIRE INSPECTION FEES

The Town of Southington has adopted a fee schedule that includes fire inspections. As of May 1, 2014, per ordinance Sec. 2-261, all fire inspections will be subject to the fee outlined in the fee schedule listed below. An invoice will be mailed to the business or property owner following the visit and is to be paid within 30 days. Nonpayment will be subject to collections.

APPLICATION TYPE	FEE
Installation/removal of underground & above ground fuel & propane tanks (residential)	$30.00
Installation/removal of underground & above ground fuel & propane tanks (commercial)	$50.00
Liquor license: New application/inspection	$75.00
Liquor license: Annual renewal inspection	$30.00
Educational (new)	$75.00
Educational (Existing)	$35.00
Day care license: New application	$75.00
Day care annual inspection (Existing)	$30.00
Healthcare (clinics, outpatient treatment) new	$75.00
Healthcare (existing)	$30.00
Tank truck inspection (haz mat oil & propane)	$25.00 (each additional vehicle $10.00)
Hotel/motel/dormitory	$25.00
Assembly (new)	$75.00
Assembly (existing)	$25.00
Mercantile (new)	$75.00
Mercantile (existing)	$25.00
Mercantile with fuel dispensing	$25.00
Business	$25.00
Re-inspection	50% of original fee
Booth/tent inspection	$10.00 per unit
Burning permit	$20.00
Blasting permit (set by State of Connecticut)	$30.00
Fireworks	$25.00

Save Lives • Stop Fires

SOUTHINGTON FIRE MARSHAL
(860) 621-3202

BUILDING PLAN INFORMATION

Building/Complex Owner: _____ Phone: _____

Address where plans are being submitted for: _____

General Contractor: _____ Phone: _____

Foreman/Contact Person: _____ Phone: _____

Square foot for project: _____

SOUTHINGTON FIRE MARSHAL'S PLAN REVIEW FEE SCHEDULE	
Building plans: • < 2,500 sq. ft. • 2,501-5,000 sq. ft. • 5,001-10,000 sq. ft. • 10,001-49,999 sq. ft. • Over 50,000 sq. ft.	 $ 75.00 $150.00 $200.00 $250.00 $350.00
Fire Alarms (separate plans)	$ 75.00
Sprinkler plans (commercial): • Area <5,000 sq. ft. • 5,001-10,000 sq. ft. • > 10,000 sq. ft.	 $ 75.00 $150.00 $200.00
Sprinkler plans (residential)	No fee

For new construction or renovations over $3,500.00, the owner or contractor must pick up an order form at the Building Department to purchase a lock box if one is not already installed.

FUEL TANK PERMIT INFORMATION

Property owner: _____ Phone: _____

Address where fuel tank is being installed/removed: _____

Company Installing: _____ Phone: _____

Foreman/Contact Person: _____ Phone: _____

SOUTHINGTON FIRE MARSHAL'S FUEL TANK PERMIT FEE SCHEDULE	
Installation/removal of underground oil /diesel tank **(1-2 family residential*)**	$30.00
Installation/removal of underground oil /diesel tank & propane tanks **(3+ family & commercial)**	$50.00

Freestanding interior home heating oil tanks are exempt

I attest that the above information is accurate and that all fees paid are non-refundable.

_____
Printed Name of Applicant

_____
Signature of Applicant

ESCI conducted a review of six municipalities local to Southington. These communities were East Hartford, Hartford, Manchester, Meriden, New Britain, and South Windsor. All six communities charge for plans reviews on a sliding scale based on the cost of the project.

Figure 93. Comparison of Municipal Plans Reviews Fees

Municipality	Plans Reviews Fees
East Hartford	$40.00 for up to $1,000 $20.00 for each additional $1,000
Hartford	$50.26 for up to $1,000 $30.26 for each additional $1,000
Manchester	$20.00 for up to $4,000 $20.00 plus $7.00 per $1,000 in excess of $4,000
Meriden	65% of the Building Permit Fee or 100% for 'fast track' Code Consulting: $150.00 per hour
New Britain	$0 through $1,000: $0.00 per $1,000 $1,001 through $50,000: $2.50 per $1,000 In excess of $50,000: $5.00 per $1,000
South Windsor	$60.00 for up to $2,000 $18.00 for each additional $1,000

The complete fee schedules for each of the aforementioned communities are included in this report as *Appendix D: Plan Review Fee Schedule.*

It is ESCI's experience that charging for plans reviews based on the cost of the project is very much an industry accepted practice. The East Hartford Fire Chief reported that annual revenue for plans reviews as a result of this effort net between $500,000 and $700,000. ESCI recommends that the Southington Fire Department review its plans review fee schedule as a potential course of increased revenue.

Code Enforcement

In addition to inspection and plans review, code enforcement ensures that laws and ordinances are met and provides recourse if a property owner refuses to return to compliance. Code enforcement requires cooperation and coordination of multiple Town divisions and agencies such as the building department, planning and zoning, Department of Health, and the Board of Education.

Prior to 2015, the State of Connecticut conducted inspections for all manufacturing facilities. Since that time, the state has returned responsibility for these facilities to the local Authority Having Jurisdiction (AHJ) as an unfunded mandate. Like health care and educational campuses, these facilities can take several days to be inspected as are not required by Connecticut General Statute for regular inspection.

Fire Investigation

Fire investigations are required when the origin and cause of a fire cannot be determined by the responding crews, a death or serious injury occurs, or when a criminal act, such as arson, is suspected. Due to the inherently destructive nature of fires, converting a working fire to a crime scene requires specific training and knowledge. All FMO staff are certified Fire Investigators and maintain a rotating call schedule staffed by the Deputy Fire Marshal and two firefighter/inspectors if an investigation is required. When criminal acts are suspected, Southington Police Department employs two detectives certified in fire investigation and are able to assist when needed. Additionally, for large or serious incidents, the State Fire Marshal's Office and the Fire and Explosion Investigations Unit (FEIU) of the Connecticut State Police are also available to provide assistance.

Public Education

Public Education allows fire departments to educate the community and prevent accidents from occurring. Southington Fire Department has made attempts to provide Public Education in the past; however, the COVID-19 pandemic caused all programs to be paused. The department has a "canned program" for Pre-K through 2nd grade Fire Prevention Education and a program for school staff and the elderly, but time and resources are not sufficient to update or maintain the program at this time. Social media is used to post general safety messages and public safety announcements, but reach is limited to those in the community who wish to receive those messages. Prior to the COVID pandemic, the Local 2033 participated in providing a juvenile firesetter program, but it was paused due to the pandemic.

Community Risk Reduction

Fire Prevention is one aspect of the global concept of Community Risk Reduction. NFPA 1035: *Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist, and Youth Firesetter Program Manager Professional Qualifications* defines Community Risk Reduction as "programs, actions, and services used by a community, which prevent or mitigate the loss of life, property, and resources associated with life safety, fire, and other disasters within a community." Community Risk Reduction includes preventing fires as well as a variety of other dangers.

National best practices suggest that Community Risk Reduction Programs should include the Five E's of Emergency Response: Education, Enforcement, Engineering, Economic Incentives, and Emergency Response.

Figure 94. The Fire E's of Emergency Response

Southington Fire Department provides a voluntary Community Risk Reduction Inspection program, providing a home safety inspection for residential homes, smoke and carbon monoxide detector installations, and fire safety education. Like other Public Education programs, no activity has occurred since the pandemic. Southington Fire Department should consider attaching a fire safety message at least once per year along with a regular utility billing notice. Doing so can result in one point of additional credit during the next ISO evaluation.

Operational Staffing

The daily on-duty staffing for the Town of Southington is a minimum of six on-duty personnel 24 hours a day, 7 days a week. This daily paid staffing is split between headquarters (Station 1) and Station 5. Stations 2 and 3 are completely volunteer.

Figure 95. Southington Fire Department Staffing

Station	# of Career Firefighters Staffed Per Shift	# of Volunteer Firefighters on the Roster Who Meet Response Requirements
Station 1	3-4	22 interior firefighters
Station 2	0	10 interior firefighters 2 exterior firefighters
Station 3	0	3 interior firefighters
Station 5	3	N/A

The Staffing Model

In 2005, the International Association of Fire Chiefs Volunteer and Combination Officers Section issued *The Red Ribbon Report: Lighting the Path of Evolution: Leading the Transition in Volunteer and Combination Fire Departments.* This report detailed the difference between "combination" and "dual" fire departments. A combination fire department is one where career and volunteer firefighters are "combined" into a single system to provide fire and emergency response to the community. A "dual" fire department is one in which career firefighters are segregated from volunteer firefighters and there is little cooperation and integration between the two. Although Southington Fire Department's administrative team supports the volunteers and is working to restore continuity within the department as a combination system, the fact that firefighters have developed individual perceptions over time regarding their role within the department makes this an issue that must be addressed.

Within the *Management Components* section of this report, ESCI highlighted the importance of establishing a current mission statement, values statement, and organizational values. As part of this process, it is imperative for the Southington Fire Department to determine its current and future identity. As the fire department is a dynamic environment, the Southington Fire Department will need to regularly evaluate, potentially update, and then reaffirm its mission statement, vision statement and organizational values. The exercise of evaluating, updating, and reaffirming is necessary to ensure that limited resources are appropriately deployed to satisfy the priorities of the department. It is imperative that all levels of the organization, from the newest firefighter to the town's elected officials, understand the mission and priorities of the department so that decisions made at all levels possess the same focus and priorities.

Scheduling

Career Firefighters in the Town of Southington are scheduled to work 24-hour shifts. The 24-hour shift provides several benefits for the organization: infrequent shift exchanges, personnel who can work more than 40 hours per week, and consistent coverage throughout the year, including weekends and holidays.[19]

It is ESCI's experience that the 24-hour shift is a very popular with personnel. One reason for this is that, as a result of working 24 hours in a single shift, personnel work fewer shifts throughout the month. Although the total number of hours worked per week is actually more, the 24-hour shift results in an employee working approximately 8 to 10 shifts per month.

Nationally, it is becoming increasing more challenging to hire and retain qualified firefighters. ESCI suggests that the 24-hour shift is one of the benefits that personnel appreciate about working for the Southington Fire Department. As the 24-hour shifts are also common with many of the other career fire departments in the area, ESCI suggest that this model is currently the most appropriate schedule for Southington. Changing the duration of shifts at the current time could create additional recruiting challenges for the Southington Fire Department.

[19] https://www.firehouse.com/careers-education/article/12156027/work-schedules-24-vs-12

Emergency Response

NFPA 1710, *Standard for Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* addresses apparatus staffing, response time, and the effective firefighting force (also referred to as the effective response force), which is the minimum number of firefighters to carry out essential fireground tasks. As previously noted, NFPA 1710 defines a "Career Fire Department" as "A fire department that utilizes full-time or full-time-equivalent (FTE) station-based personnel immediately available to comprise at least 50 percent of an initial first alarm assignment."[20]

The number and types of tasks needing simultaneous action dictate the minimum number of firefighters required to combat different types of fires. In the absence of adequate personnel to perform concurrent action, the commanding officer must prioritize the tasks and complete some in chronological order, rather than concurrently. These tasks include:

- Command
- Scene safety
- Search and rescue
- Fire attack
- Water supply
- Pump operation
- Ventilation
- Back-up/rapid intervention

While it is the community served who must establish the levels of fire and rescue services provided, considerable debate surrounds the matter of firefighter staffing. Frequently, this discussion is set in the context of firefighter safety. The 2020 Edition of NFPA 1710 specifies the number of firefighters assigned to a particular response apparatus, often characterized as a "minimum of four personnel per engine company."

ESCI notes that the more critical issue is the number of firefighters that are assembled at the scene of an incident in conjunction with the scope and magnitude of the job tasks expected of them, regardless of the type or number of vehicles that arrive. Setting staffing levels is a determination that is made at the community level based on risk, capability, citizen expectations and willingness/ability to fund. There are not mandated requirements that fit all situations, although NFPA 1710 has objectives to meet regarding the number required for some typical scenarios.

Some terms are used nearly interchangeably, such as the assembly of firefighters on an incident, which may be called the "Initial Full Alarm Assignment," the "Effective Firefighting Force" (EFF), or the "Effective Response Force" (ERF). ESCI outlines the NFPA 1710 levels for this effective response force for three different scenarios in the following figures.

[20] *NFPA 1710 3.3.13*

The following figure describes initial full alarm assignments for a residential structure fire, open-air shopping center fire, and an apartment fire. All three of these types of occupancies are common throughout the Town of Southington. These are generalizations representative of different types of structures and risks. Each department may handle these types of fires with fewer or more personnel; however, this describes the work functions that must take place for the handling of a fire.

NFPA 1710 states that in response zones with high-number incidents, geographical restrictions, geographical isolations, or urban areas the engine and truck staffing should be increased to five, while in response zones with tactical hazards, high-hazard occupancies, or dense urban areas, the staffing should be increased to six. The standard defines the term *geographical isolation* as areas where over 80% of the response area is outside of a 10-minute response of the next closest fire suppression unit, and *geographical restriction* as being where there are predictable response delays.

Figure 96. NFPA 1710 Initial Full Alarm Assignments

2,000 SF Residential Structure Fire		Open-Air Shopping Center (13,000 SF to 196,000 SF)		1,200 SF Apartment (3-story garden apartment)	
Incident Commander	1	Incident Commander	2	Incident Commander	2
Water Supply Operator	1	Water Supply Operators	2	Water Supply Operators	2
2 Application Hose Lines	4	3 Application Hose Lines	6	3 Application Hose Lines	6
1 Support Member per line	2	1 Support Member per line	3	1 Support Member per line	3
Victim Search and Rescue Team	2	Victim Search and Rescue Team	4	Victim Search and Rescue Team	4
Ground Ladder Deployment	2	Ground Ladder Deployment	4	Ground Ladder Deployment	4
Aerial Device Operator	1	Aerial Device Operator	1	Aerial Device Operator	1
Rapid Intervention Crew	4	Rapid Intervention Crew	4	Rapid Intervention Crew	4
		EMS Care	2	EMS Care Crew	2
Total	**17**	**Total**	**28**	**Total**	**28**

The minimum response to the benchmark structures is 17 firefighters for a residential structure, 28 for an open-air shopping center, and 28 for an apartment. The previous standard was 15 members. The two additional positions required in the 2020 standard result from an increase in the recommended size of the rapid intervention crew (RIC). As previously noted, both NFPA 1500 and OSHA 29 CFR 1910.134(g)(4) require a minimum of a team with at least two members located outside an immediately dangerous to life and health (IDLH) atmosphere to monitor and provide emergency rescue for responders until a more formalized rapid intervention crew is created; this is generally referred to as "two-in/two-out." The four-person RIC outlined in the revised standard must consist of an officer and three firefighters.

Minimum staffing for the Southington Fire Department is six firefighters. Structure fires and other labor-intensive emergencies receive additional support from career staff personnel in the form of up to four additional firefighters being called back to work. The response of these firefighters is delayed because they need to report back to work, but it will bring the total to 13 firefighters when they do arrive on scene. Volunteer firefighters respond if they are available.

ESCI recommends that the Southington Fire Department work toward having a minimum of four personnel on all staffed engines and ladder trucks in accordance with NFPA 1710. The value of four-person staffing cannot be overstated. Four firefighters allow for a safer and more efficient delivery of fire suppression operations than is possible with only three firefighters. The town and department should make a commitment to adopting a minimum staffing policy using NFPA 1710 that guarantees at least four qualified members on each piece of apparatus for field operations.

The Southington Fire Department uses a "Working Fire Protocol Declaration" to determine the mutual aid that will be requested for a working fire. ESCI understands that Southington volunteer firefighters are dispatched to working fires and may respond, but since there is no guarantee of a volunteer firefighter response, volunteers are not included in this calculation to illustrate the potential worst-case scenario of a working fire without any volunteer response.

Based on the current Working Fire Protocol Declaration, to achieve an effective fire fighting force of 17 firefighters for a single-family residence, Southington will require a second alarm response. To satisfy the ERF of 28 firefighters for a strip shopping center or an apartment building, Southington will require a third alarm response.

ESCI recommends that the Southington Fire Department modify its Working Fire Protocol Declaration to assure that that adequate resources are dispatched to a working fire in a single-family home to initially respond with at least 17 firefighters and that at least 28 firefighters are initially dispatched for working fires in strip malls and apartment buildings.

Figure 97: Southington Fire Department Working Fire Declaration: Personnel On Scene

1st Alarm		2nd Alarm		3rd Alarm	
Department	**Staffing**	**Department**	**Staffing**	**Department**	**Staffing**
Southington	6	Southington	6	Southington	6
Bristol (North) or Meriden (South) for RIT	3	Meriden	3	Meriden	3
		Bristol	3	Bristol	3
		Plainville	3	Plainville	3
		Cheshire	3	Cheshire	3
		Kensington	3	Kensington	3
				New Britain	6
				Wolcott	3
Alarm Total	**9**		**19**		**30**

These are generalizations that are representative of different types of structures and risks. Fire departments may handle these types of fires with fewer or more personnel, however, this describes the work functions that must take place for the mitigation of a fire.

When a fire escalates beyond what can be handled by the initial assignment, unusual characteristics such as a wind-driven fire are present, or the fire is accelerated with a highly flammable compound, additional personnel will be needed. Other scenarios such as mass casualty incidents, explosions, tornadoes, etc., may also require additional staffing. It is difficult or impossible to staff for these worse case incidents, which is why a strong mutual aid or automatic aid plan is needed.

Volunteer Firefighter Response

The Southington Fire Department uses a "Response Matrix" to determine response to calls. Monday through Friday between the hours of 6am and 6pm, the volunteer dispatch is an "all call" for any available volunteer firefighter to respond. Outside of these hours, the appropriate fire company is dispatched based on the geographical location of the call. Career firefighters are always dispatched to all calls for service. The following call types also include the dispatch of volunteer firefighters.

Figure 98: Volunteer Firefighter Response Matrix

Fire Incidents
Car fire next to or inside a building
Chimney fire or suspected chimney fire (flames coming from chimney)
Electrical fire inside a building
Electrical wires burning/arching on or in a building
Fire inside any building or structure
Fire on any building or structure
Furnace, boiler or hot water heater fires or explosions
Odor or smell of something burning in a building
Outside fire threatening a building (closer than 10 feet from building)
Railroad locomotive or rail car on fire
Smoke or smell of smoke in a building
Smoke coming from a building
Hazardous Materials Incidents
Dizziness/Lightheaded people (more than one)
Fumes/Odors in a building causing sickness (more than one)
Industrial releases – gases, liquids, or powders (indoors)
Odor or smell of gas inside a building (natural, propane, or gasoline)
Uncontrolled leaks of HazMat indoors (gases, liquids, and powders)
Unknown odors or substance with symptoms (more than one)
Rescue Incidents
Accident needing extrication
Confined space rescue/entry
Construction accident
Extrication
Farming accident
Highway accidents – I-84/I-691 (all)
Ice rescue
Industrial Accident – machinery accident, forklift, etc.
Mountain rescue

Rescue Incidents Continued
Person trapped (anywhere by anything)-Elevator = Still Alarm
Trench rescue
Water Rescue - pond, reservoir, lake, river, pool, etc.
Brakes on fire (road vehicle)
Vehicle Incidents
Brakes on fire (road vehicle)
Car fire
Truck fire (ask if carrying HazMat)
Vehicle fire – buses, recreational vehicles, motor homes
Vehicle smoking
Brush Fire Incidents
Brush fire
Fire on the mountain or in the woods
Grass/leaves on fire

Calls that are dispatched for only the on-duty career firefighters are "still" alarms. If the shift commander needs additional resources, a single volunteer company, an all-call, and / or mutual aid will be dispatched. The following call types also are still alarms.

Figure 99: Still Alarm Response Matrix

Still Alarm Response Matrix
Accidents involving vehicles of any size
Assist ambulance, police, other government agency, etc.
Biological hazard spill or release
Carbon monoxide detector alarm or suspected inside a building
Dumpster fire
Elevator – person stuck in
EMS Call/medical assistance
Fire alarm – commercial and residential
Fire involving ATV, snowmobile, golf cart, lawn mower (outdoors)
Gas leaks or outdoors odors – propane or natural gas
Highway blocking for ambulance/EMS call
Leaks from HazMat transport vehicles
Mulch on fire
Smoke detector – intermittent beep / problem with no smoke or fire
Smoke coming from a chimney that is unusually heavy/large amount
Smoke alarm sounding unsure if fire is present
Smoke or odor of smoke in the area outdoors
Spills of fuels, oil, or fluids outdoors
Supervisory alarm/supervisory switch
Transformer fire/arcing / explosion
Tree branch on wires arcing (no wires down)
Trouble alarms, tamper alarm / tamper switch
Unauthorized fires outside (campfires, barrels, garbage, etc.)
Unknown odors or substances without any symptoms
Utility pole fire
Vehicle off the road as the result of an accident
Vehicle rollover, vehicle vs building, vehicle vs utility pole
Water flow alarm
Water leaks / water in basement
Wires down

In the *Community Risk Assessment* section of this report, using probability, consequence, and impact of an incident on the department's response system as the foundation for all risk assessments was detailed. Applying these principals, it should be the goal of the Southington Fire Department to safety deploy only the needed resources to safety and efficiently mitigate each emergency.

ESCI agrees with the current volunteer and still alarm responses with one exception: the Southington Fire Department should conduct a risk assessment of adding a volunteer response to the highway for blocking ambulance / emergency medical services calls. Highway calls pose significant risks for first responders, and while there is an added risk associated with adding additional resources to these calls, the benefits of using additional fire apparatus as "blockers" to protect the emergency responders on scene will likely outweigh that additional risk.

Emergency Medical Services Response

The concept of Primary Service Areas (PSA) was introduced in Connecticut in 1974. A PSA is a specific geographic area that is served exclusively by an emergency medical services (EMS) provider. The State of Connecticut Department of Public Health (DPH) designates this provider. Only the Primary Service Area Responder (PSAR) designated by the State may answer emergency calls in the specified geographic area. These geographic areas may include or be within the boundaries of a municipality, tax district, tribal entity or other specifically identified areas.

There are four PSAR levels of EMS recognized and regulated by the State. They are First Responder, Basic Ambulance, Intermediate, and Paramedic. The DPH is required to assign a PSAR for each level of service for every municipality in the state. Public Health regulations establish the factors that are to be considered when designating an EMS provider as a PSAR. A single PSAR may be certified or licensed to provide one or more of these levels of service.

In the Town of Southington, the PSA Assignments are as follows:

Figure 100: Primary Service Area Assignments

Service Name	Service ID Number	Service Level	Service City/Town	EMS Region
American Medical Response of CT, Inc.	L093P1	Basic Ambulance First Responder Paramedic	Southington	2
Southington Fire Department	1311SR	Supplemental First Responder	Southington	3
Southington Police Department	1312SR	Supplemental First Responder	Southington	3

In 2014, Public Act 14-217 was passed which gave municipalities more control over who provides Emergency Medical Services in their town. The public act also reinforced development of a Local EMS Plan (LEMSP). These plans are an important component of overall town planning and promote healthy business relationships between a municipality and the EMS organizations, at all levels, that provide emergency care to the residents and visitors of the town. OEMS developed a toolkit as a "best practices" approach to building an LEMSP.

The Town of Southington's LEMSP is due to be updated with the state by January 1, 2023. ESCI suggests that the Town of Southington may want to consider pursuing the designations as the PSA holder for all levels of service within the Town. The Town would still have the right to contract out the service but holding the PSA better-positions the municipality to control the delivery of emergency medical services within its boundaries.

There is no notion of competitiveness factored into the market for emergency medical calls within the current PSA System. Municipalities may contract with only the provider assigned to them to obtain better performance or higher level of service. Due to the methods of PSA assignment, this service cannot be bid on the open market. Additionally, PSA Holders could surrender a PSA at will if they no longer chose to provide the service. Should this happen within the Town of Southington at any point in the future, the town would be forced to identify an alternate method for the delivery of emergency medical services. As emergencies always start and end locally, it would be in the best interest of the Town of Southington to consider pursuing the designation as the PSA holder for all levels of service to ensure that it is positioned to react to the dynamic needs its community.

Supplemental First Responders

ESCI noted during the site visit that while both the fire and police departments are both designated as Supplemental First Responders, that the fire department is not dispatched to many types of medical calls that should warrant an immediate response. This is particularly troublesome considering that firefighters in Southington are trained to the level of Emergency Medical Technician (150 hours of emergency medical training) while police officers are trained to the level of Emergency Medical Responder (60 hours of emergency medical training) and that even when fire department personnel are positioned geographically closer to a medical emergency than police personnel, the fire department personnel are often not dispatched.

The 2005 study "Paramedic Response Time: Does It Affect Patient Survival" by P.T. Pons[21] found that no significant difference was associated with ambulance response times for traumatic injuries and cardiac events when comparing transports arriving in less than eight minutes versus response times of greater than eight minutes, but that there was a survival benefit for those with intermediate or high-risk mortality when the response time was four minutes or less. For this reason, ESCI recommends that the Town of Southington reevaluate all emergency medical response protocols to ensure that the closest appropriate response unit is dispatched to all emergency calls as triaged by Emergency Medical Dispatch Protocols.

[21] https://doi.org/10.1197/j.aem.2005.02.013

Service Delivery and Performance

There are multiple components associated with providing quality and efficient services to the community. For most communities, this ability to provide service is of utmost importance to the citizens, elected officials, policy makers and department leadership. To evaluate the ability of Southington Fire Department to provide service, ESCI analyzed the following components of current and historical service delivery.

- Service Demand
- Resource Distribution
- Resource Concentration
- Response Reliability
- Response Performance
- Mutual & Automatic Aid Systems

Service Demand Review

The first component of service delivery—service demand—may be simply defined as the number of incidents to which a department responds. However, this simplified definition does not provide department leadership the needed depth of knowledge to enable them to make the decisions which will best provide resources to that demand for service. Thus, the deeper understanding is achieved by analyzing service demand by incident type and by temporal variation.

Service Demand by Incident Type

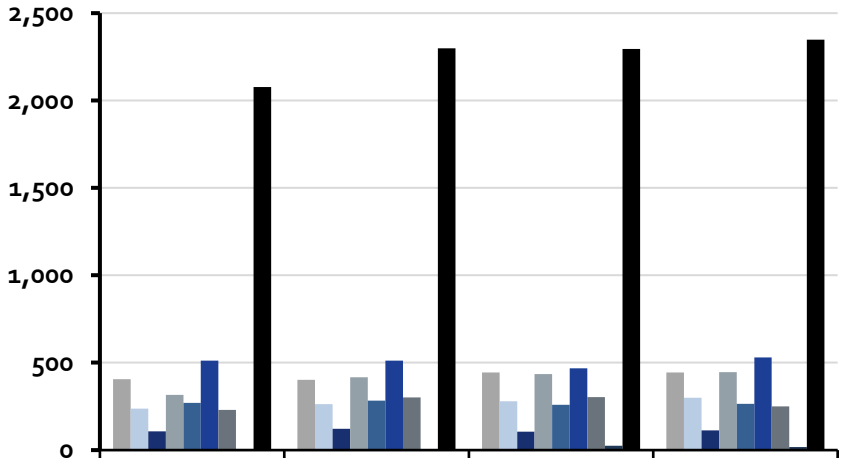
When department leadership has the ability to analyze service demand by incident type, they are more prepared for determining the appropriate resources to meet that demand. Southington Fire Department has adopted the use of a fire incident reporting system that uses the National Fire Incident Reporting System (NFIRS). This nationally recognized classification system categorizes each type of incident with a three-digit code which are then grouped into a series by the first digit of each code as illustrated below.

Figure 101. NFIRS Incident Types

Incident Series	Incident Heading
100-Series	Fires
200-Series	Overpressure Rupture, Explosion, Overheat (No Fire)
300-Series	Rescue and Emergency Medical Service (EMS) Incidents
400-Series	Hazardous Condition (No Fire)
500-Series	Service Call
600-Series	Cancelled, Good Intent
700-Series	False Alarm, False Call
800-Series	Severe Weather, Natural Disaster
900-Series	Special Incident Type

The following figure illustrates the historical service demand by incident type for SFD. For purposes of this analysis, NFIRS 200-series, 800-series and 900-series were combined into a single category of "Other." From 2016 to 2019, there was an overall increase in service demand of 13.0%. When analyzed by category, alarm incidents increased by 9.6%, emergency medical incidents increased by 26.1%, fire incident increased by 4.7%, motor vehicle collision incidents increased by 41.1%, hazardous condition incidents decreased by 1.9%, service call incidents increased by 3.7%, and canceled/good intent incidents increased by 8.7%.

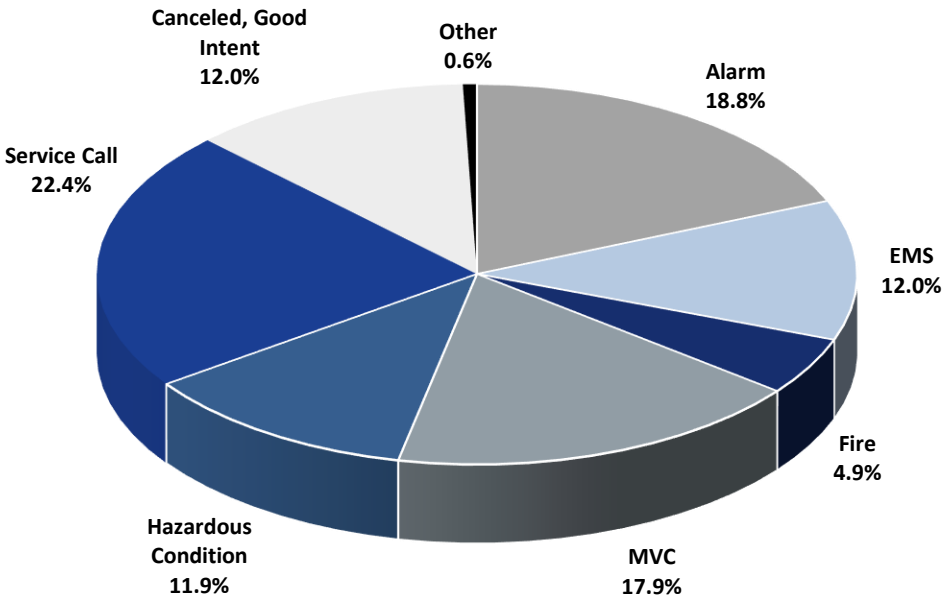
Figure 102. Southington Fire Department Service Demand by Incident Type 2016–2019



	2016	2017	2018	2019
Alarm	406	402	445	445
EMS	238	263	280	300
Fire	107	122	105	112
MVC	316	416	435	446
Hazardous Condition	270	283	259	265
Service Call	511	511	468	530
Canceled, Good Intent	230	301	304	250
Other	7	5	24	18
Total	2,078	2,298	2,296	2,348

The service demand by incident type figure above illustrated the quantity and progression from year to year within each category. A second way to view the data is how each category compares as a portion of the whole. This is illustrated in the figure below.

Figure 103. Southington Fire Department Service Demand by Incident Type 2016–2019

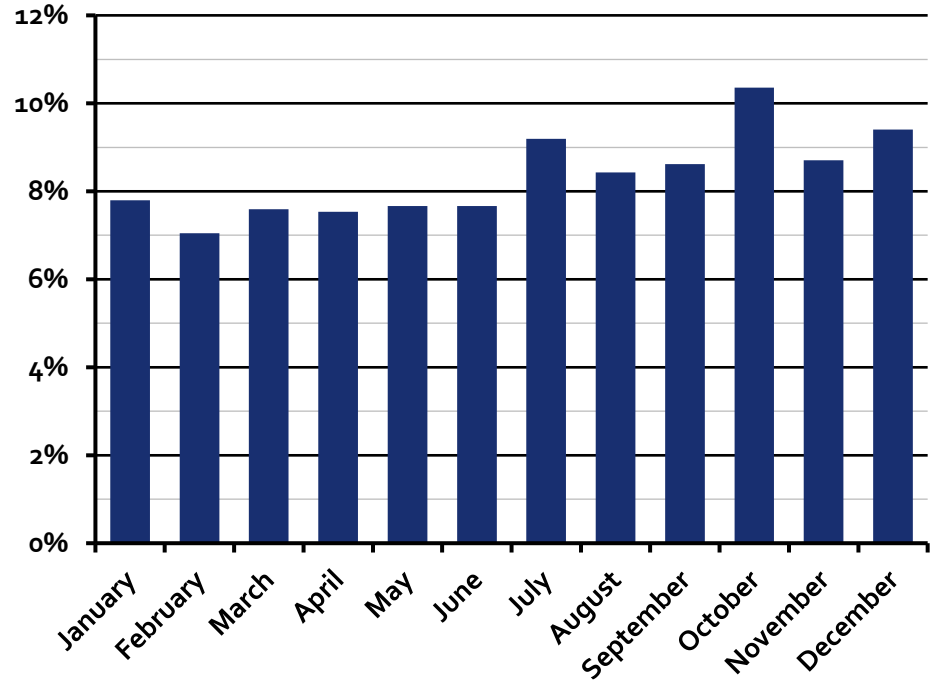


Temporal Variation

Armed with the knowledge as it relates to the types of service demand, leadership should also consider the temporal variation of service demand. The temporal occurrence of service demand may impact decisions made in relation to staffing for base response versus peak load response as well as scheduling of non-response activities such as training, apparatus maintenance, pre-incident planning, hydrant testing, hose testing, etc. For this analysis, each temporal component illustrates the percentage relative to the total service demand that occurred during the study period.

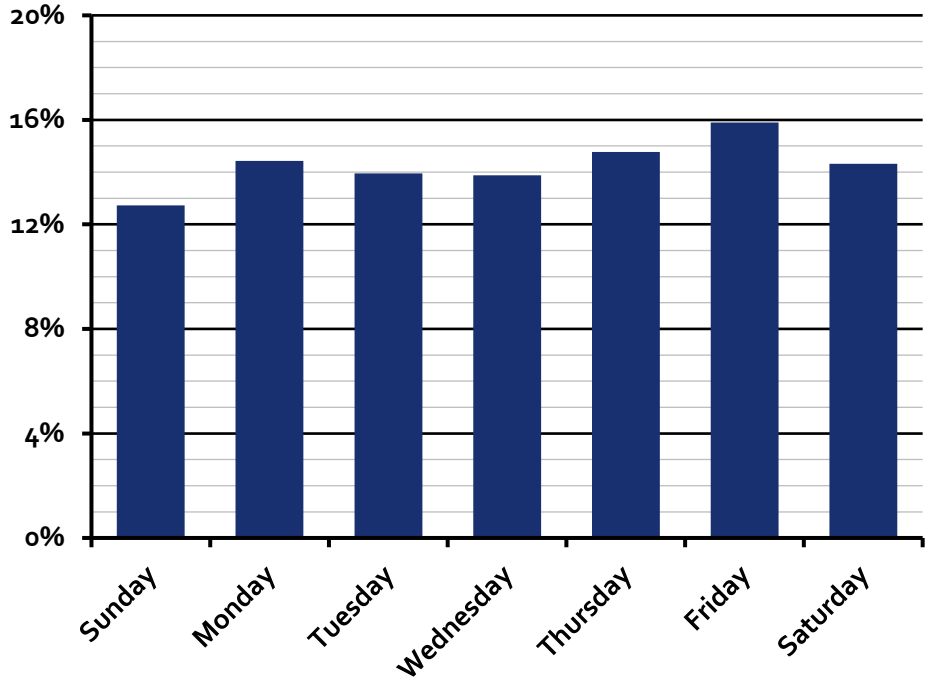
The first component of temporal variation to be considered by leadership analyzes service demand by each month. As illustrated in the figure below, the lowest demand for service occurs in February and then increases until reaching the first peak in July. While there is a slight drop in August, the increase continues until reaching October, the month with the greatest demand for service. This is followed by a slight drop in November, an increase in December and then a final decrease.

Figure 104. Southington Fire Department Service Demand by Month 2016–2019



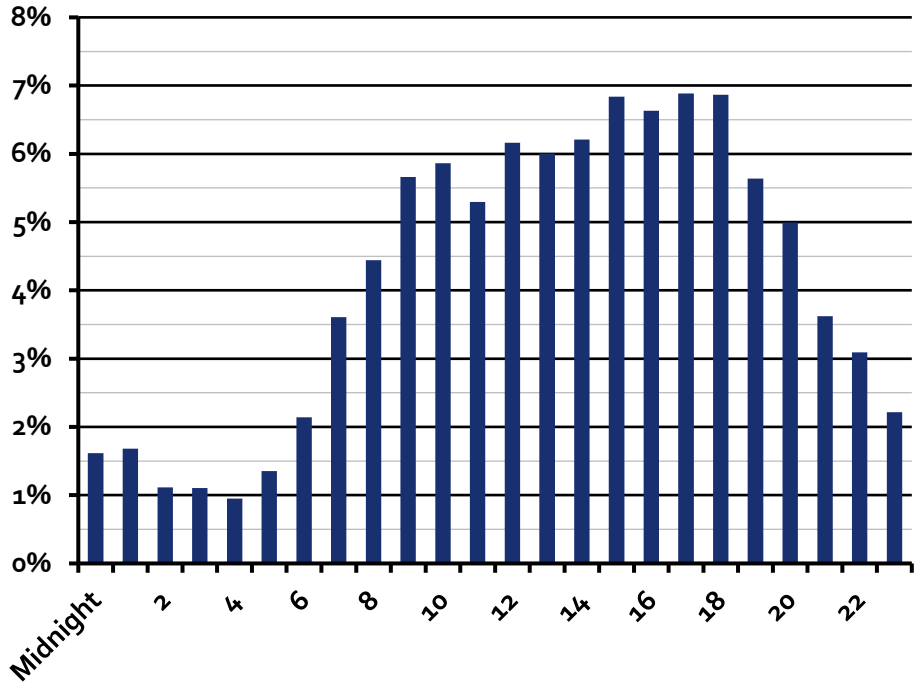
The second component of temporal variation to be considered by leadership analyzes service demand by day of week. As illustrated in the figure below, the lowest demand for service occurs on Sunday. This is followed by a slight peak on Monday and then a general increase until reaching Friday, the day with the greatest demand for service. Then, service demand decreases over the weekend.

Figure 105. Southington Fire Department Service Demand by Day of Week 2016–2019



The final component of temporal variation to be considered by leadership analyzes service demand by time of day. As illustrated in the figure below, service demand is at the lowest level at 4 AM. It then begins to increase through the next two hours and then the rate of increase steepens throughout the morning hours. This increase in demand is commonly found in communities with a balance between employers operating a normal workday schedule as opposed to those communities supported by a manufacturing base with multiple work schedules. This increase throughout the morning coincides with the population awakening, preparing for the day, and then beginning their daytime activities such as working, shopping, recreation, etc. Throughout the day, service demand continues to increase and then levels off at its highest point in the afternoon hours of 3 PM to 6 PM. Then, coinciding with the movement of the population into their evening activities, there is a decrease in service demand. The rate of decrease steepens at 11 PM and throughout the nighttime hours until returning to the lowest level at 4 AM.

Figure 106. Southington Fire Department Service Demand by Time-of-Day 2016–2019



While service demand is lowest during those early morning hours, it should be noted that most fatal residential fires occur most frequently late at night or early in the morning. Based on findings from a national study, from 2014 to 2016, residential fatal fires were highest between 1 AM to 2 AM, and 4 AM to 5 AM. The 8-hour peak period (11 PM to 7 AM) accounted for 48% of residential fatal fires.[22]

Resource Distribution Analysis

To determine how the current deployment model of the fire department affects coverage throughout the Town, the current performance of the department must first be evaluated. Using fire service industry standards to include National Fire Protection Association (NFPA) standards and Insurance Services Office (ISO) criteria, Southington's deployment model and performance were evaluated.

In the first section, NFPA criteria specific to fire department performance were applied and Southington's performance evaluated.

NFPA 1710 Criteria

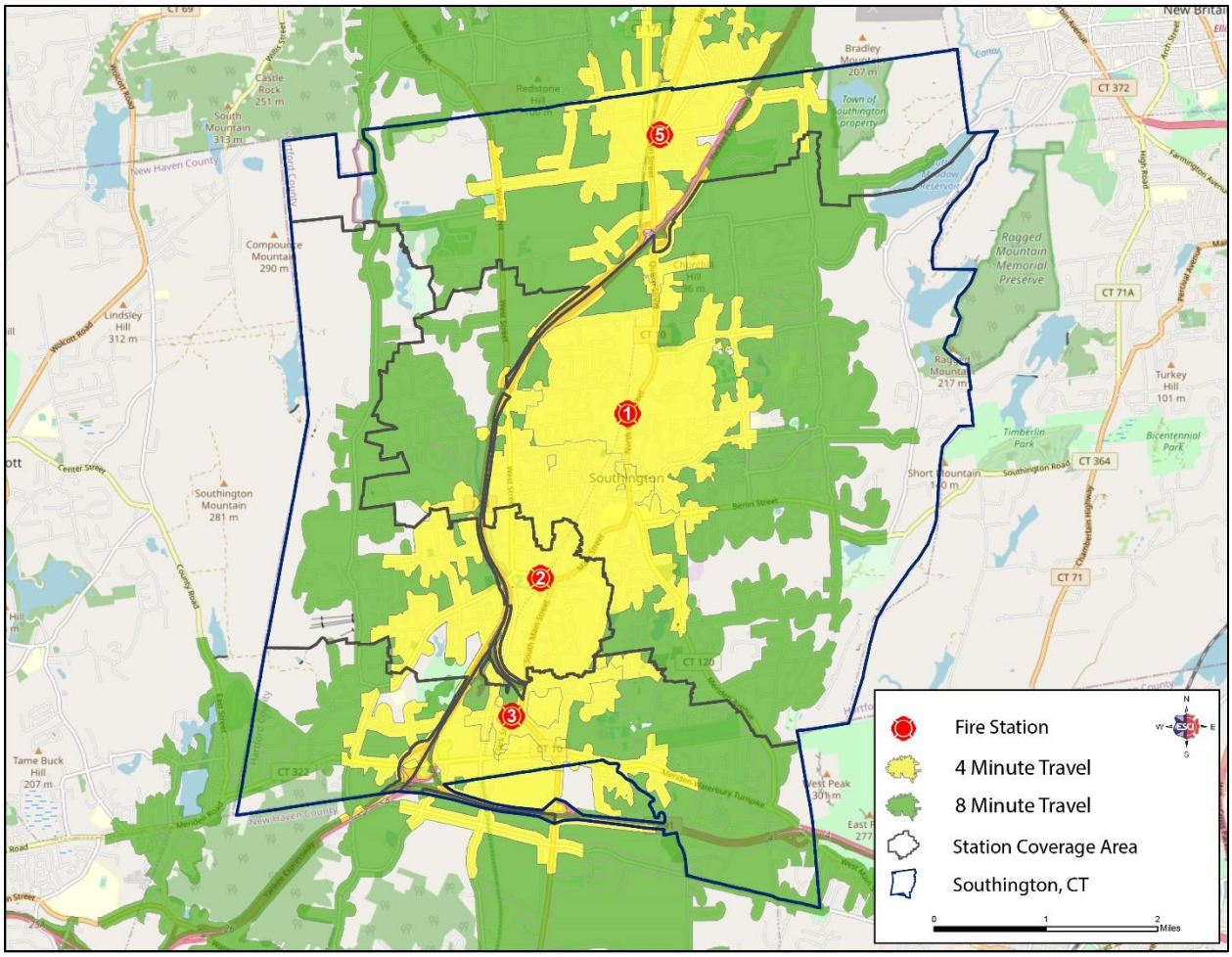
The National Fire Protection Association (NFPA) is an industry trade association that develops and provides standards and codes for fire department and emergency medical services for use by local governments. One of these standards, NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, serves as a national consensus standard for career fire department performance, operations, and safety. Within this standard, a travel time of 240 seconds, or 4 minutes, is

[22] Fatal Fires in Residential Buildings (2014-2016), Topical Fire Report Series Volume 19, Issue 1 /June 18, U.S. Department of Homeland Security, U.S. Fire Administration, National Fire Data Center.

identified as the benchmark for career departments to reach emergency calls within their jurisdiction with the first arriving unit. Additionally, the balance of the response (called the effective response force) is required to arrive to the incident within 480 seconds, or 8-minutes.

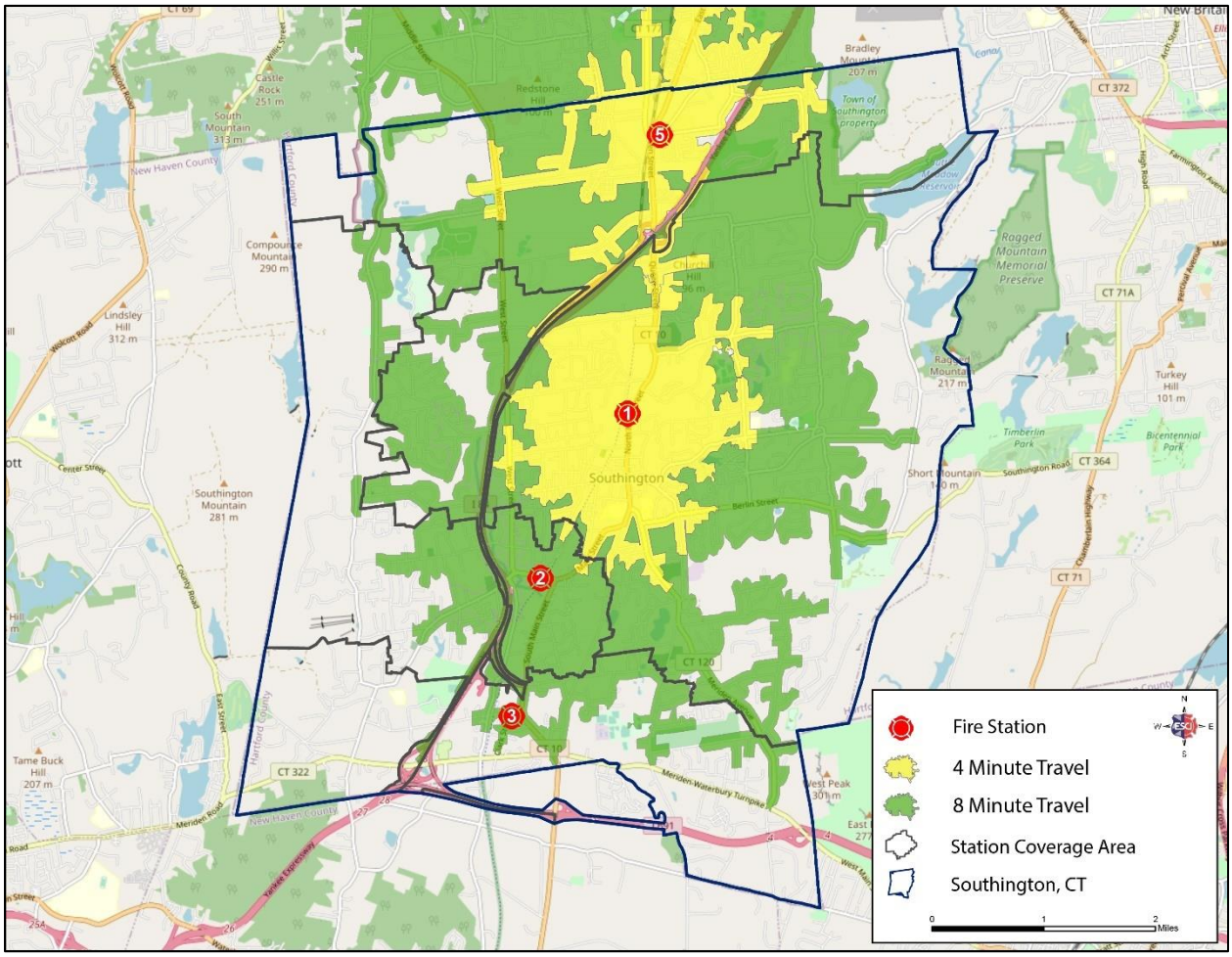
Figure 107 provides a synopsis of Southington Fire Department's ability to meet these standards based upon predicted travel times using historical traffic data from Esri for traffic patterns at 8 AM on Monday mornings. Unshaded pockets indicate that the area falls outside of the model's maximum extension from the road network. The analysis shown in this figure provides travel times for all four stations to demonstrate travel capabilities.

Figure 107. 4 and 8-Minute Travel – NFPA 1710



In the following figure, travel times from staffed stations are illustrated. In this figure, the actual performance for the majority of calls is shown as most demands for service occur during workweek hours.

Figure 108. 4 and 8-Minute Travel from Staffed Stations– NFPA 1710



Assuming all units are available and in quarters, Fire Station 1 can provide adequate coverage to the core of the town while Station 5, positioned near the northern border, has much of its 4-minute travel time coverage extending beyond the Town's borders. Should the Town consider relocating a fire station at some point in the future, consideration should be given to station placement to optimize coverage.

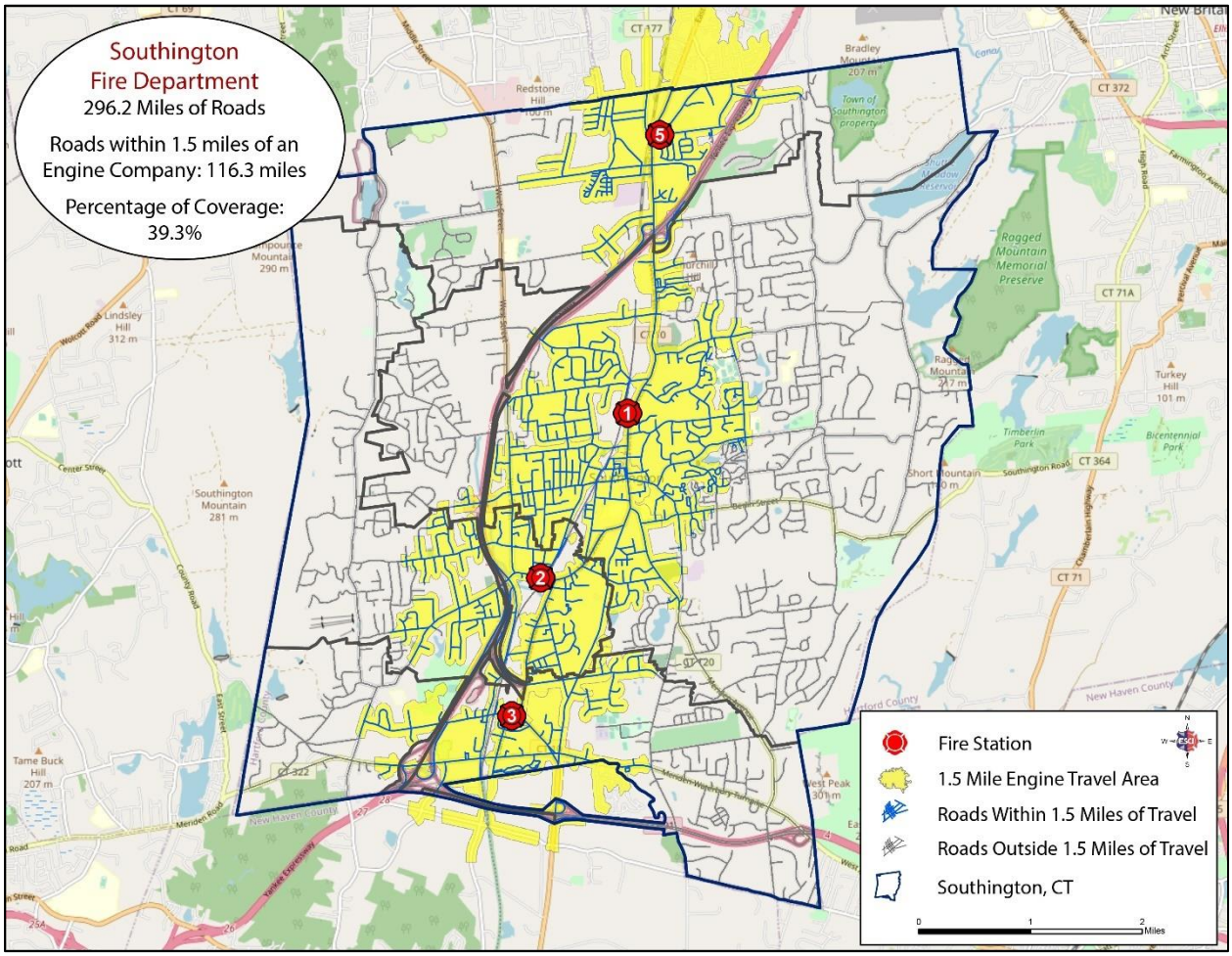
ISO Criteria

The Insurance Services Office (ISO) is a New Jersey-based advisory organization that provides insurance carriers with a classification rating of a local community's fire protection. The Property Protection Class (PPC®) score or rating classifies communities based upon an overall scale of 1 (best protection) to 10 (no protection) and assesses all areas related to fire protection. These areas are broken into 4 major categories which include: emergency dispatch and communications (10% of the rating), water supply system and distribution capabilities (40%), the fire department (50%), and Community Risk Reduction efforts (an additional 5.5% credit is available above 100%).

Engine Company Performance

A key area of credit towards a jurisdiction's PPC® score is the degree to which structures protected by the fire department fall within a 1.5 road mile service area of a fire station. This 1.5 road-mile standard is used to estimate a 4-minute travel time for first responding units as required by NFPA 1710. In Figure 109, an analysis was completed for current fire stations with areas in yellow indicating those structures within a 1.5-mile drive. Based on the ISO engine company travel criteria, approximately 39% of Southington is included within the 1.5-mile travel distance.

Figure 109. ISO 1.5-Mile Engine Company Service Area

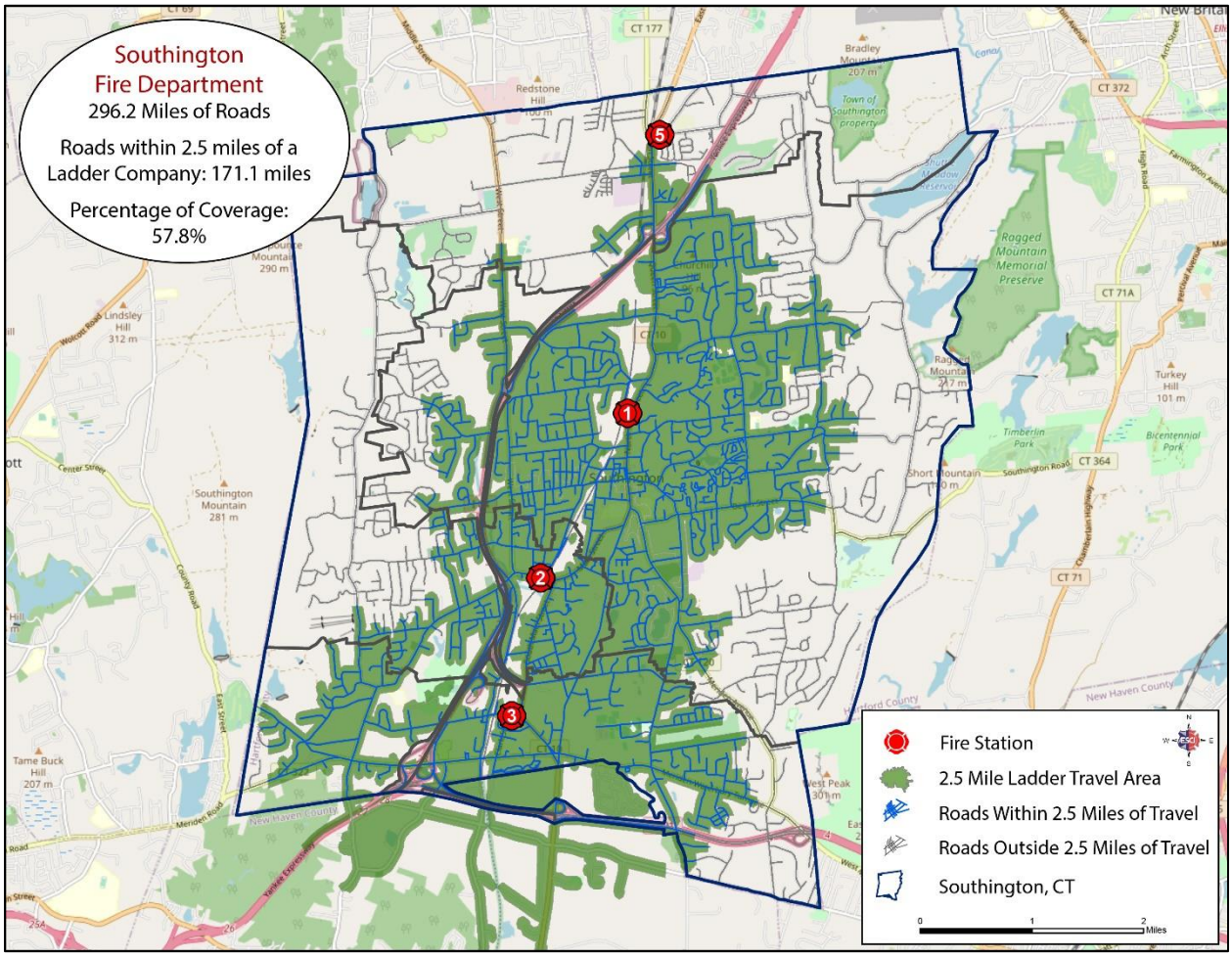


Engine company coverage is concentrated primarily along Main Street/Old Turnpike Road. Coverage for stations 3 and 5 extend outside of the Town's borders and would not be eligible to be credited towards the deployment score.

Ladder Company Performance

In many jurisdictions across the country, ladder companies are deployed only to certain types of incidents and are not necessarily considered as the first due unit for all other incident types. Because of this, ISO uses a 2.5 road-mile travel distance for ladder companies to estimate an 8-minute travel time in urban and suburban areas by ladder companies to provide the balance of personnel and equipment needed for incidents such as working fires. Figure 110 displays Southington's ladder company performance within the Town.

Figure 110: ISO 2.5-Mile Ladder Company Service Area

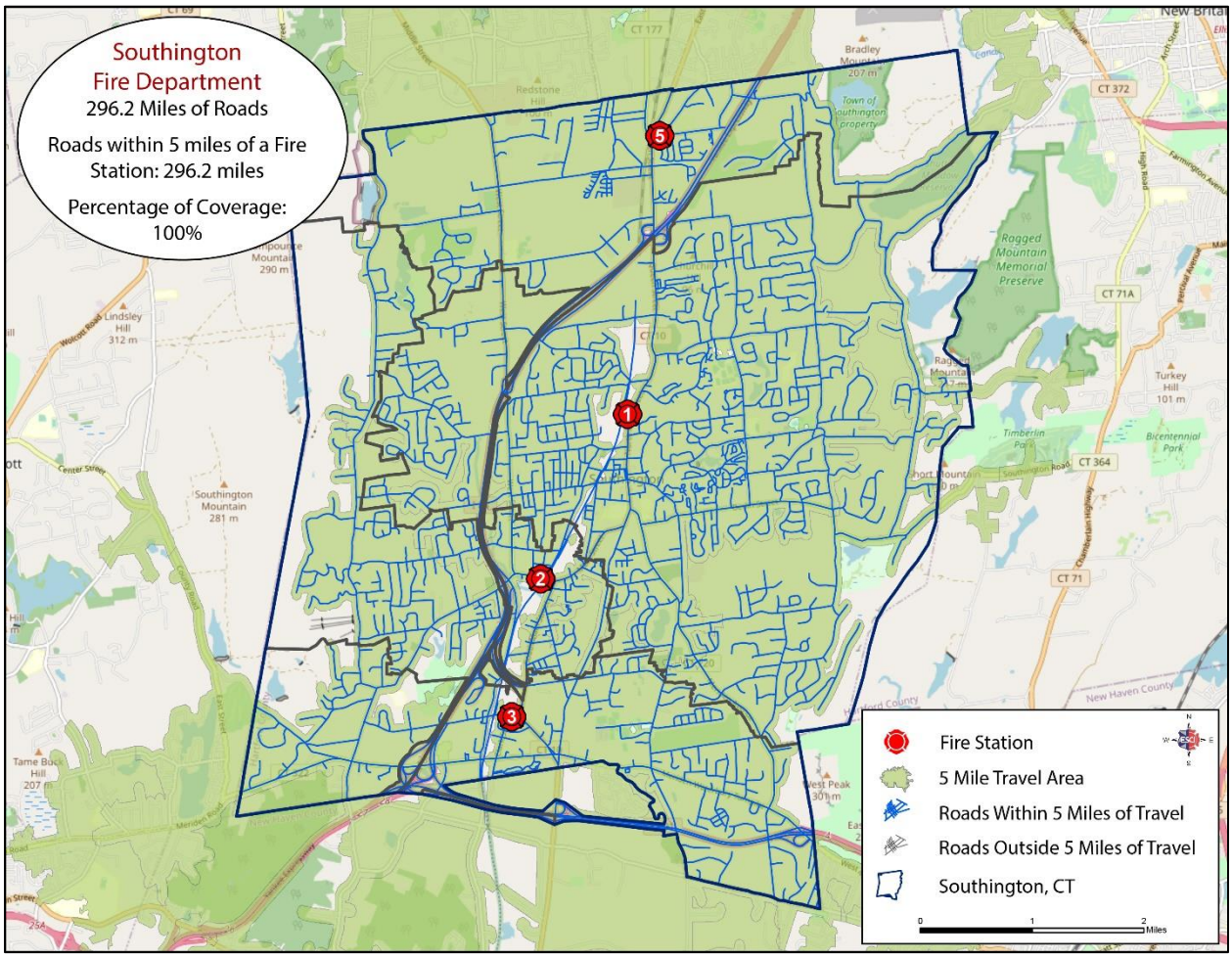


Southington Fire Department deploys its primary ladder company from Station 1 and a reserve ladder is housed at Station 3. Overall, nearly 58% of the road base in Southington is accessible within a 2.5 mile distance of a ladder company.

ISO Fire Station Coverage

In order to receive a PPC® rating that indicates fire coverage is available from ISO, structures must generally be located within 5-miles of a fire station. Areas outside of 5-miles are subject to receiving a PPC® rating of 10, meaning that no fire department coverage is available. Within the Town of Southington, all areas lie within 5-miles of a fire station and are eligible to receive a rating based upon the performance of the fire department.

Figure 111: ISO 5-Mile Service Area

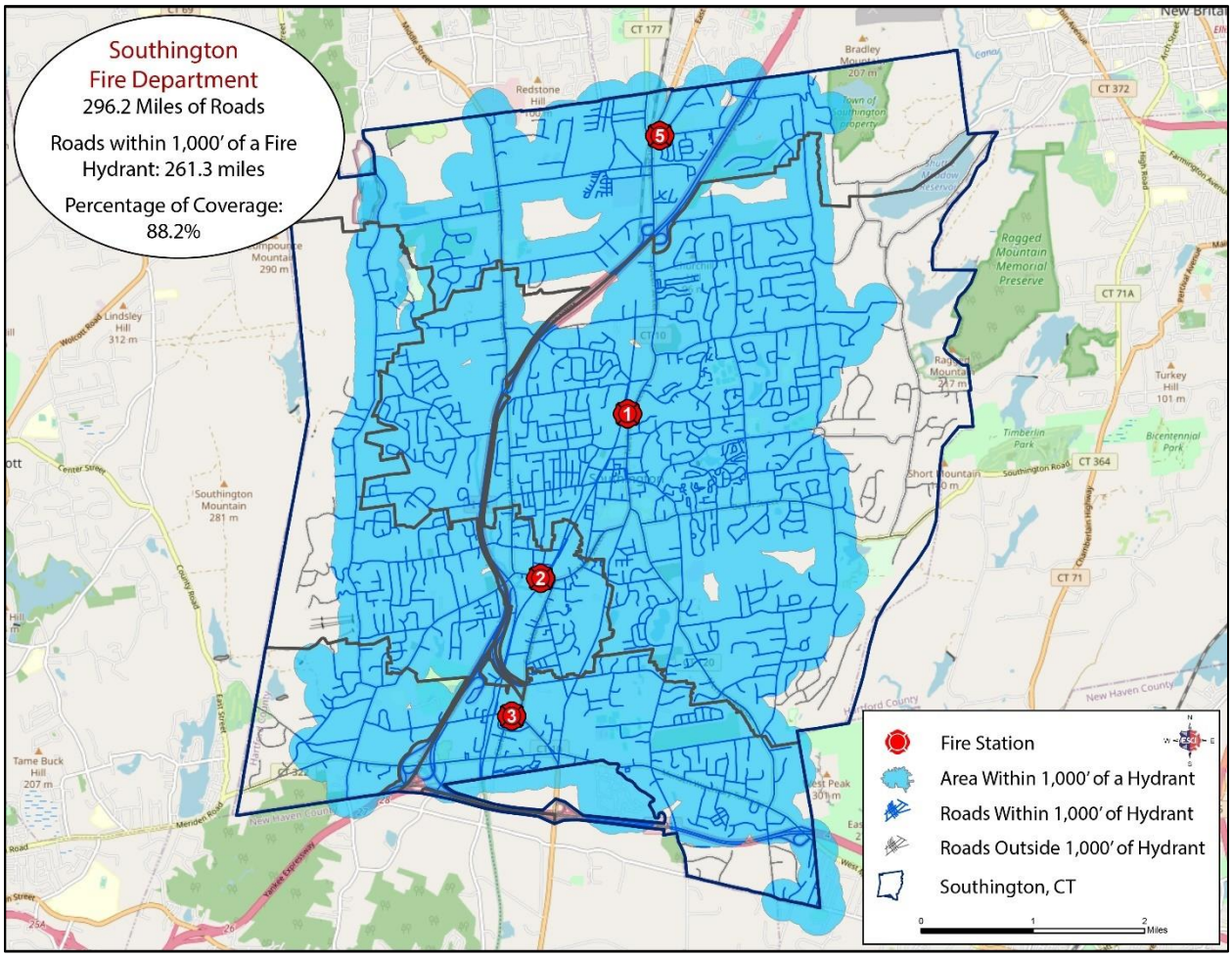


Water Supply and Hydrant Locations

Access to water is a fundamental requirement for fire suppression in urban settings. Without an adequate supply of water, fire suppression operations are challenging. Additionally, the access point for this water supply must be located close enough to the structure to allow for rapid access by the fire department.

Next, fire hydrant coverage within Southington is displayed using ISO requirement that structures must be located within 1,000 feet of a fire hydrant.

Figure 112: ISO Fire Hydrant Coverage



When a 1,000-foot ring is placed around each of the fire hydrants on Southington's water supply system and consolidated together, the Town provides coverage to 88.2% of its road base within the municipal boundaries. Other factors to consider when evaluating water supply are flow rates and capacities, inspections, flow testing, and record keeping.

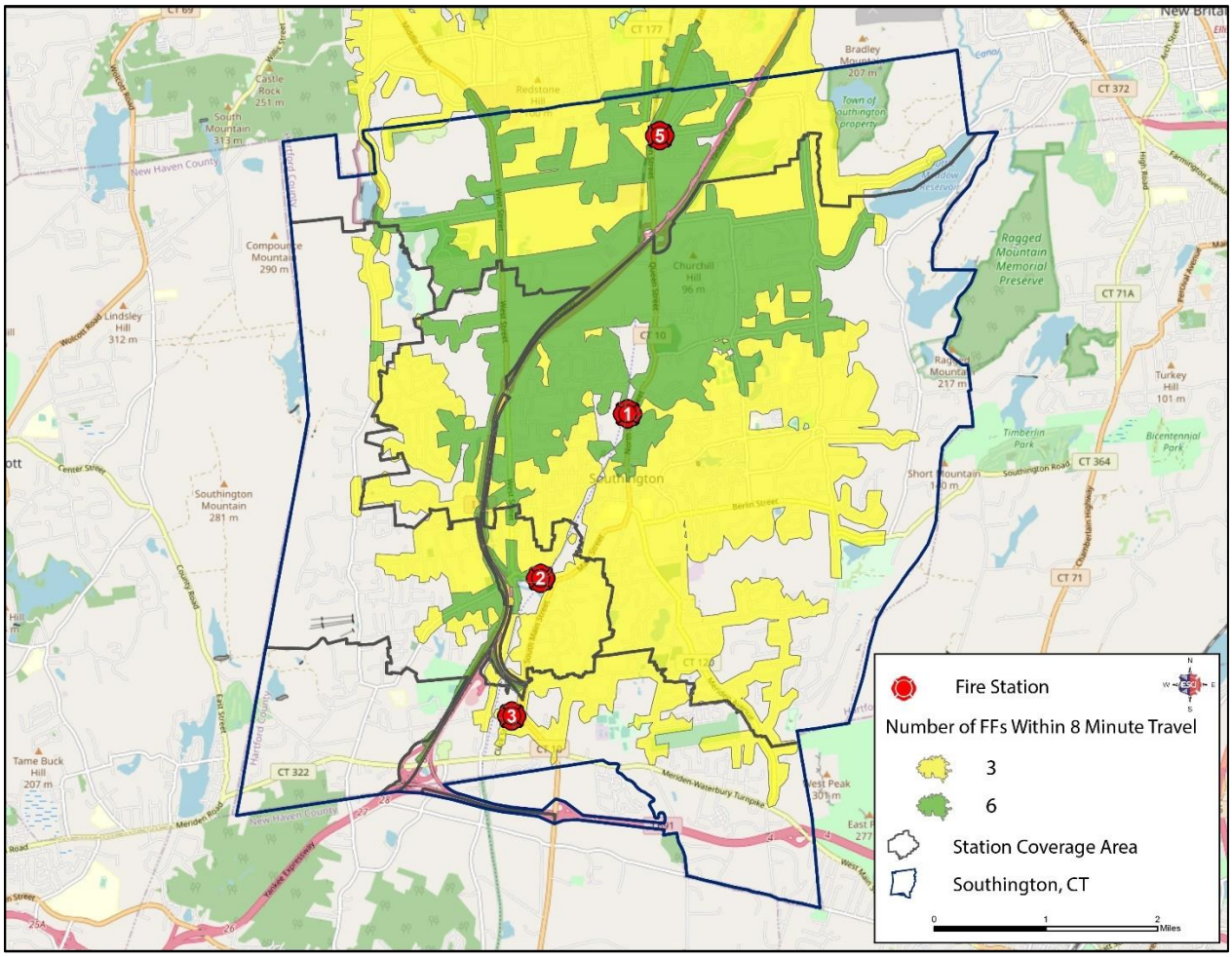
Resource Concentration Study

While most responses within Southington are typically handled by one to two units, some incidents require large numbers of resources and personnel to mitigate the emergency condition and reduce loss safely and effectively. The ability of the Southington Fire Department to effectively deploy multiple units to an incident scene within a timely manner will often make the difference between minor damage and a total loss.

NFPA 1710 requires that for moderate risk incidents or greater, such as a fire in a 2,000 square foot residential dwelling, the balance of needed resources (a total of 16-17 firefighters) arrive at the scene within an 8-minute travel time. To achieve this, the concentration of Southington's resources was evaluated to determine how the spacing of multiple resources (the response apparatus within their respective fire stations) are arranged so that an initial Effective Response Force (ERF) can arrive on scene within the time frames outlined in the on-scene performance expectations. An effective response force is defined as "the minimum amount of staffing and equipment that must reach a specific emergency zone location within a maximum prescribed total response time and is capable of initial fire suppression, EMS, and/or mitigation. The ERF is the result of the critical tasking analysis conducted as part of a community risk assessment."

To determine Southington Fire Department's ability to assemble an effective response force, GIS software was used to overlay the daily minimum staffing at the staffed fire stations within 8-minute travel areas, then add the totals. Unstaffed stations were not included because the minimum staffing levels at these locations are not included following NFPA 1710. The results are shown in Figure 113, the analysis presumes all units are available and in quarters with each unit's minimum staffing present. As some number of units will most likely be committed to another incident at any given time, this figure provides a best-case scenario.

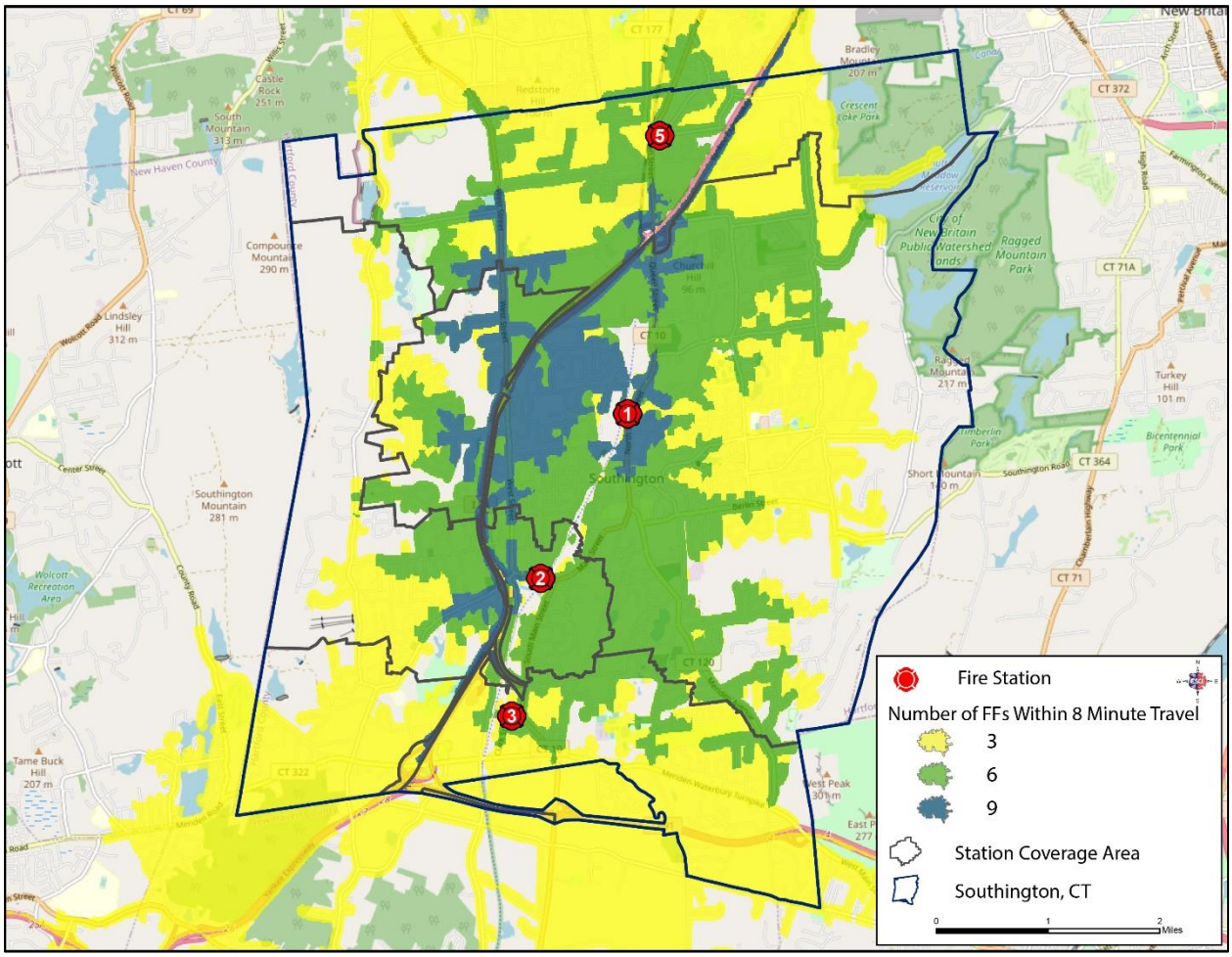
Figure 113. NFPA 1710 Effective Response Force



Staffing a minimum of 6 firefighters, Southington does not possess the capability to assemble an effective response force within the timeframe provided by NFPA 1710. They may have the capability to do so after a longer period of time, but even with the limited resources and 3-person crews, entry into a working fire is not possible for a period of greater than 8 minutes for the majority of the town.

To provide a comparison of the impact of staffed fire stations, an additional analysis was completed to show the impact of staffing Station 3, which will occur on June 1, 2022. Firefighters will staff Station 3 on weekdays from approximately 9 AM to 5 PM each day. Although this still does not meet NFPA 1710, the improvement to overall response capabilities is clear.

Figure 114. NFPA 1710 Effective Response Force with Station 3 Staffed

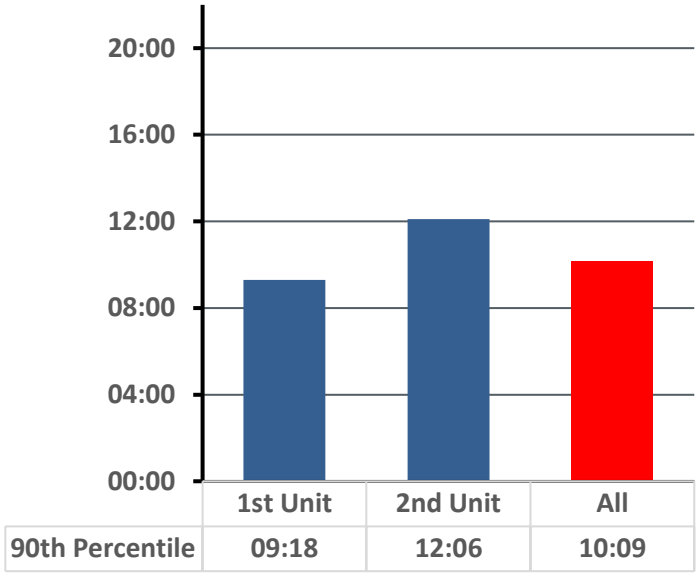


With firefighters staffing Station 3, nearly all areas of Southington fall within an eight-minute travel time and staffing is increased 50% along the interstate and core of the Town. Finally, although this analysis assumes that all units are available and in quarters, should a unit be committed at the time of a moderate risk or greater event, the ability of Southington Fire Department to muster resources improves dramatically.

Structure Fire Order of Arrival

The final time performance measure illustrates the measurement of time it takes for multiple apparatus to arrive on the scene of structure fires. While initial units can begin firefighting operations, additional personnel and apparatus are needed to safely mitigate the incident. The figure below illustrates the time measures for arrival of additional units. This analysis was limited to the combined career/volunteer data sets as described earlier.

Figure 115. Southington Fire Department Structure Fire Order of Arrival, 2017–2019



	1st Unit	2nd Unit	All
90th Percentile	09:18	12:06	10:09

As illustrated by the previous two figures, Southington Fire Department's ability to assemble the resources required to initiate an interior fire attack are limited by both staffing levels and travel time. Southington may consider increasing apparatus staffing to a minimum of 4 firefighters. This will allow first arriving crews to initiate interior attack and improve the likelihood of positive mitigation outcomes for fire suppression.

Response Reliability Review

The fourth component of service delivery—response reliability—analyzes two areas that can have a significant impact on the ability of the department to respond to calls for service. These two areas of response reliability are workload and call concurrency.

Workload (Unit Hour Utilization)

Workload is a measurement of the amount of work incurred by each crew assigned to a unit. While this may be measured based on the number of incidents to which a unit responds, there is greater value in measuring the amount of time spent on calls by that crew. This measurement of time spent on calls is referred to as unit hour utilization (UHU) and represents the percentage of time a unit is assigned to response activities as compared to the total time the unit was in service.

While there are limited formal performance measures to use as a target measure, in May 2016, Henrico County (VA) Division of Fire published an article after studying their department's EMS workload.[23] As a result of the study, Henrico County Division of Fire developed a general commitment factor scale for their department. The next figure is a summary of the findings as it relates to commitment factors.

Figure 116. Commitment Factors as Developed by Henrico County (VA) Division, 2016

Factor	Indication	Description
16%-24%	Ideal Commitment Range	Personnel can maintain training requirements and physical fitness and can consistently achieve response time benchmarks. Units are available to the community more than 75% of the day.
25%	System Stress	Community availability and unit sustainability are not questioned. First-due units are responding to their assigned community 75% of the time, and response benchmarks are rarely missed.
26%-29%	Evaluation Range	The community served will experience delayed incident responses. Just under 30% of the day, first-due ambulances are unavailable; thus, neighboring responders will likely exceed goals.
30%	"Line in the Sand"	Not Sustainable: Commitment Threshold—community has less than a 70% chance of timely emergency service and immediate relief is vital. Personnel assigned to units at or exceeding 0.3 may show signs of fatigue and burnout and may be at increased risk of errors. Required training and physical fitness sessions are not consistently completed.

To track UHU and crew activity rates successfully, crews must be consistently assigned to a unit designation, whether the crew is physically operating a particular piece of equipment or not. Additionally, the software used to track these crews must be capable of consolidating a particular crew in a particular station and calculating the time committed to response as opposed to simply tracking the amount of time that a particular piece of equipment was used, which is accomplished with an hour meter for maintenance purposes. In combination systems, the cross staffing of units is common and without a methodology in place to track crew activity levels, this important metric is difficult to obtain. Southington Fire Department is in the process of transitioning to a new records management system, ESO, that will allow the department to accomplish this task. Currently, the new software is scheduled to go online in early 2022.

[23] How Busy Is Busy?; Retrieved from https://www.fireengineering.com/articles/print/volume-169/issue-5/departments/fireems/how-busy-is-busy.html

Crews with activity rates greater than 10% will experience a decline when calculating performance because they are responding to less than 90% of incidents within their district. The additional calls for service must then be answered by crews in other districts and these responding crews will have greater travel times than if the unit within its respective zone was available. Additionally, most firefighters must complete monthly training requirements, have ancillary responsibilities, and must also perform daily equipment and facility checks and maintenance. As demands for service for a particular unit increase, the time available for these other tasks diminishes.

Southington Fire Department should continue to collect, monitor, and improve its data collection capabilities, which will allow data quality to increase and enhance their ability to make data driven decisions.

Call Concurrency

Call concurrency is the comparison as to how often multiple calls for service are occurring at the same time. As additional calls for service occur while units are still assigned to other incidents, the ability of the department to respond may be impacted. This is also useful data to consider when working with neighboring agencies to develop mutual aid and automatic aid agreements which may increase the ability to respond to those concurrent calls for service. Even though department resources—including the use of mutual aid and automatic aid agreements—may provide the units to respond, the mere fact that these units may be responding from outside of the primary zone in which the incident is located may result in more lengthy response times.

While there is no specific standard to which Southington Fire Department may be compared, the figure below illustrates the call concurrency over the study period. As illustrated, the vast majority of incidents occur as either a single incident or at the same time as a second incident with only an average of 2.96% of incidents occurring beyond the two concurrent incidents.

Figure 117. Southington Fire Department Call Concurrency 2016–2019

Concurrent Incidents in Progress	2016	2017	2018	2019	Change Over Study Period
Single Incident	85.84%	80.90%	82.37%	82.21%	6.11%
Two Incidents	11.95%	15.54%	14.83%	14.54%	-23.10%
Three Incidents	1.73%	2.86%	2.54%	2.20%	-39.70%
Four Incidents	0.38%	0.52%	0.26%	0.93%	-26.30%
Five Incidents	0.10%	0.13%	0.00%	0.13%	-26.30%
More than Five Incidents	0.00%	0.04%	0.00%	0.00%	0.00%

Response Performance Summary

Citizens and elected officials often look are response performance as one of the most visible components of service delivery to the community. More specifically, they wish to know how quickly the department arrives on scene to provide service. This section will illustrate various standard time performance measures as it relates to service delivery.

In analyzing response performance, ESCI generates percentile measurements of response time performance. The use of percentile measurement using the components of response time follows the recommendations of industry best practices. The best practices are derived by the Center for Public Safety Excellence (CPSE), Standard of Cover document, and the *National Fire Protection Association (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*.

The "average" measure is a commonly used descriptive statistic also called the mean of a data set. The most important reason for not using the average for performance standards is that it may not accurately reflect the performance for the entire data set and may be skewed by outliers, especially in small data sets. One extremely good or bad value can skew the average for the entire data set.

The "median" measure is another acceptable method of analyzing performance. This method identifies the value at the middle of a data set and thus tends to not be as strongly influenced by data outliers.

Percentile measurements are a better measure of performance because they show that most of the data set has achieved a particular level of performance. The 90th percentile means that 10% of the values are greater than the value stated, and all other data are at or below this level. This can be compared to the desired performance objective to determine the degree of success in achieving the goal.

As this report progresses through the performance analysis, it is important to keep in mind that each component of response performance is not cumulative. Each is analyzed as an individual component, and the point at which the fractile percentile is calculated exists in a set of data unto itself.

The *response time continuum*—the time between when the caller dials 911 and when assistance arrives—is comprised of several components:

- *Call Processing Time*—The time between a dispatcher getting the call and the resources being dispatched.
- *Turnout Time*—The time between unit notification of the incident and when they are responding.
- *Travel Time*—The time the responding unit spends on the road to the incident
- *Response Time*—A combination of turnout time and travel time, the most commonly used measure of fire department response performance.
- *Total Response Time*—The time from when the 911 call is answered until the dispatched unit arrives on the scene.

Total response time is the amount of time a resident or business waits for resources to arrive at the scene of an emergency beginning when they first placed a 911 call. This process begins for the fire department once the appropriate unit is dispatched by the communications center. The NFPA standard for alarm handling and call processing is derived from *NFPA 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems* and provides for communication centers to have alarm handling time of not more than 15 seconds, 90 percent of the time and not more than 20 seconds, 95 percent of the time. Additionally, NFPA 1221 requires the processing of the call to occur within 64 seconds, 90 percent of the time for high-priority incidents. Similarly, NFPA 1710 requires the call processing time to be 60 seconds or less, 90 percent of the time, as does ISO.

Figure 118. NFPA 1710 Standards for Fire/EMS Responses

Response Interval	NFPA/CFAI Recommendations
Call Processing	64 seconds or less at 90% 90 seconds or less at 90% (EMS)
Turnout Time	60 seconds or less at 90% 80 seconds or less at 90% (Fire/Special Operations)
Travel Time	240 seconds

Tracking the individual components of response time enables jurisdictions to identify deficiencies and areas for improvement. In addition, knowledge of current performance for the components listed above; is an essential element of developing response goals and standards that are relevant and achievable. Fire service best practice documents recommend that fire jurisdictions monitor and report the components of total response time.

ESCI worked closely with department leadership to achieve the most accurate data set for the following analysis of time measures. It was determined that 2018 and 2019 were the data sets with the most accurate information for this purpose. The following steps were utilized to establish the overall data set for analysis.

- All units except the following were removed from the data.
  - Career
    - E11
    - L1
    - SQ1
    - SQ5
    - R1
    - C3
  - Volunteer
    - E12
    - E21
    - E22
    - E31

- The first received dispatch time was applied to all incident numbers on all rows to eliminate the dispatch time issue associated with the time stamp for volunteer units not being recorded until they advise they are responding.
- The datasets were broken into career and volunteer units.
- The fastest time was calculated for each metric (turnout, arrival, etc.) and the dataset reduced to single incident.
- Only NFIRS 100, 200, 300, 400, and 700 calls were included to try to capture true emergency response calls.

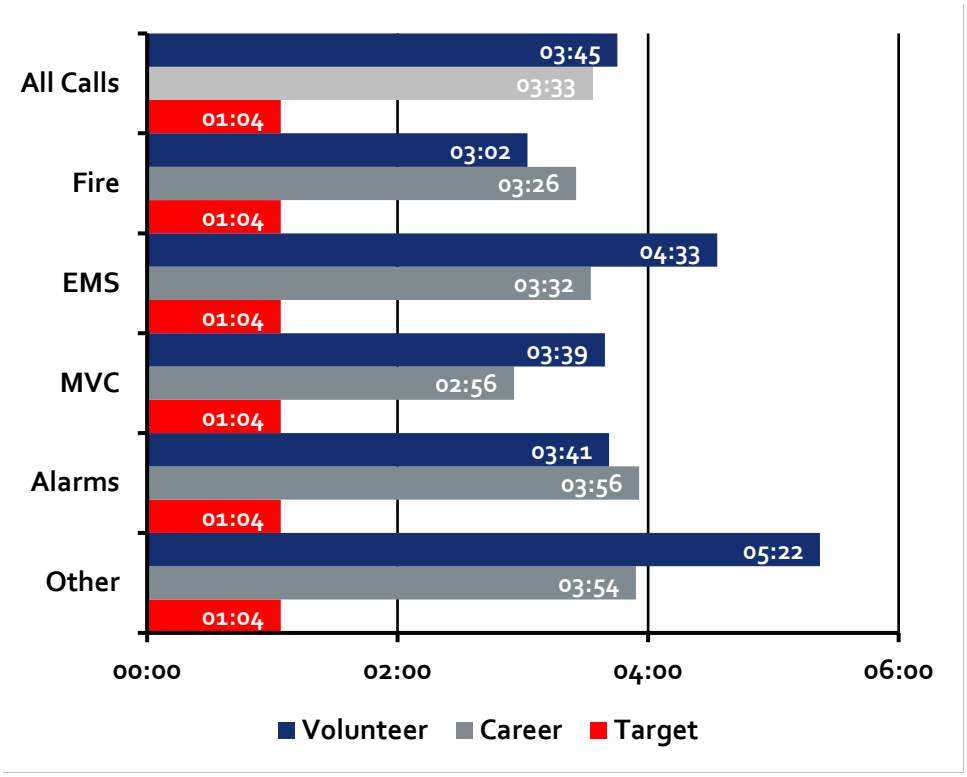
ESCI recommends that Southington Fire Department leadership work to establish processes that provide a more accurate data set for their continued analysis of various measures. Some elements to consider in establishing these processes are:

- Document within the NFIRS reporting system the response priority for each unit.
- Document the accurate dispatched time for all units as the time actually notified of the incident.
- Establish a link between the computer aid dispatch (CAD) software and the NFIRS reporting system to document the CAD incident number and latitude/longitude within the NFIRS reporting software.

Call Processing Time Performance

The primary public safety answering point (PSAP) for Southington, CT is under the direction of the Town of Southington Police Department. While not under direct control of the fire department, Southington Fire Department leadership should work closely with Southington Police Department leadership to monitor system performance and implement improvements as needed. In analyzing the call processing time performance, ESCI calculated the time difference between alarm date/time and notified date/time. As shown in the following figure, Southington Fire Department performance for this measure on all incidents was 3 minutes, 33 seconds for career units and 3 minutes, 45 seconds for volunteer units. Both are greater than three times the expected measure. ESCI recommends that Southington Fire Department leadership coordinate with Southington Police Department leadership to verify the data provided for this analysis and work together to develop steps to improve performance to meet the 1 minute, 4 seconds target measure.

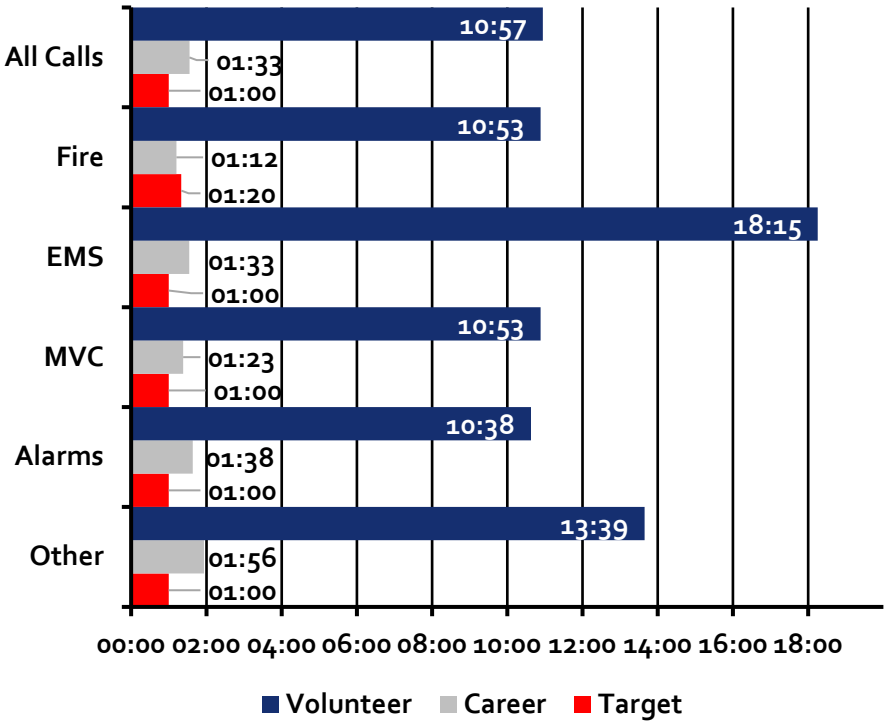
Figure 119. Southington Fire Department Call Processing Time Performance, 2018–2019



Turnout Time Performance

The first component of the overall response time continuum that is under direct control of the fire department is turnout time performance—sometimes referred to as reaction time. This time measure represents how quickly personnel react to the notification of the incident, board the apparatus and begin responding. NFPA 1710 specifies that turnout time performance should be less than 60 seconds (01:00), measured at the 90th percentile for incidents other than fire and special operations. For those incidents, turnout time performance should be 1 minute, 20 seconds (1:20). As illustrated in the figure below, career units are close to meeting the standard with a performance of 1 minute, 33 seconds for all incidents. In contrast, volunteer units experience a much slower performance of 10 minutes, 57 seconds.

Figure 120. Southington Fire Department Turnout Time Performance, 2018–2019



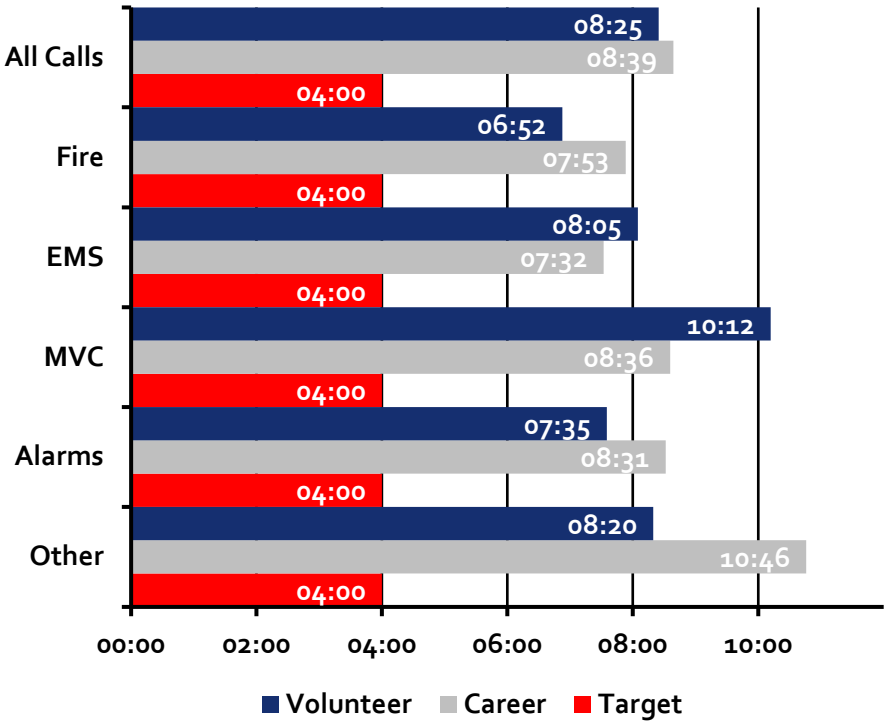
ESCI recommends that Southington Fire Department leadership research the various components associated with turnout time and consider implementation of changes where possible to improve performance.

- For stations where career units are housed, evaluation of notification systems, station design as it relates to personnel travel from the living quarters to the apparatus bays, door opening/closing devices and other factors that may slow the response of personnel should be considered.
- For volunteer units staffed by personnel responding to the station to respond the fire apparatus, evaluation of notification system and consideration of the ability to staff the station with volunteer or career personnel may be considered.

Travel Time Performance

Travel time is the measure of time it takes from the point of the apparatus beginning to respond and its arrival on the scene of the incident. Often, this is the longest component of the total response time as it is impacted by distance from the station to the incident, traffic, weather, school zones, and other factors. NFPA 1710 recommends a travel time of 4 minutes or less at the 90th percentile. This 4-minute target is based on the ability to take action at the scene which may reduce the extent of injury to patients or damage to property. As illustrated in the figure below, travel time performance for both career and volunteer units are 8 minutes, 39 seconds and 8 minutes, 25 seconds, respectively. It is reasonable that this time measure does not vary significantly between career and volunteer units as it is not impacted by how the units are staffed. The ability to improve this measure requires that leadership and policy makers to balance the cost of placing additional resources versus the benefit of the quicker response.

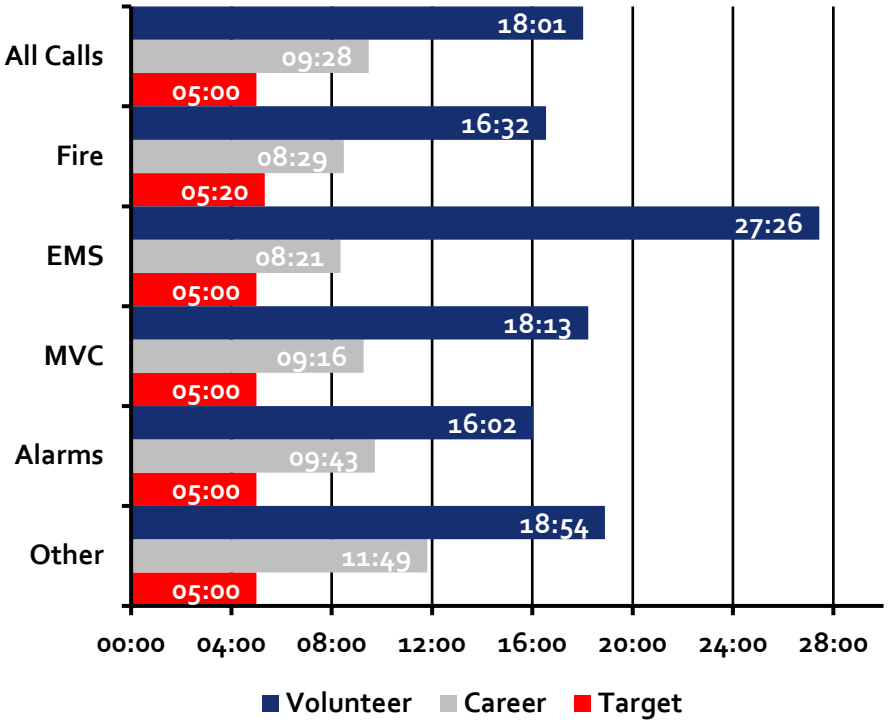
Figure 121. Southington Fire Department Travel Time Performance, 2018–2019



Response Time Performance

Response time performance is the first measure that combines two components of the response and represents the measure of time from the unit being dispatched until it arrives on scene of the incident. For many communities, this is the most often tracked and reported time performance measure as it is comprised solely of components that are directly under the control of the fire department. As illustrated in the figure below, response time performance for both career and volunteer units are 9 minutes, 28 seconds, and 18 minutes, 1 second, respectively. As this measure includes the turnout time component, there is a significant difference in performance between career units and volunteer units.

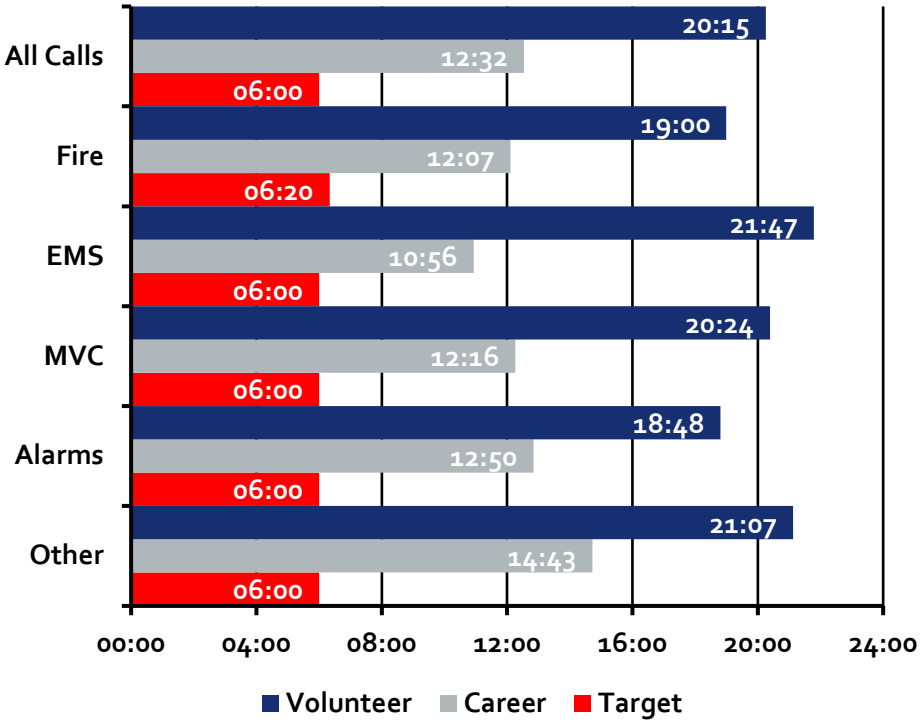
Figure 122. Southington Fire Department Response Time Performance, 2018–2019



Total Response Time Performance

When all components of the response continuum are combined, it results in total response time performance. This measure represents the measure of time between the citizen activating 911 and the arrival of the first unit at the scene of the incident. As illustrated in the figure below, total response time performance for both career and volunteer units are 12 minutes, 32 seconds and 20 minutes, 15 seconds, respectively. As this measure also includes the turnout time component, there is a significant difference in the performance of career units versus volunteer units.

Figure 123. Southington Fire Department Total Response Time Performance, 2018–2019



Mutual Aid Alarm Assignments

When a department has other agencies in the immediate vicinity of their jurisdiction, they also work closely with those other agencies to share resources. This sharing of resources generally occurs under the auspices of automatic aid or mutual aid agreements. Within these agreements, specific guidelines are established as to what level of personnel and resources will respond from jurisdiction to jurisdiction and how those resources are activated. The greatest advantage of these agreements is the provision of services to the citizens, regardless of jurisdictional boundaries. This allows for increasing personnel and resources to meet the effective response force for larger incidents as well providing additional units to respond when call concurrency exceeds the jurisdiction's capability of responding. The primary difference between mutual aid and automatic aid is the method in which resources are dispatched. In an automatic aid agreement, resources are automatically dispatched when circumstances meet predefined requirements in the agreement. In contrast, dispatch for mutual aid agreements generally does not occur until the primary jurisdiction for an incident reaches out and requests response.

The following figure lists the agreements between Southington Fire Department and neighboring agencies. These agencies are a mix of volunteer, career, and combination departments.

Figure 124. Southington Fire Department Mutual Aid Agencies

Agency	Agreement Type
Berlin Fire Department Headquarters	Mutual Aid
Bristol Fire Department Stations 1, 2, 3, 4 and 5	Mutual Aid
Cheshire Fire Department Stations 1, 2 and 3	Mutual Aid
East Berlin Fire Department Headquarters	Mutual Aid
Kensington Fire Department Headquarters	Mutual Aid
Meriden Fire Department Stations 1, 2, 3, 4, 5 and 6	Mutual Aid
New Britain Fire Department Stations 1, 2, 4, 5, 7 and 8	Mutual Aid
Plainville Fire Department Headquarters	Mutual Aid
South Kensington Fire Department Headquarters	Mutual Aid
Wolcott Fire Department Stations 1, 2 and 3	Mutual Aid

Future System Demand Projections

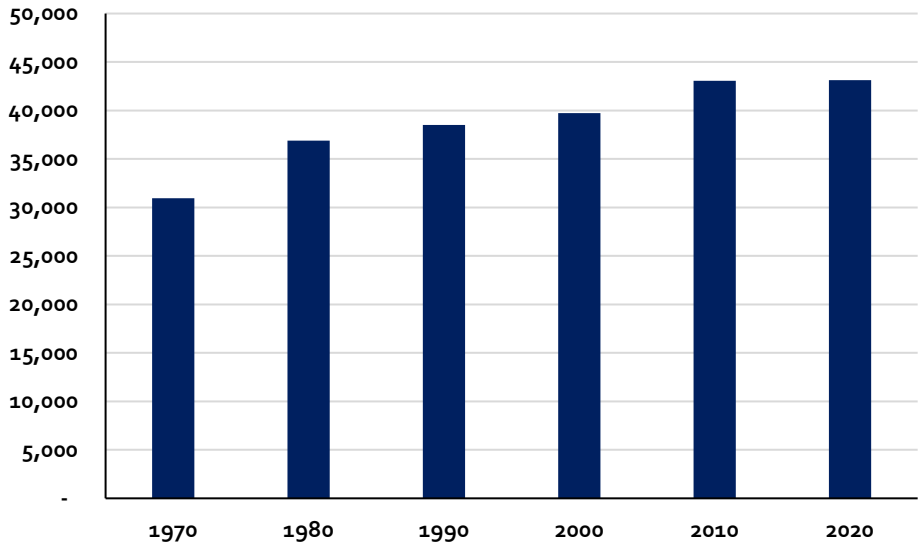
Population and Growth Projections

Understanding how the community is predicted to change in the future is an essential part of the planning process. Without some understanding of how Southington's current levels of service will be affected over time, today's capital purchase and staffing deployment plans may or may not be adequate in future years. The types and intensity of change, where change occurs, and the amount of time these changes occur within should all be considered in current planning and budgeting. In this section, future and projected development and their impact to population and demand for services are examined.

Population History

The population of Southington has remained stable and with incremental growth for the last 50 years. There has been a general trend decade to decade of increasing the population of the Town and the overall difference in population from 1970 until 2020 is approximately 12,184 or a 39.4% increase over the 50-year period. However, since 2010 the population of the Town appears to have capped and it is most likely that Southington will remain a suburban community with a population under 45,000 for the foreseeable future.

Figure 125. Southington Population (1970-2020)



Growth Projections

The U.S. Census Bureau collects and maintains population data for communities within the United States. In addition to the decennial census, the American Community Survey (ACS) provides annual updates of population estimates for communities. Over the last 10 years, the population of Southington has remained relatively unchanged and Census totals were used to provide the historical changes in population for the Town.

Connecticut Data Collaborative Population Growth Projections

The Connecticut Data Collaborative,[24] based out of Hartford, is a registered 501(c)(3) nonprofit organization striving to reduce access barriers to data to improve the population's ability to access and use data. As part of this project, Department of Public Health data was used to create population projections by Town out to the year 2040. The results of these projections are displayed below.

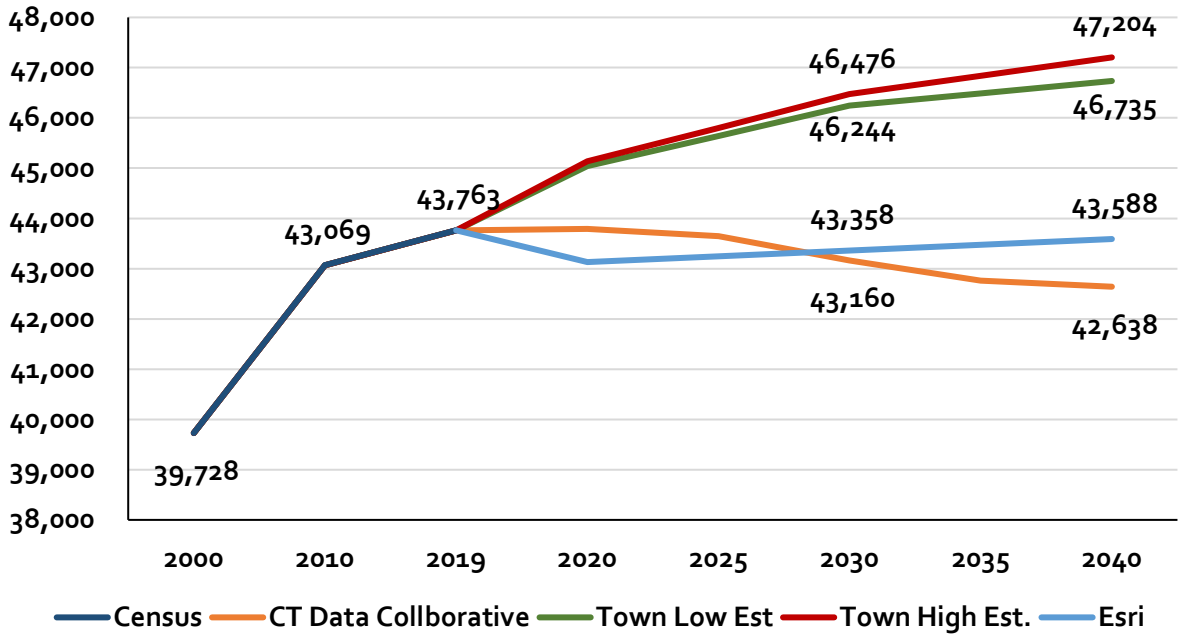
Esri Population Projections

The software firm Esri provides current population estimates and future projections as part of its proprietary software dataset, the Living Atlas. This dataset contains information from multiple areas, such as population and demographic information from the U.S. Census, as well as retail, insurance, crime, and spending data. Using the estimates provided by Esri for the Town's 2020 and 2025 population, a linear model was developed to project Southington's population out to 2040. While this model is more aggressive than the Connecticut Data Collaborative's at a 0.05% annual growth rate, it still reflects minimal growth across a 20-year period.

Town of Southington Projections

In 2016, the Town of Southington produced the Plan of Conservation and Development which contains the Town's internal population estimates to 2040. Within these estimates, a high and low range were projected and included with the results of the previous projections below.

Figure 126. Southington Population and Estimates (2010-2040)



[24] https://www.ctdata.org/

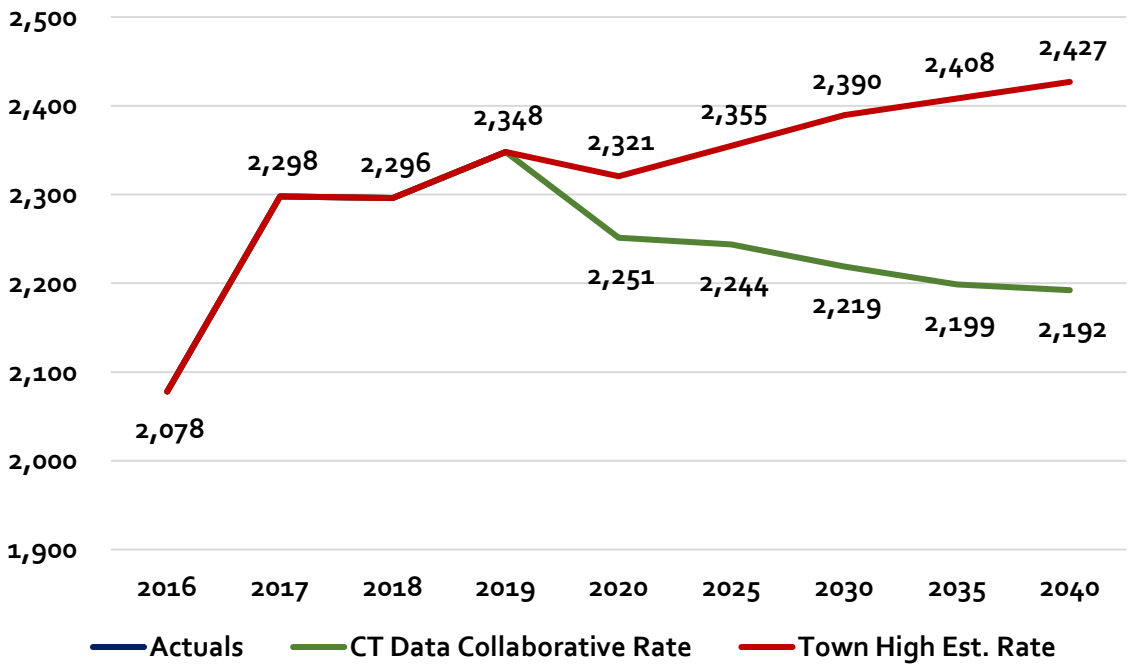
While it is impossible to know exactly what the population of the Town will be in 20 years, all indications suggest that it will remain much as it is today. The purpose for creating these estimates is to project how the future population of the Town will impact the delivery of fire suppression services.

Service Demand Projections

Several factors can influence the demand for fire and rescue services within a community. Population is often a key indicator as to how demand for services will change over time; however, other factors such as income, access to health insurance, age, and cultural background can influence a community's dependence upon these services.

Using the linear model and Census projections from Figure 126, a per capita rate was calculated for years 2016 through 2019 and an average per capita rate of 17.5 persons per fire rescue incident produced. Using the most aggressive population projection from the Town and the least optimistic model from the Connecticut Data Collaborative, the average per capita rate was applied and future service demand illustrated in Figure 127.

Figure 127. Projected Service Demand (2020-2040)



Service demand is projected to change gradually but remain relatively stable. While some variation must be anticipated, this model is based upon total annual service demand occurring from 2016 through 2019. Should at some point in the future the Town find that demand is exceeding responder capabilities, Southington may consider alternative approaches to service delivery and to mutual aid partners.

Establishment of Performance Objectives

There are three main factors the lead to successful mitigation of emergencies; sufficient numbers of well-trained *personnel,* arriving on reliable and well-equipped *apparatus* appropriate to the task at hand, *quickly enough* to make a positive difference in property preserved or lives saved.

The previous sections of this report have laid out the current staffing levels, facilities and equipment, and response performance for the Southington Fire Department. The following describes the consequences of failing to deliver sufficient personnel and equipment early enough to mitigate the emergency addressed.

Dynamics of Fire in Buildings

Most fires within buildings develop in a predictable fashion unless influenced by highly flammable material. Ignition, or the beginning of a fire, starts the sequence of events. It may take several minutes or even hours from the time of ignition until a flame is visible. This smoldering stage is very dangerous, especially during times when people are sleeping, since large amounts of highly toxic smoke may be generated during this phase.

Once flames do appear, the sequence continues rapidly. Combustible material adjacent to the flame heat and ignite, which in turn heats and ignites other adjacent materials if sufficient oxygen is present. As the objects burn, heated gases accumulate at the ceiling of the room. Some of the gases are flammable and highly toxic.

The spread of the fire from this point continues quickly. Soon the flammable gases at the ceiling as well as other combustible material in the room of origin reach ignition temperature. At that point, an event termed "flashover" occurs; the gases and other material ignite, which in turn ignites everything in the room. Once flashover occurs, damage caused by the fire is significant and the environment within the room can no longer support human life. Flashover usually occurs about five to eight minutes from the appearance of flames in typically furnished and ventilated buildings. Since flashover has such a dramatic influence on the outcome of a fire event, the goal of any fire agency is to apply water to a fire before flashover occurs.

Although modern codes tend to make fires in newer structures more infrequent, today's energy-efficient construction (designed to hold heat during the winter) also tends to confine the heat of a hostile fire. In addition, research has shown that modern furnishings generally ignite more quickly and burn hotter (due to synthetics). In the 1970s, scientists at the National Institute of Standards and Technology found that after a fire broke out, building occupants had about 17 minutes to escape before being overcome by heat and smoke. Today, that estimate is as short as three minutes.[25] The necessity of effective early warning (smoke alarms), early suppression (fire sprinklers), and firefighters arriving on the scene of a fire in the shortest span of time is more critical now than ever.

[25] National Institute of Standards and Technology, Performance of Home Smoke Alarms, Analysis of the Response of Several Available Technologies in Residential Fire Settings, Bukowski, Richard, et al.

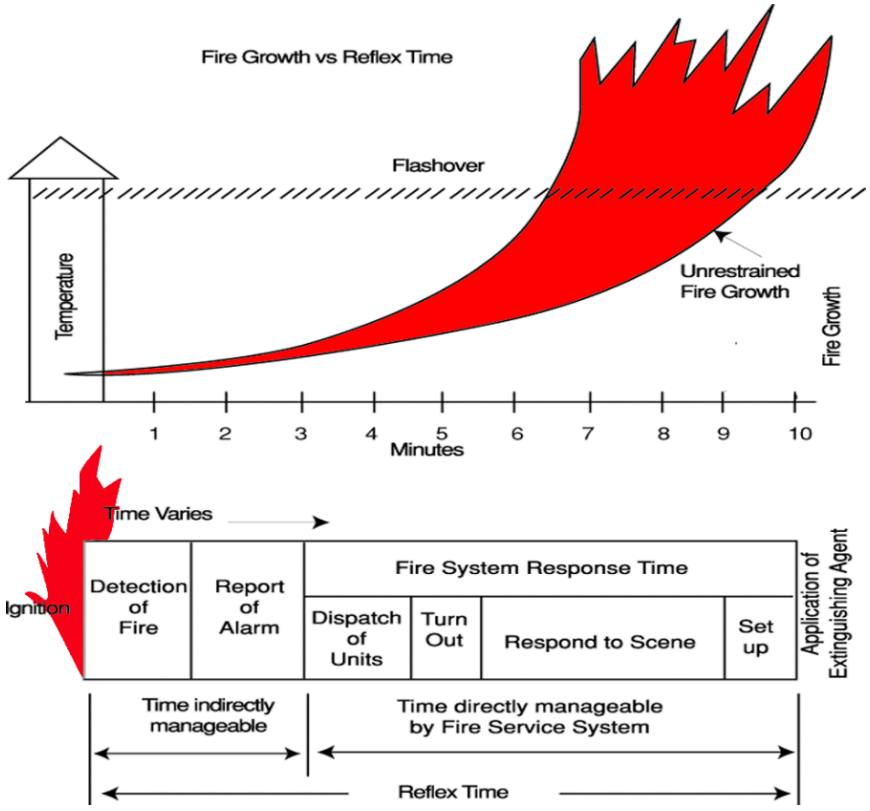
The prompt arrival of at least four personnel is critical for structure fires. Federal regulations (CFR 1910.120) require that personnel entering a building involved in fire must be in groups of two. Further, before personnel can enter a building to extinguish a fire, at least two personnel must be on scene and assigned to conduct search and rescue in case the fire attack crew becomes trapped. This is referred to as the two-in, two-out rule. However, if it is *known* that victims are trapped inside the building, a rescue attempt can be performed without additional personnel ready to intervene outside the structure. Further, there is no requirement that all four arrive on the same response vehicle. Many fire departments rely on more than one unit arriving to initiate interior fire attack.

Perhaps as important as preventing flashover is the need to control a fire before it does damage to the structural framing of a building. Materials used to construct buildings today are often less fire-resistive than the heavy structural skeletons of older frame buildings. Roof trusses and floor joists are commonly made with lighter materials that are more easily weakened by the effects of fire. "Light weight" roof trusses fail after five to seven minutes of direct flame impingement. Plywood I-beam joists can fail after as little as three minutes of flame contact. This creates a dangerous environment for firefighters.

In addition, the contents of buildings today have a much greater potential for heat production than in the past. The widespread use of plastics in furnishings and other building contents rapidly accelerates fire spread and increases the amount of water needed to effectively control a fire. All these factors make the need for early application of water essential to a successful fire outcome.

The next figure illustrates the sequence of events during the growth of a structure fire over time.

Figure 128. Fire Growth vs. Reflex Time



As is apparent by this description of the sequence of events, the application of water in time to prevent flashover is a serious challenge for any fire department. It is critical, though, as studies of historical fire losses can demonstrate.

The National Fire Protection Association found that fires contained to the room of origin (typically extinguished prior to or immediately following flashover) had significantly lower rates of death, injury, and property loss when compared to fires that had an opportunity to spread beyond the room of origin (typically extinguished post-flashover). As evidenced in the following figure, fire losses, casualties, and deaths rise significantly as the extent of fire damage increases.

Figure 129. Fire Extension in Residential Structures, United States, 2011–2015

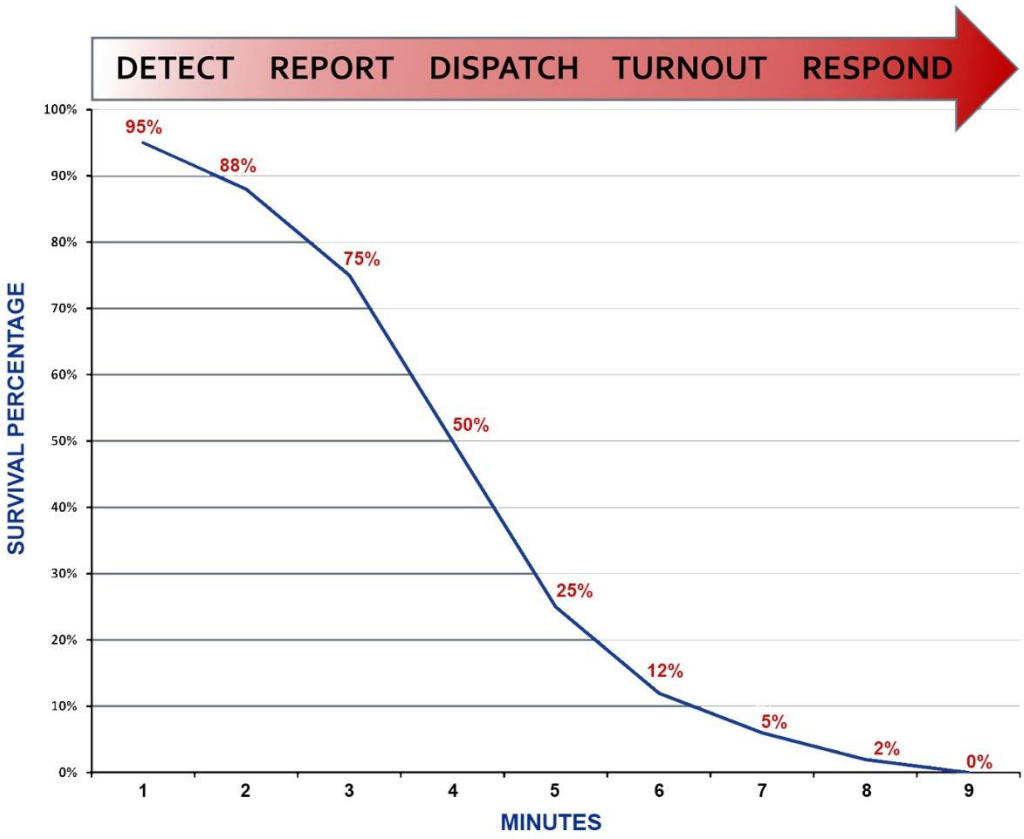
Fire Extension	Rates per 1,000 Fires		
	Civilian Deaths	Civilian Injuries	Average Dollar Loss Per Fire
Confined to room of origin or smaller	1.8	24.8	$4,200
Confined to floor of origin	15.8	81.4	$36,300
Confined to building of origin or larger	24.0	57.6	$67,600

Source: National Fire Protection Association

Emergency Medical Event Sequence

Cardiac arrest is the most significant life-threatening medical event in emergency medicine today. A victim of cardiac arrest has mere minutes in which to receive lifesaving care if there is to be any hope for resuscitation. The American Heart Association (AHA) issued a set of cardiopulmonary resuscitation guidelines designed to streamline emergency procedures for heart attack victims, and to increase the likelihood of survival. The AHA guidelines include goals for the application of cardiac defibrillation to cardiac arrest victims. Cardiac arrest survival chances fall by 7 to 10% for every minute between collapse and defibrillation. Consequently, the AHA recommends cardiac defibrillation within five minutes of cardiac arrest. As with fires, the sequence of events that lead to emergency cardiac care can be graphically illustrated, as in the following figure.

Figure 130. Cardiac Arrest Event Sequence



The percentage of opportunity for recovery from cardiac arrest drops quickly as time progresses. The stages of medical response are very similar to the components described for a fire response. Recent research stresses the importance of rapid cardiac defibrillation and administration of certain medications as a means of improving the opportunity for successful resuscitation and survival.

People, Tools, and Time

Time matters a great deal in the achievement of an effective outcome to an emergency event. Time, however, is not the only factor. Delivering sufficient numbers of properly trained, appropriately equipped personnel within the critical time period completes the equation.

For medical emergencies this can vary based on the nature of the emergency. Many medical emergencies are not time critical. However, for serious trauma, cardiac arrest, or conditions that may lead to cardiac arrest, a rapid response is essential. Equally critical is delivering enough personnel to the scene to perform all of the concurrent tasks required to deliver quality emergency care. For a cardiac arrest, this can be up to six personnel; two to perform CPR, two to set up and operate advanced medical equipment, one to record the actions taken by emergency care workers, and one to direct patient care. Thus, for a medical emergency, the real test of performance is the time it takes to provide the personnel and equipment needed to deal effectively with the patient's condition, not necessarily the time it takes for the first person to arrive.

Critical Tasks, Risk, and Staffing Performance

The goal of any fire service organization is to provide adequate resources within a period of time to reasonably mitigate an emergency event. However, all emergency events inherently carry their own set of special circumstances and will require varying levels of staffing based upon factors surrounding the incident. Properties with high fire risk often require greater numbers of personnel and apparatus to effectively mitigate the fire emergency. Staffing and deployment decisions should be made with consideration of the level of risk involved. Common risk categories used in the fire service are:

- **Low Risk**: Areas and properties used for agricultural purposes, open space, low-density residential, and other low intensity uses.
- **Moderate Risk**: Areas and properties used for medium density single family residences, small commercial and offices uses, low intensity retail sales, and equivalently sized business activities.
- **High Risk**: Higher density businesses and structures, mixed use areas, high density residential, industrial, warehousing, and large mercantile structures.

Fire emergencies are even more resource critical. Again, the true test of performance is the time it takes to deliver sufficient personnel to initiate the application of water to a fire. This is the only practical method to reverse the continuing internal temperature increases and ultimately prevent flashover. The arrival of one person with a portable radio does not provide fire intervention capability and should not be counted as "arrival" by the fire department. The *Management and Staffing* section of this report detailed the NFPA 1710 critical tasks expected to be performed by firefighters concurrently, referred to as the "effective response force" (ERF) and compared that to the number of Southington firefighters that are initially deployed for structure fires.

Response Time Performance Objectives

To initiate the process of developing performance objectives, several items must be considered. Although the specific information needed to complete this process will vary with each organization, the following items will generally need to be addressed during this process. Historical call data must be collected and analyzed to determine current performance baselines and identify any gaps in data required; response zones must be established based on agreed-upon criteria (i.e., population zones, geographic boundaries, etc.); and benchmarks established as goals for these demand zones.

Current Response Goals

ESCI emphasizes the importance of establishing and regularly monitoring performance metrics for the deployment of resources. These metrics serve as the foundation for determining whether the organization is meeting the expectations of the community that it serves. Without regular and consistent performance evaluation, it is impossible to set and achieve goals established to meet community expectations.

Response standards established by the department must originate from the community served to create a balance between what is desired and what can be afforded. Because of this, ESCI cannot establish

baseline and benchmark performance metrics for a given organization. However, recommendations based upon the analysis conducted throughout this report may be helpful in serving as a starting point for these discussions with the community served or may serve as a reevaluation tool for the organization's current standards.

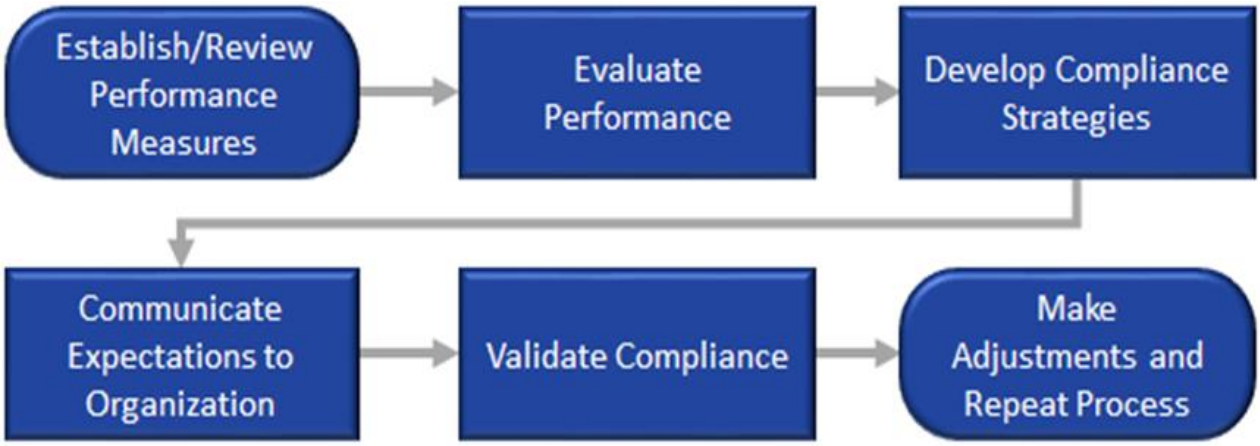
Response standards are individual to each organization. Multiple factors such as staffing, financial constraints, size of the service area, and political will influence each department's ability to set achievable goals and objectives for response.

Overview of Compliance Methodology

For this analysis to prove beneficial to the community, the department, and the city's policymakers, the Southington Fire Department should continually and routinely analyze performance data.

Compliance is best achieved through a systematic approach. ESCI suggests the following six-step compliance model.

Figure 131. Six-Step Compliance Model



Phases of the Compliance Model

Phase 1—Establish/Review Performance Measures

Conduct a full review of the performance measures at least every five years:

- Identify services provided.
- Define levels of service.
- Categorize levels of risk.
- Develop performance objectives and measures.

Phase 2—Evaluate Performance

Performance measures are applied to actual service provided:

- System level.
- First-Due Area level.
- Unit level.
- Full Effective Response Force (ERF).

Phase 3—Develop Compliance Strategies

Determine issues and opportunities:

- Determine what needs to be done to close the gaps.
- Determine if resources can/should be reallocated.
- Seek alternative methods to provide service at desired level.
- Develop budget estimates, as necessary.
- Seek additional funding commitment, as necessary.

Phase 4—Communicate Expectations to Organizations

Communicate expectations:

- Explain method of measuring compliance to personnel who are expected to perform services.
- Provide feedback mechanisms.
- Define consequences of noncompliance.
- Train personnel:
- Provide appropriate levels of training/direction for all affected personnel.
- Communicate consequences of noncompliance.
- Modify (remediate) business processes, business application systems, and technical infrastructure as necessary to comply.

Phase 5—Validate Compliance

Develop and deploy verification tools and/or techniques that can be used by sub-sections of the organization on an ongoing basis to verify that they are meeting the requirements:

- Monthly evaluation.
  - Performance by unit.
  - Overall performance.
  - Review of performance by division/section management.
- Quarterly evaluation.
  - Performance by unit.
  - Performance by first-due.
  - Overall performance.
  - Review of performance by executive management.

Phase 6—Make Adjustments/Repeat Process

Review changes to ensure that service levels have been maintained or improved. Develop and implement a review program to ensure ongoing compliance:

- Annual review and evaluation.
  - Performance by unit.
  - Performance by first-due.
  - Overall performance.
- Review of performance by governing body.
- Adjustment of performance standards by governing body, as necessary.
- Adoption of performance measures by Governing Body.
- Establish management processes to deal with future changes in the service area.

Long-Term Opportunities & Short-Term Recommendations

ESCI has identified six major Long-Term *Opportunities* that should become part of the foundation for the future success of the Southington Fire Department. Within each of identified Long-Term Opportunities, ESCI has further identified multiple specific Short-Term *Recommendations* that could be implemented to capitalize on the *Opportunity*.

Opportunity #1: Agency Management & Organization

Recommendation 1.1: It is imperative that the Southington Fire Department determine its current identity.

This report detailed the difference between "combination" and "dual" fire departments. A combination fire department is one where career and volunteer firefighters are "combined" into a single system to provide fire and emergency response to the community. A "dual" fire department is one in which career firefighters are segregated from volunteer firefighters and there is little cooperation and integration between the two. Although Southington Fire Department's administrative team supports the volunteers and is working to restore continuity within the department as a combination system, the fact that firefighters have developed individual perceptions over time regarding their role within the department makes this an issue that must be addressed.

Within the *Management Components* section of this report, ESCI highlighted the importance of establishing a current mission statement, values statement, and organizational values. As part of this process, it is imperative for the Southington Fire Department to determine its current and future identity. As the fire department is a dynamic environment, the Southington Fire Department will need to regularly evaluate, potentially update, and then reaffirm its mission statement, vision statement, and organizational values. The exercise of evaluating, updating, and reaffirming is necessary to ensure that limited resources are appropriately deployed to satisfy the priorities of the department. It is imperative that all levels of the organization, from the newest firefighter to the town's elected officials, understand the mission and priorities of the department so that decisions made at all levels possess the same focus and priorities.

Recommendation 1.2: Once the Southington Fire Department establishes its identity, it must then brand itself.

A brand is a product, service, or concept that is publicly distinguished from other products, services, or concepts so that it can be easily communicated and marketed. Branding is particularly important if the Southington Fire Department continues to be staffed by both career and volunteer firefighters; this arrangement must be effectively communicated to the public and leveraged to recruit both new career and volunteer firefighters. The Southington Fire Department should consider developing a new marketing strategy.

Recommendation 1.3: Better-define the roles and the intersection of authority of the Fire Chief and Town Manager with the Board of Fire Commissioners, Board of Finance, and Town Council.

The Southington Fire Department is governed by more political boards and commissions than most fire departments due to the fact the town has a Board of Fire Commissioners, Board of Finance, and Town Council. There are five Fire Commissioners, six Board of Finance Members, and nine Town Council Members. This totals 20 elected officials who have varying levels of authority related to the fire department.

Feedback received by ESCI from Southington Fire Department members, both during in-person meetings and through the anonymous survey, identified politics as one of the major threats to the future success of the Southington Fire Department. With few exceptions, people who want to fight fires become firefighters and people who want to be involved politically run for elected office. Allowing politics to permeate the fire department will only detract from its mission.

Recommendation 1.4: Training should be provided at the start of the term and as needed for all elected officials to ensure that policy decisions and operational decisions are made by the appropriate individuals.

Within the Town of Southington, the governing bodies have elected and appointed administrative staff in the form of a Town Manager and Fire Chief. The purpose of these administrative professionals is to oversee the town and fire department's day-to-day operations, thus enabling elected officials to focus on big-picture policy issues. Elected officials collectively decide policy issues. Staff members are responsible for implementing that policy direction.

Recommendation 1.5: Evaluate, potentially update, and reaffirm the mission statement.

The exercise of evaluating, updating, and reaffirming is necessary to assure that when resources are limited, they are appropriately deployed to satisfy the priorities of the Southington Fire Department. It is imperative that all levels of the organization, from the newest firefighter to the town's elected officials, understand the mission and priorities of the organization so that decisions at all levels are made with the same focus and priorities.

Recommendation 1.6: Develop a vision statement for the Southington Fire Department.

A vision statement establishes the ideal image that the organization wishes to achieve. The vision statement should answer the questions "Where are we headed?" and "If we achieved all strategic goals, what would we look like 10 years from now?"

Recommendation 1.7: Develop organizational values for the Southington Fire Department.

An organizational values statement includes the core principles that guide the organization and its culture. In a values-led organization, the values guide decision-making and establish a standard against which actions can be assessed. The values statement should answer the questions "What values should

guide the operations of our organization?" and "What conduct should our personnel uphold?" The Organizational Values Statements should clearly identify the values that guide the operations of Southington Fire Department and are upheld by the Department's members.

Recommendation 1.8: Increase Administrative Staffing.

The Southington Fire Department staffs four full time administration positions. These positions include the Fire Chief, Assistant Chief/Fire Marshal, an executive assistant, and an administrative assistant. This represents 4.5% of the Department's total combined staffing of 88 positions (38 full-time positions and 50 volunteer). It is ESCI's experience that effective administrative staffing totals for municipal fire department operations typically range from 12 to 15% of agency totals. After reviewing the functions and responsibilities assigned to the workgroup, ESCI concluded that the number of full-time equivalents (FTEs) assigned resides in the extreme lower range of the normally experienced administrative levels to support the responsibilities of the Southington Fire Department's administration appropriately.

ESCI suggests that the Southington Fire Department would be well-served to staff a second Assistant Chief Position. The addition of this position could allow for an Administrative and an Operational Assistant Chief, thus better supporting the Fire Chief, improving the workload distribution, and making the positions of Fire Chief and Assistant Fire Chief more sustainable for the long term, thereby aiding in succession planning.

Recommendation 1.9. Correct the "JoinSFD.org" webpage.

ESCI noted that there is a link on the Fire Department's webpage titled "JoinSFD.org". When this link is clicked, there are options to select links for more information about becoming a volunteer firefighter, career firefighter, or CERT Member. At the time of this evaluation, the links to career firefighter and CERT Member information returned error messages. ESCI further noted that there were separate links on the website that went directly to the volunteer firefighter career firefighter and CERT member information without going through the JoinSFD.org. This could be confusing for members of the public who are interested in joining the fire department.

Recommendation 1.10: Continue to develop the Southington Fire Department social media presence.

An active social media presence will allow the Southington Fire Department to provide information to, and receive information from, its customers.

Recommendation 1.11: Evaluate the use of a survey tool to collect performance feedback of those citizens who have used the services of Southington Fire Department.

The gathering of information directly from these individuals will allow Department and Town leadership to key in on specific performance issues that allow for intervention in a timelier manner, as well as highlight those performance issues that customers indicate as being of high value.

Recommendation 1.12: Establish a Fire Department Safety Committee.

The Fire Department Safety Committee should be in alignment with Chapter 4 of NFPA 1500: *Standard on Fire Department Occupational Safety, Health, and Wellness Program*. The establishment and empowerment of a safety committee can be one of the best tools to increase the safety of firefighters.

The Fire Department Safety Committee should meet monthly and include in its mission the raising of awareness and modifying of member behaviors that will result in a safe work environment. Additionally, the committee should review all accidents, injuries, near-miss incidents, and workplace safety suggestions. The committee should analyze the information before them and report their findings to the Fire Chief.

In contrast to being reactionary through the development of additional rules, it is recommended that the committee should work to implement member safety education programs and encourage members' safety self-awareness. The committee should maintain regular and open meeting times and locations, and minutes of the meetings should be recorded and posted for all firefighters to review. ESCI underscores the importance of maintaining a functioning Safety Committee.

Recommendation 1.13: Modify the chain of command to include full tactical equality for all career and volunteer firefighters.

Successful combination fire departments implement full integration of career and volunteer firefighters at a tactical level. Tactical equality recognizes that all positions, from firefighter through senior fire officer, require formal training and education to meet the expected performance level.

Officer promotions should be based on certification, tenure, experience, and proficiencies in technical skills as well as soft skills, such as interpersonal communication. Tactical equality is achievable when a fire department provides performance-based, certifiable training and the opportunity for the volunteer and career firefighters to train at the same time. This establishes a respect for the rank and the achievement to obtain the position and less emphasis on whether it is filled by a volunteer or career member. Position and rank are not affected by time of day or the day of the week.

Recommendation 1.14: The Southington Fire Department should consider staffing a dedicated IT position.

Information Technology (IT) is a challenge within the Southington Fire Department. The fire department is currently supported by an IT position that is shared with the Police Department. Because of the demands placed on this position by the Police Department, the fire department often does not have the level of support that it needs in a timely manner. In recent years, the fire department has become increasingly more reliant on computers, laptops, and tablets for both routine and emergency operations and would benefit from a full-time dedicated IT position.

Opportunity #2: Staffing, Recruitment and Retention

Recommendation 2.1: Establish a joint labor management committee review the promotional process.

The joint labor management committee should evaluate the promotional process in its entirety to ensure that test components correlate to the current job descriptions and JPRs established by the national standard as they relate to the positions within the Southington Fire Department.

As the ultimate goal should be to ensure a defensible promotion process in the event of a legal challenge, ESCI also suggests that the Southington Fire Department re-evaluate the merits of including the civilian Board of Fire Commissioners within the promotional process.

It is ESCI's suggestion that the Southington Fire Department may improve the current promotional process by allowing the professional human resources and fire department personnel to conduct the entire process, thereby eliminating the potential political influence that could be introduced by the inclusion of the elected board.

Recommendation 2.2: Conduct reviews of current compensation structures, market competitiveness, and department compensation philosophies.

An agency's ability to attract, hire, and retain personnel has a direct impact on its ability to provide the desired services effectively and efficiently. The Southington Fire Department is no different. Agencies should provide periodic reviews of current compensation structures, market competitiveness, and department compensation philosophies. These internal and external comparisons of equitable positions and workloads ensure the agency can attract and maintain an effective workforce.

Recommendation 2.3: The Southington Fire Department should make it a priority to retain their active existing volunteer firefighters.

Considering that the cost per call of an existing firefighter who responded to 25% or more of the Southington Fire Department's calls in 2019 is 18.5% less than the cost of a new volunteer firefighter who responded to between 12.5 and 24% of Southington's calls for service in 2019, the Southington Fire Department should make it a priority to retain their active existing volunteer firefighters.

ESCI recommends that the Southington Fire Department make it a priority to not only recruit new members, but to also retain its existing volunteer members by researching programs and activities that will support current department's efforts to recruit and retain volunteer firefighters.

Recommendation 2.4: Establish participation requirements for volunteer firefighters to ensure that the town is not paying a higher cost per call for volunteer firefighters than it does for career firefighters.

When evaluating the cost of a volunteer firefighter compared to a career firefighter, ESCI used the total cost for an entry-level firefighter based on the 2019 salary and a 38% multiplier to the total cost accounted for employee benefits. ESCI notes that the cost of a career firefighter per call is actually less than the cost of a new volunteer firefighter who responded to between 12.5 and 24% of the calls for service in 2019. A new volunteer firefighter who responded to 25% or more of the calls for service in 2019 does provide a savings for the town compared to the salary of a career firefighter.

Recommendation 2.5: Review the medical evaluation program for compliance with NFPA 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments.

In addition to reviewing the medical program for compliance with NFPA 1582, the Southington Fire Department should consider emphasizing health and wellness programs for its first responders because of an increased risk for cardiovascular disease and certain types of cancer in the fire service. Prevention programs and health monitoring provide cost savings to fire organizations, reducing workers' compensation costs, sick leave/overtime hiring costs, and improves the overall mental and physical health and wellness of first responders.

Recommendation 2.6: Replace the height and weight requirements for career and volunteer firefighters with a periodic assessment under the supervision of the fire department health and fitness coordinator.

While height and weight requirements were once considered to be the primary measure of firefighter fitness, NFPA 1583, *Standard on Health-Related Fitness Programs for Fire Department Members* recommends a periodic assessment under the supervision of the fire department health and fitness coordinator.

ESCI noted that Article 29 of the 2018-2020 Contract between the Town of Southington and IAFF Local 2033 includes the following height and weight restrictions for career firefighters. These same requirements are listed at the top of the application to become a volunteer firefighter.

Figure 132. Firefighter Height and Weight Restrictions

ARTICLE 29
HEIGHT AND WEIGHT RESTRICTIONS

SECTION 1. All employees hired on or after November 16, 1989 must, as a condition of employment, not exceed the following maximum body weight for their height:

MALES:

5'4"	5'5"	5'6"	5'7"	5'8"	5'9"	5'10"	5'11"	6'0"	6'1"	6'2"
170	175	180	185	190	195	200	205	210	215	220

FEMALES:

5'3"	5'4"	5'5"	5'6"	5'7"	5'8"	5'9"	5'10"	5'11"	6'10"	6'11"
140	145	150	155	160	165	170	175	180	185	190

Maximum body weights for heights not listed above shall be extrapolated from the schedule at five (5) pounds per inch of height.

6.2 Fitness Assessment

6.2.1 All members shall be cleared annually for participation in the fitness assessment by the physician as directed by NFPA 1582.

6.2.2 If a member has an acute medical problem or a newly acquired chronic medical condition, the fitness assessment shall be postponed until that person has recovered from this condition and is cleared as is required by 6.2.1.*

6.3 Pre-Assessment Questionnaire. *The health and fitness coordinator shall administer to all members a pre-assessment questionnaire that seeks to identify contraindications for participation in the fitness assessment and department exercise program.*

6.4* Fitness Assessment Components. *The annual fitness assessments shall consist of the following components:*

(1) Aerobic capacity
(2) Body composition
(3) Muscular strength
(4) Muscular endurance
(5) Flexibility

Recommendation 2.7: Track and monitor the five "Indicators for Change" to identify trends that may lead to the need for additional career staffing.

The Volunteer and Combination Officers Section of the International Association of Fire Chiefs identified five "Indicators for Change" in its Red Ribbon Report. While there is no established rule about when a community should consider hiring additional paid firefighters, these Indicators do provide guidance for when a community should expect to increase paid staffing.

ESCI recommends that the Southington Fire Department begin automatically tracking the metrics listed below and monitoring them monthly to identify trends that may lead to the need for additional paid staffing.

Figure 133. Indicators For Change

IAFC Indicators for Change	Description
1. Community Growth	A history of community growth and projected increases in demand can help forecast and plan for changes in the delivery of emergency services.
2. Community Aging	A fire department's ability to recruit new members is in part dependent on the supply of new, younger people who can be tapped for service. A community's age profile can be an indicator of potential volunteer firefighter recruitment problems ahead.
3. Reduced Staffing	Units responding with fewer than the required number of people needed to perform that unit's functions pose a serious problem for the safety of citizens and the responders.
4. Extended Response Times	When units regularly fail to get out of the fire station in a timely manner because of inadequate staffing resources, the community is endangered and fire department managers have a reliability problem.
5. Missed Calls	When an emergency call goes unanswered, the fire department has a serious problem, not just because life and property are at stake, but also because it is a failure highly visible to the public.

Opportunity #3: Service Delivery Deployment and Documentation

Recommendation 3.1: All staffed engines and ladder trucks should have a minimum of four personnel.

The Southington Fire Department should work toward having a minimum of four personnel on all staffed engines and ladder trucks in accordance with NFPA 1710. The value of four-person staffing cannot be overstated. Four firefighters allow for a safer and more efficient delivery of fire suppression operations than is possible with only three firefighters. The town and department should make a commitment to adopting a minimum staffing policy using NFPA 1710 that guarantees at least four qualified members on each piece of apparatus for field operations.

Recommendation 3.2: Modify the Working Fire Protocol Declaration to ensure that adequate resources are dispatched to a working fire in a single-family home to initially respond at least 17 firefighters and that at least 28 firefighters are initially dispatched for working fires in strip malls and apartment buildings.

The Southington Fire Department uses a "Working Fire Protocol Declaration" to determine the mutual aid that will be requested for a working fire. ESCI understands that Southington volunteer firefighters are dispatched to working fires and may respond, but since there is no guarantee of a volunteer firefighter response, volunteers are not included in this calculation to illustrate the potential worst-case scenario of a working fire without any volunteer response.

Based on the current Working Fire Protocol Declaration, in order to achieve an effective fire fighting force of 17 firefighters for a single-family residence, Southington will require a second alarm response. To satisfy the ERF of 28 firefighters for a strip shopping center or an apartment building, Southington will require a third alarm response.

ESCI recommends that the Southington Fire Department modify its Working Fire Protocol Declaration to assure that those adequate resources are dispatched to a working fire in a single-family home to initially respond at least 17 firefighters and that at least 28 firefighters are initially dispatched for working fires in strip malls and apartment buildings.

Figure 134: Southington Fire Department Working Fire Declaration: Personnel On Scene

1st Alarm		2nd Alarm		3rd Alarm	
Department	**Staffing**	**Department**	**Staffing**	**Department**	**Staffing**
Southington	6	Southington	6	Southington	6
Bristol (North) or Meriden (South) for RIT	3	Meriden	3	Meriden	3
		Bristol	3	Bristol	3
		Plainville	3	Plainville	3
		Cheshire	3	Cheshire	3
		Kensington	3	Kensington	3
				New Britain	6
				Wolcott	3
Alarm Total	**9**		**19**		**30**

Recommendation 3.3: Conduct a risk assessment of adding a volunteer response to the highway for motor vehicle accidents and blocking ambulance/emergency medical services calls.

In the *Community Risk Assessment* section of this report, the using probability, consequence, and impact of an incident on the department's response system as the foundation for all risk assessments was detailed. Applying these principals, it should be the goal of the Southington Fire Department to safety deploy only the needed resources to safety and efficiently mitigate each emergency.

ESCI agrees with the current volunteer and still alarm responses with one exception: the Southington Fire Department should conduct a risk assessment of adding a volunteer response to the highway for motor vehicle accidents and blocking ambulance / emergency medical services calls. Highway calls pose significant risks for first responders, and while there is an added risk associated with adding additional resources to these calls, the benefits of using additional fire apparatus as "blockers" to protect the emergency responders on scene will likely outweigh that additional risk.

Recommendation 3.4: It would be in the best interest of the Town of Southington to consider pursuing the designation as the PSA holder for all levels of emergency medical service to ensure that it is positioned to react to the dynamic needs its community.

In 2014, Public Act 14-217 was passed which gave municipalities more control over who provides Emergency Medical Services in their town. The public act also reinforced the development of a Local EMS Plan (LEMSP). These plans are an important component of overall town planning and promote healthy business relationships between a municipality and the EMS organizations, at all levels, that provide emergency care to the residents and visitors of the town. OEMS developed a toolkit as a "best practices" approach to building an LEMSP.

The Town of Southington's LEMSP is due to be updated with the state by January 1, 2023. ESCI suggests that the Town of Southington may want to consider pursuing the designations as the PSA holder for all levels of service within the Town. The Town would still have the right to contract out the service but holding the PSA better-positions the municipality to control the delivery of emergency medical services within its boundaries.

There is no notion of competitiveness factored into the market for emergency medical calls within the current PSA System. Municipalities may contract with only the provider assigned to them to obtain better performance or higher level of service. Due to the methods of PSA assignment, this service cannot be bid on the open market. Additionally, PSA Holders could surrender a PSA at will if they no longer chose to provide the service. Should this happen within the Town of Southington at any point in the future, the town would be forced to identify an alternate method for the delivery of emergency medical services. As emergencies always start and end locally, it would be in the best interest of the Town of Southington to consider pursuing the designation as the PSA holder for all levels of service to ensure that it is positioned to react to the dynamic needs its community.

Recommendation 3.5: The Town of Southington should reevaluate all emergency medical response protocols to ensure that the closest appropriate response unit is dispatched to all emergency calls as triaged by Emergency Medical Dispatch Protocols.

ESCI noted during the site visit that while both the fire and police departments are both designated as Supplemental First Responders, that the fire department is not dispatched to many types of medical calls that should warrant an immediate response. This is particularly troublesome considering that firefighters in Southington are trained to the level of Emergency Medical Technician (150 hours of emergency medical training) while police officers are trained to the level of Emergency Medical Responder (60 hours of emergency medical training) and that even when fire department personnel are positioned geographically closer to a medical emergency than police personnel, the fire department personnel are often not dispatched.

The 2005 study "Paramedic Response Time: Does It Affect Patient Survival" by P.T. Pons[26] found that no significant difference was associated with an that no significant difference is associated with ambulance response times for traumatic injuries and cardiac events when comparing transports arriving in less than eight minutes versus response times of greater than eight minutes, but that there was a survival benefit for those with intermediate or high-risk mortality when the response time was four minutes or less. For this reason, ESCI recommends that the Town of Southington reevaluate all emergency medical response protocols to ensure that the closest appropriate response unit is dispatched to all emergency calls as triaged by Emergency Medical Dispatch Protocols.

Recommendation 3.6: Fire Department leadership should establish processes that provide a more accurate data set for their continued analysis of various measures.

Some elements to consider in establishing these processes are:

- Document within the NFIRS reporting system the response priority for each unit.
- Document the accurate dispatched time for all units as the time actually notified of the incident.
- Establish a link between the computer aid dispatch (CAD) software and the NFIRS reporting system to document the CAD incident number and latitude/longitude within the NFIRS reporting software.
- Capture Unit Hour Utilization by crew as opposed to specific unit assignment.

[26] https://doi.org/10.1197/j.aem.2005.02.013

Recommendation 3.7: Southington Fire Department leadership should coordinate with Southington Police Department leadership to verify the data provided for the Call Processing Time Performance analysis and work together to develop steps to improve performance to meet the 1 minute, 4 seconds target measure.

The primary public safety answering point (PSAP) for Southington, CT is under the direction of the Town of Southington Police Department. While not under direct control of the fire department, Southington Fire Department leadership should work closely with Southington Police Department leadership to monitor system performance and implement improvements as needed.

In analyzing the call processing time performance, ESCI calculated the time difference between alarm date/time and notified date/time. The Southington Fire Department performance for this measure on all incidents was 3 minutes, 33 seconds for career units and 3 minutes, 45 seconds for volunteer units. Both are greater than three times the expected measure. ESCI recommends that Southington Fire Department leadership coordinate with Southington Police Department leadership to verify the data provided for this analysis and work together to develop steps to improve performance to meet the 1 minute, 4 seconds target measure.

Recommendation 3.8: Research the various components associated with turnout time and consider implementation of changes where possible to improve performance.

The first component of the overall response time continuum that is under direct control of the fire department is turnout time performance—sometimes referred to as reaction time. This time measure represents how quickly personnel react to the notification of the incident, board the apparatus and begin responding. NFPA 1710 specifies that turnout time performance should be less than 60 seconds (01:00), measured at the 90th percentile for incidents other than fire and special operations. For those incidents, turnout time performance should be 1 minute, 20 seconds (1:20). Career units are close to meeting the standard with a performance of 1 minute, 33 seconds for all incidents. In contrast, volunteer units experience a much slower performance of 10 minutes, 57 seconds.

ESCI recommends that Southington Fire Department leadership research the various components associated with turnout time and consider the implementation of changes where possible to improve performance.

For stations where career units are housed (or staffed volunteer units), evaluation of notification systems, station design as it relates to personnel travel from the living quarters to the apparatus bays, door opening/closing devices, and other factors that may slow the response of personnel should be considered.

For volunteer units staffed by personnel responding to the station to respond the fire apparatus, evaluation of notification system and consideration of the ability to staff the station with volunteer or career personnel may be considered.

Recommendation 3.9: The Southington Fire Department's travel times are more than double what is recommended by NFPA 1710. Leadership and policy makers should balance the cost of placing additional resources in service versus the benefit of the quicker response.

Travel time is the measure of time it takes from the point of the apparatus beginning to respond and its arrival on the scene of the incident. Often, this is the longest component of the total response time as it is impacted by distance from the station to the incident, traffic, weather, school zones and other factors. NFPA 1710 recommends a travel time of 4 minutes or less at the 90th percentile. This 4-minute target is based on the ability to take action at the scene which may reduce the extent of injury to patients or damage to property. Travel time performance for both career and volunteer units are 8 minutes, 39 seconds and 8 minutes, 25 seconds, respectively. It is reasonable that this time measure does not vary significantly between career and volunteer units as it is not impacted by how the units are staffed. The ability to improve this measure requires that leadership and policy makers to balance the cost of placing additional resources versus the benefit of the quicker response.

Recommendation 3.10: The Southington Fire Department should track, monitor, and communicate its Total Reponses Times to the community. Additional career staff should be added when the Total Response Time exceeds a threshold that is acceptable to the community.

When all components of the response continuum are combined, it results in total response time performance. This measure represents the measure of time between the citizen activating 911 and the arrival of the first unit at the scene of the incident. Total response time performance for both career and volunteer units are 12 minutes, 32 seconds and 20 minutes, 15 seconds, respectively. As this measure also includes the turnout time component, there is a significant difference in the performance of career units versus volunteer units.

Recommendation 3.11: The Fire Department shall provide the Authority Having Jurisdiction with a written annual report.

In accordance with NFPA 1710:

4.1.2.6 The fire department shall provide the AHJ with a written annual report.

4.1.2.6.1 The annual report shall define the geographic areas and/or circumstances in which the requirements of this standard are not being met.

4.1.2.6.2 The annual report shall explain the predictable consequences of these deficiencies and address the steps that are necessary to achieve compliance.

4.1.2.6.3 The annual report shall identify any deficiencies that are anticipated to develop in the next 3 years and address the steps necessary to continue to achieve compliance to this standard.

ESCI suggests that the Southington Fire Department should include a concise report to the AHJ that includes only the aforementioned information. This document should serve as an ongoing source of evaluation and discussion between the Southington Fire Department and Town Officials about the resources that are required to meet the established performance criteria.

Recommendation 3.12: Increase the number of Fire Inspectors to bring inspection frequency into compliance with NFPA 1730.

The present staffing level does not allow regular inspections to be completed at all target hazard occupancies. While some occupancies are required statutorily to be inspected at regular intervals, many occupancies have never been inspected due to a lack of personnel needed to perform inspections and other job requirements. NFPA 1730: Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations, 2019 Edition, specifies:

6.6 Required Personnel. The AHJ shall determine the minimum resources, personnel, and equipment levels necessary to perform code enforcement and inspection activities.*

6.7 Minimum Inspection Frequency. Existing occupancy fire prevention inspection and code enforcement inspection frequencies shall not be less than those specified in Table 6.7.

Figure 135. Table 6.7 Minimum Inspection Frequency

Occupancy Risk Classification	Frequency
High	Annually
Moderate	Biennially
Low	Triennially
Critical Infrastructure	Per AHJ

Opportunity #4: Training and Professional Development Programs

Recommendation 4.1: ESCI encourages the integration of outside instructors into the Southington Fire Department Training Program.

The use of instructors from outside of Southington is critical to the future success of the Southington Fire Department Training Program as it diversifies the perspectives of the firefighters and brings new ideas into the organization.

Recommendation 4.2: Establish a formal feedback/input mechanism to receive necessary end-user feedback about the training program.

ESCI recommends that the Southington Fire Department evaluate the use of a survey tool to collect performance feedback from firefighters about the training program. Examples of online survey tools that could be used for this purpose include SurveyMonkey, SurveyLegend, and Typeform. Gathering information directly from firefighters on an annual basis will allow department leadership to keep a focus on those aspects of the training program that firefighters indicate as being of high value. This type of feedback also enables leadership to key in on specific performance issues that may exist. The annual survey would be a good opportunity to encourage firefighters to share new ideas or other suggestions they may have about the Southington Fire Department Training Program.

Recommendation 4.3: Make it a priority to incorporate annual live fire training into its training program.

OSHA CFR 1910.156 requires "Training and education commensurate with duties and functions members are expected to perform, provided before they perform fire emergency activities." It further requires "Training and education frequently enough to assure each member is able to perform assigned duties and functions satisfactorily and in a safe manner."

ESCI was told repeatedly by Southington Firefighters that it has been multiple years since they had attended a live burn training evolution. While it is understood that the skills associated with performing fire suppression activities can be refreshed without live fire, ESCI suggests that the suppression of live fire is one of the most high-risk and low-frequency activities in which Southington Firefighters engage. ESCI's recommends that the Southington Fire Department make it a priority to incorporate annual live fire training into its training program.

Recommendation 4.4: Reclassify some of the types of training that are conducted in the Southington Fire Department to better-align with ISO which will ideally improve the department's chances of receiving full training credit during their next ISO evaluation.

ESCI correlated the requirements of the Southington Fire Department Training Program with the ISO requirements. It is understood that there is some flexibility within some of the Southington Training Program topics to account for ISO Training. The Southington Fire Department currently uses the rating bureau section of FireHouse to track this training; when the transition to ESO takes place, every effort should be made to correlate the training program topics to ISO's requirements. ESCI offers the following suggestions for reclassifying some of the types of training that are conducted in the Southington Fire

Department to better-align them with ISO which will ideally improve the department's chances of receiving full training credit during their next ISO evaluation.

Figure 136. Comparison of Southington Fire Department and ISO Annual Training Requirements

Southington Training Topic	Hours	ISO Training Topic	Hours	ESCI Note
Company Drills	9	Company Training	Company training at fire stations, 16 hours per member per month (for maximum credit)	Increase company drills to 16 hours per month per member for maximum credit.
Driver Training Pump/Aerial Operator Training	3 3	New Driver and Operator Training Existing Driver and Operator Training	Classes for new drivers and operators, 60 hours (for maximum credit) Classes for existing Drivers and Operators, 12 hours per year (for maximum credit)	Increase driver and operator training to 60 hours for new driver / operators and 12 hours per year for existing drivers for maximum credit.
Practical Skills Evaluations	6			Reclassify this training to better-align with ISO.
Probationary Firefighter Program	24	Recruit Training	240 hours per recruit in the first year (for maximum credit).	Connecticut's Firefighter I and II combined satisfy the 240 hours per recruit during the first year to receive full credit.
Officer Development	12	Classes for Officers	Certification of all officers 12 hours per year of continuing education for all officers (for maximum credit).	Southington's Training Program currently satisfies this ISO Requirement.
Fire Suppression	8			Reclassify this training to better-align with ISO.
Hazardous Materials	8	Training on Hazardous Materials	6-hour session per member per year (for maximum credit)	Southington's Training Program currently satisfies this ISO Requirement

Southington Training Topic	Hours	ISO Training Topic	Hours	ESCI Note
EMT Recertification	40	*Not Applicable to ISO*		
EMR Recertification	16	*Not Applicable to ISO*		
Specialty Training	4	*Not Applicable to ISO*		Reclassify this training to better-align with ISO.
		Training Facilities / Use of Facilities	Drill tower Live fire training structure (including smoke room) 2-acre training area 18 hours per year per firefighter (for maximum credit)	The Southington Fire Department should reclassify its current training program topics to specifically include this subject.
		Building Familiarization for Pre-fire Planning Programs	The community should conduct a pre-fire planning inspection of each commercial, industrial, institutional, and other similar structure once a year for maximum credit in the Fire Suppression Rating Schedule (FSRS). Records of the inspections should include complete and up-to-date notes and sketches.	The Southington Fire Department should reclassify its current training program topics to specifically include this subject.

Recommendation 4.5: Develop a Professional Development Program for all positions within the Southington Fire Department.

The International Association of Fire Chiefs has developed the Officer Development Handbook, which is intended to function as the foundation for any organization's Professional Development Program. The handbook provides a foundation and explanation of the basic tenets of a Professional Development Program upon which an organization can build upon and customize to meet its own needs.

Several options are available as resources to Southington Fire Department to refine and achieve their training objectives. In addition to the current training schedule, NFPA 1021 Standard for Fire Officer Professional Qualifications offers four levels of certification via the National Board on Fire Service Professional Qualification (Pro Board) certification. Additionally, ISO requires a minimum amount of training in specific areas for all suppression personnel. By improving the training opportunities offered and requiring that each officer complete these requirements, the training section of the ISO evaluation could potentially improve the Town's ISO rating by up to nine points, nearly an entire class.

Finally, the National Fire Academy provides funding for one training course and lodging per year per firefighter. There are multiple leadership course opportunities available, including Southington Fire Department hosting a course locally.

Recommendation 4.6: Recognize the various levels of Fire Officers that exist within NFPA 1021, Standard for Fire Officer Professional Qualifications for midlevel and department chief officers.

As part of the Professional Development Program, ESCI suggests that understanding the increasingly complex demands placed upon the leaders of today's fire service, that the town recognize the various levels of Fire Officers that exist within NFPA 1021, *Standard for Fire Officer Professional Qualifications* for midlevel and department chief officers.

Figure 137. NFPA 1021 Fire Officer Levels

Level	Description
Fire Officer I	First-line supervisory officer who has met all the job performance and certification requirements of Firefighter II as defined in NFPA 1001: *Standard for Firefighter Professional Qualifications*, and Fire Instructor I as defined in NFPA 1041: *Standard for Fire Service Instructor Professional Qualifications*.
Fire Officer II	Mid-level supervisor who performs both supervisory and first-line managerial functions who has met all the job performance and certification requirement of Fire Officer I as defined in NFPA 1021.
Fire Officer III	Midlevel supervisor who performs both supervisory and first-line managerial functions who has met all the job performance and certification requirements of Fire Officer II as defined in NFPA 1021: *Standard for Fire Officer Professional Qualifications*.
Fire Officer IV	Upper-level supervisor who performs both supervisory and first-line managerial functions who has met all the job performance and certification requirements of Fire Officer III as defined in NFPA 1021.

Recommendation 4.7: Consider building National Fire Academy Classes into the Southington Fire Department Professional Development Program.

Active members of fire or emergency management organizations are eligible for a stipend reimbursement to attend the National Fire Academy in Emmitsburg, Maryland. All tuition, instruction, and course materials for National Fire Academy courses are provided at no cost. All active members of fire and emergency management organizations are eligible for stipend reimbursement once every fiscal year.

The National Fire Academy's Managing Officer Program is a multi-year curriculum that introduces emerging emergency services leaders to personal and professional skills in change management, risk reduction, and adaptive leadership. This program is ideal for Southington's Battalion Chiefs and Captains as well as those who aspire to those ranks.

The Executive Fire Officer (EFO) Program is the flagship program of the National Fire Academy. It provides senior fire officers with a broad perspective on various facets of fire and emergency medical services administration. The courses and accompanying research examine how to exercise leadership when dealing with difficult or unique problems within communities. This program is ideal for Southington's Fire Chief, Assistant Chief and Deputy Chief as well as those who aspire to those ranks.

Opportunity #5: Prevention Programs

Recommendation 5.1: Develop a targeted community risk program for the residents in the high-risk age groups of over 65 years of age and under 5 years of age.

Southington's population over 65 years of age makes up 21.1% of the population. Those reaching senior status in Southington are slightly above the national average of 16.5%. Coupled with the senior population to make up those most at risk are the 5% who are under five years of age. These two age groups (26.1% combined) are statistically more reliant on the emergency services offered by Southington Fire Department. Understanding these types of data assists in developing targeted safety campaigns and hazard reduction efforts.

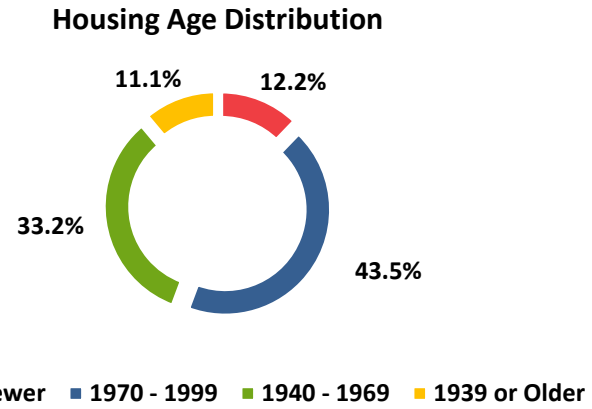
Recommendation 5.2: Create a targeted Community Risk Reduction Program for people with disabilities.

Fires in the home can be potentially dangerous and deadly for everyone, but persons with disabilities and impairments face additional challenges. Persons with disabilities often have a difficult time identifying or escaping a fire. In 2018, 6% of citizens under 65 years of age in the Town of Southington were reported to have a disability. Overall, 3,932 households identified as having one member with a disability. These citizens in the community would benefit from programs to assist in their needs during times of emergency and for emergency planning efforts.

Recommendation 5.3: Develop a targeted smoke detector program for residential dwellings that are ten or more years old.

Reducing fire fatalities and injuries in the home should be the main goal of any fire prevention program. Statistics show that smoke alarms improve human survivability in residential fires by at least 50%. NFPA's best practice for smoke alarm replacement is 10 years from the date of manufacture. In addition, emphasis should be given to homes that were built when there were fewer life safety code requirements for smoke alarms, electrical receptacles, and electrical panels. Incorporating a smoke alarm installation program with a home fire safety inspection by targeting homes which are 10 years or older can substantially reduce risk from fire and fire-related hazards.

Figure 138. Age of Home Distribution in Southington



Fire suppression systems (fire sprinklers) are proven life-saving devices, with more than 125 years of empirical data serving to document their effectiveness. In the United States, however, fire sprinkler systems remain elusive in residential properties, especially in one-and two-family dwellings. Informational campaigns for historical house renovation and for new construction certainly help to curtail this elusiveness.

A 2008 study prepared for the Centers for Disease Control[27] of lithium battery-powered smoke alarms installed in 1998–2001 in five states investigated whether these alarms were present and operational eight to ten years later. This study found that at least one of the installed alarms was still present and functional in only 38 percent of the homes visited. Slightly more than one-third (37%) of the installed alarms had been removed, one-third (33%) were present and operational, and slightly less than one-third (30%) were present but not operational.

Recommendation 5.4: Review the plans review fee schedule as a potential course of increased revenue.

ESCI conducted a review of six municipalities local to Southington. These communities were East Hartford, Hartford, Manchester, Meriden, New Britain, and South Windsor. All five communities charge for plans reviews on a sliding scale based on the cost of the project.

Figure 139. Comparison of Municipal Plans Reviews Fees

Municipality	Plans Reviews Fees
East Hartford	$40.00 for up to $1,000 $20.00 for each additional $1,000
Hartford	$50.26 for up to $1,000 $30.26 for each additional $1,000
Manchester	$20.00 for up to $4,000 $20.00 plus $7.00 per $1,000 in excess of $4,000
Meriden	65% of the Building Permit Fee or 100% for 'fast track' Code Consulting: $150.00 per hour
New Britain	$0 through $1,000: $0.00 per $1,000 $1,001.00 through $50,00: $2.50 per $1,000 In excess of $50,000: $5.00 per $1,000
South Windsor	$60.00 for up to $2,000 $18.00 for each additional $1,000

The complete fee schedules for each of the aforementioned communities are included in this report as *Appendix D: Plan Review Fee Schedule.*

[27] Evaluation of the "10-Year" Smoke Alarm Project (nchharchive.org)

It is ESCI's experience that charging for plans reviews based on the cost of the project is very much an industry accepted practice. The East Hartford Fire Chief reported that annual revenue for plans reviews as a result of this effort net between $500,000 and $700,000.

Opportunity #6: Facilities and Apparatus

Recommendation 6.1: Construct a Southington Fire Department firefighter training facility.

NFPA 1402 *Standard on Facilities for Fire Training and Associated Props* recommends that general considerations for fire training facility locations should include:

Figure 140. Fire Training Facility Site Considerations

Fire Training Facility Site Considerations
1. Appropriate zoning and selection of a site that will not detract from the value of the neighboring residents or businesses due to the noise, lights, and smoke generated.
2. A location that provides ample space for driving and positioning multiple apparatus and crews (ideally 5 or more acres).
3. The site should possess access to an adequate water supply as well as areas for drainage retention or storm water access.
4. The site should possess a relatively flat grade.
5. A site that is centrally located allowing crews to easily travel to and from the facility.
6. Positive Impact on Service Delivery if co-located with a Fire Station

OSHA CFR 1910.156 requires "Training and education commensurate with duties and functions members are expected to perform, provided before they perform fire emergency activities." It further requires "Training and education frequently enough to assure each member is able to perform assigned duties and functions satisfactorily and in a safe manner."

ESCI was told repeatedly by Southington firefighters that it has been multiple years since they had attended a live burn training evolution. While it is understood that the skills associated with performing fire suppression activities can be refreshed without live fire, ESCI suggests that the suppression of live fire is one of the most high-risk and low-frequency activities in which Southington Firefighters engage. ESCI's recommends that the Southington Fire Department make it a priority to incorporate annual live fire training into its training program. This process could be simplified by the construction of a Southington Fire Department Training facility that would help firefighters to perform their jobs more safely and efficiently.

Additionally, the construction of a live fire training facility could help the Southington Fire Department achieve maximum reports in the training section of its ISO evaluation.

Recommendation 6.2: Store turnout gear in a well-ventilated room to prevent additional firefighter exposure to off-gassing chemicals absorbed into turnout gear.

The danger for firefighters does not stop when the fire is extinguished, but returns to the fire stations through their gear, equipment, and vehicles which were exposed and contaminated by smoke or other vapors. When contaminated gear and equipment is returned to the station via their respective response apparatus, the potential for cross-contamination occurs. Many agencies have developed significant on-scene decontamination procedures intended to minimize the potential for contaminants entering the work environment. While these efforts have a positive impact, additional consideration must be given to the physical design of the fire station to minimize these exposures further. The Southington Fire Department should limit/reduce firefighter exposure to toxic products of combustion which occur after the fire (i.e., off-gassing).

Recommendation 6.3: Conduct a town-wide evaluation of all the apparatus in the fleet with a goal of eliminating apparatus that does not see regular use and does not serve a specific and necessary need.

The cost of maintaining apparatus does place a significant burden on a fire department's operating budget in addition to the burden that replacement costs incur on the capital budget. The department has a fleet reduction strategy in place based on the needs of the community; this strategy should be evaluated and updated regularly.

Recommendation 6.4: Review the current apparatus inventory as well as the apparatus life cycle and develop an Apparatus Replacement Plan.

This review should be based on industry best practices and ensure that the current inventory, as well as life cycle of apparatus, meets both the operational and financial requirements of the Southington Fire Department.

Recommendation 6.5: Ensure that Equipment Replacement Plans are updated annually.

The Equipment Replacement Plan should provide an inventory of equipment that is in good general repair and scheduled for replacement, including SCBA, radios, and other high-value equipment.

Recommendation 6.6: Expand/improve upon existing video monitoring and recording and electronic key fob access already in progress for exterior entry points to ensure an increased level of security and awareness as to who is or attempting to enter Southington Fire Department facilities.

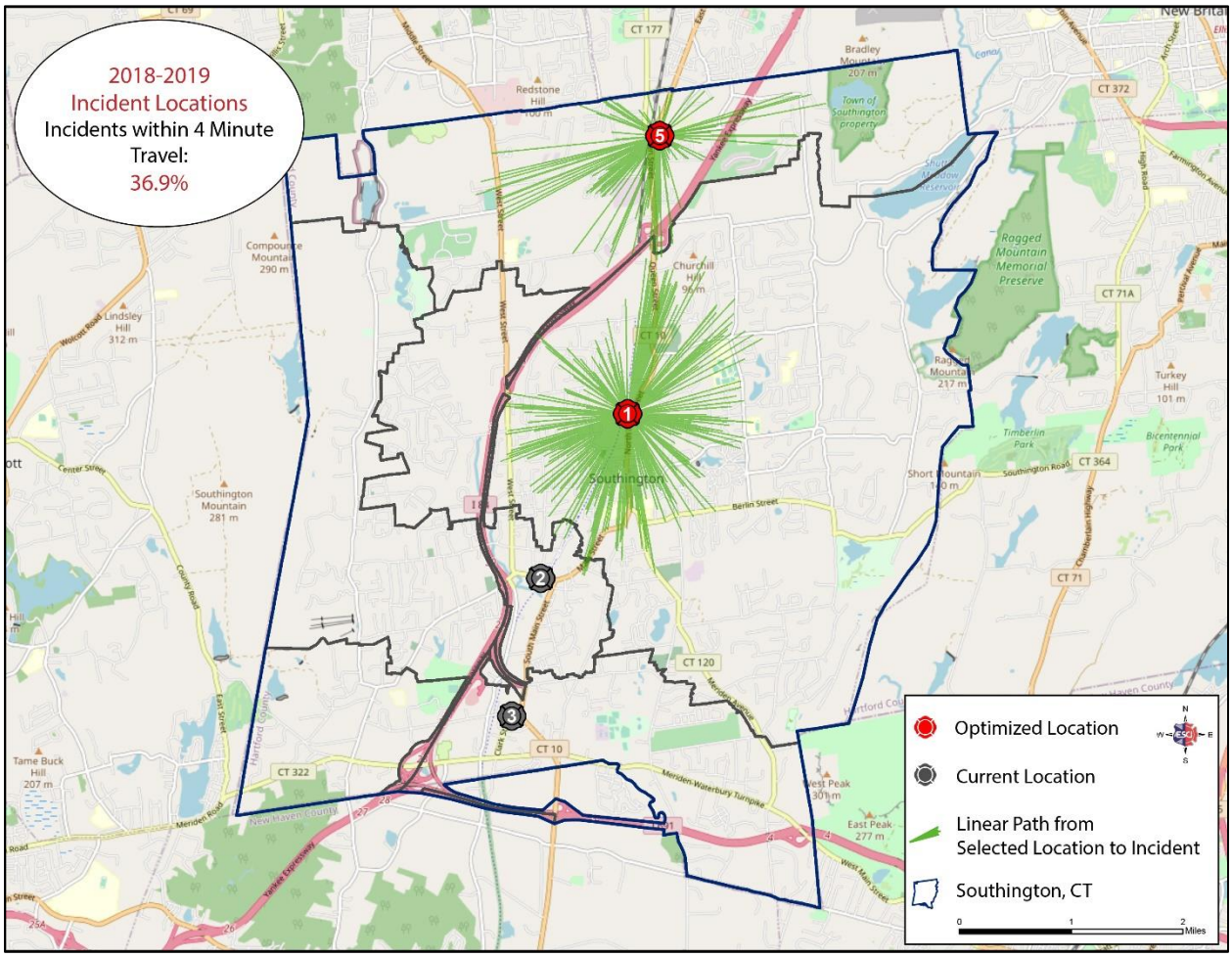
The Department should also evaluate the implementation of an access card system that identifies each fire department member accessing facilities. This evaluation should also include the ability of Southington Fire Department leadership has the ability to change access of a staff member immediately from a central location based upon a member's employment status or operational concern.

Recommendation 6.7: Identify locations for future new or relocated fire stations.

To assist Southington Fire Department in identifying locations for future stations, GIS software was used to create a model of the current system using a 4-minute travel time to develop the largest service

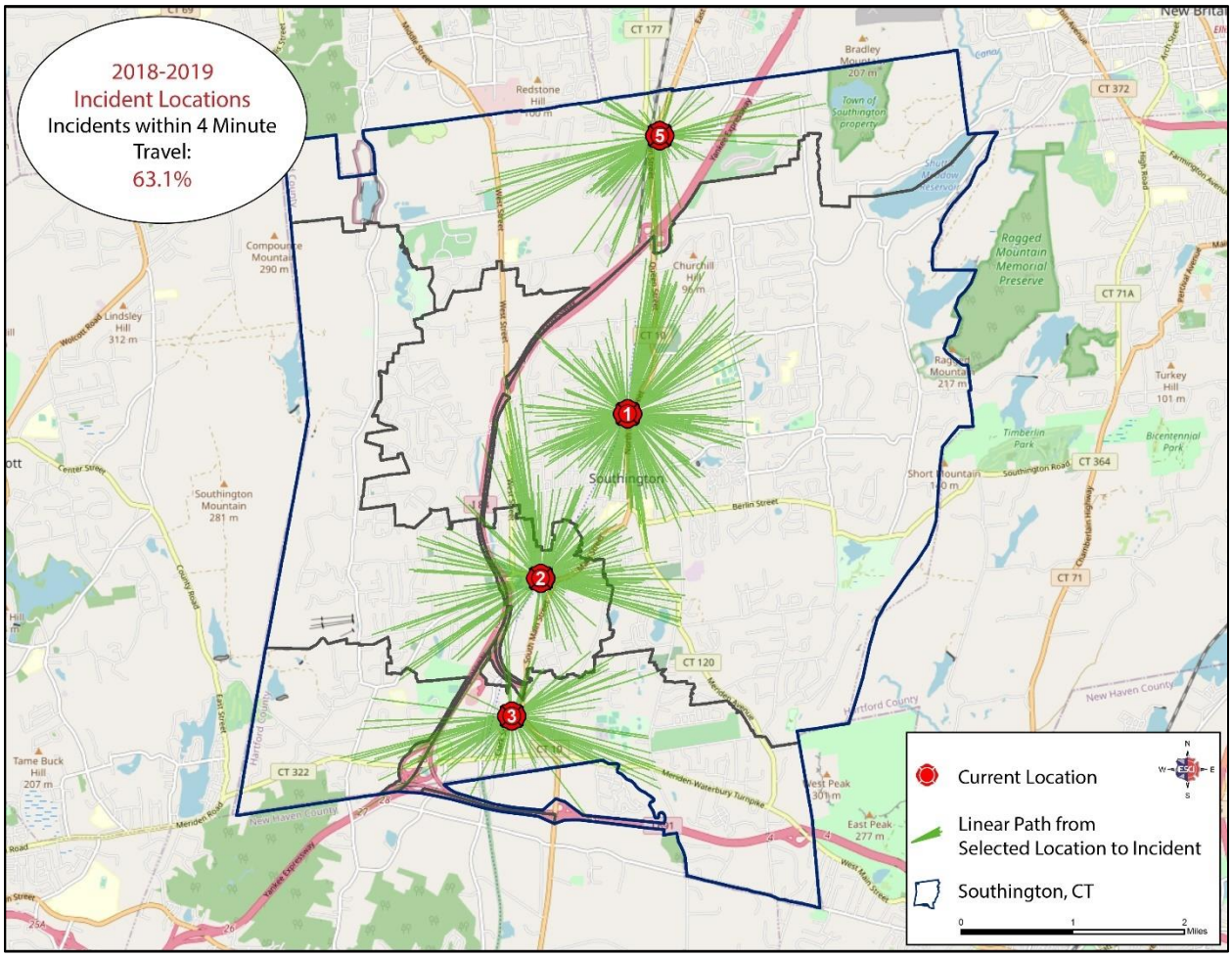
area while also capturing the greatest number of incidents from 2018 through 2019 call data. So that a baseline can be established, the current deployment model of two staffed stations, as well as the baseline results if all four current stations were staffed are displayed for comparison.

Figure 141. Baseline Performance of Current Staffed Stations 2018-2019



With a 4-minute travel time, the Southington Fire Department can currently reach approximately 37% of demand from stations 1 and 5. Next, baseline performance was calculated if all four current stations were staffed.

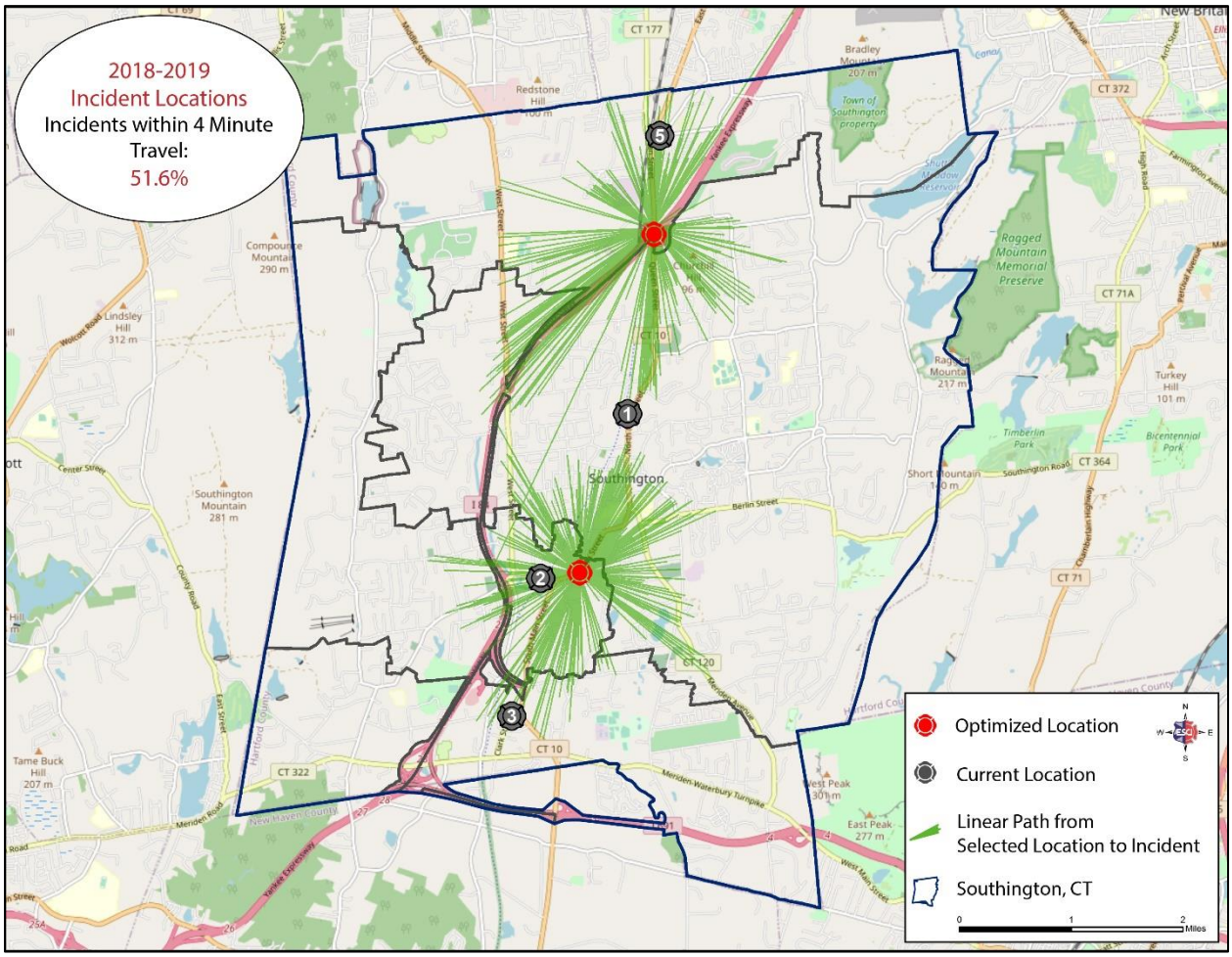
Figure 142. Baseline Performance if All Current Stations Were Staffed 2018-2019



If the Town of Southington were to staff all four of its current stations, 63% of incidents could be reached within a 4-minute travel time.

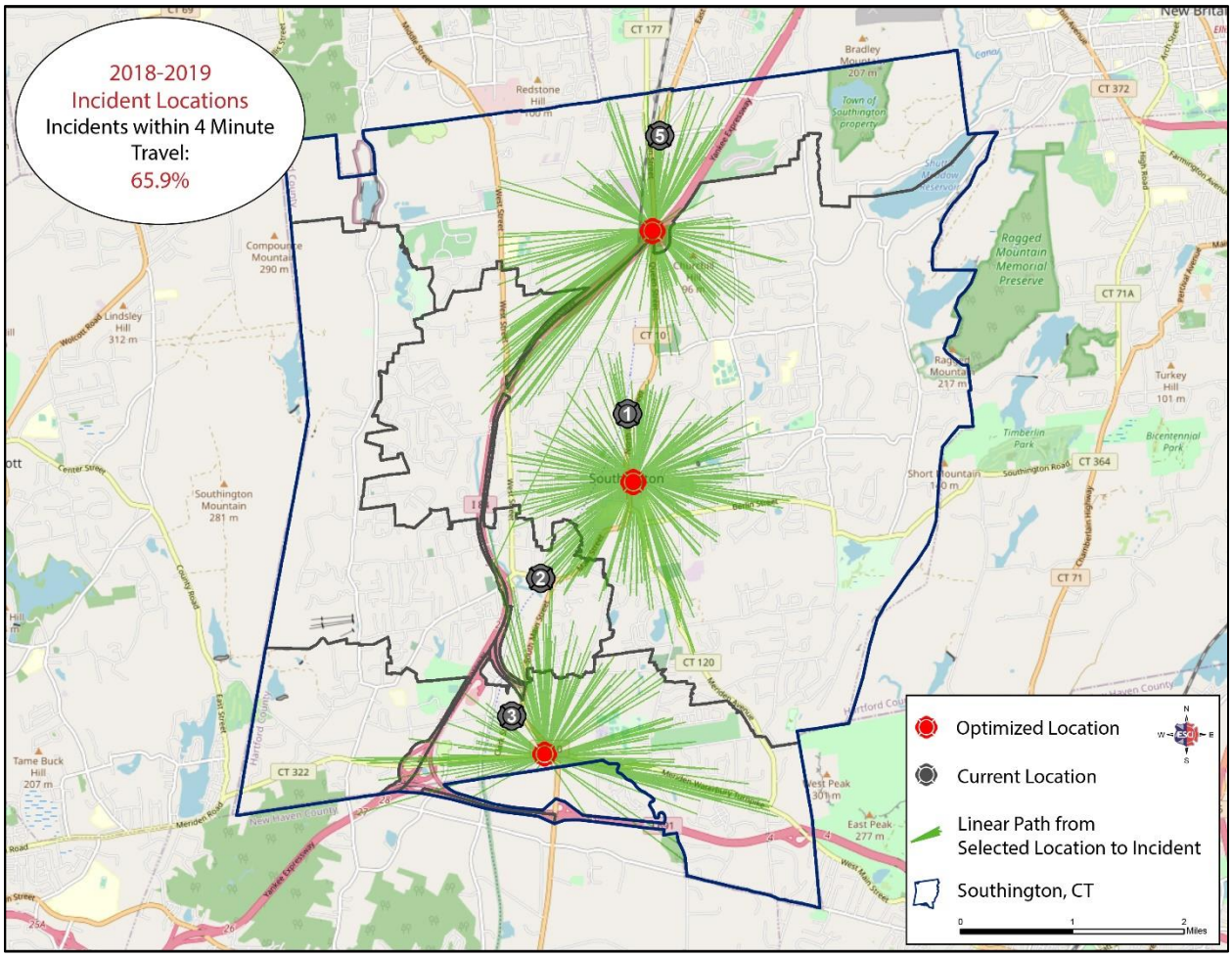
Next, 2,500 locations were generated and distributed across the Town as potential locations for a fire station. As Southington Fire Department currently staffs two stations, but has a total of four, and analysis was conducted for optimized station locations for two, three, and four stations.

Figure 143. Optimized 2 Staffed Station Locations 2018-2019



By optimizing the locations where career staff deploy, performance can be potentially improved from 36.9% to 51.6%, a 14.7% increase. Based on the proximity of the current Fire Station 2, that property could potentially be utilized if only two stations were to ever be staffed. Next, a third location is added.

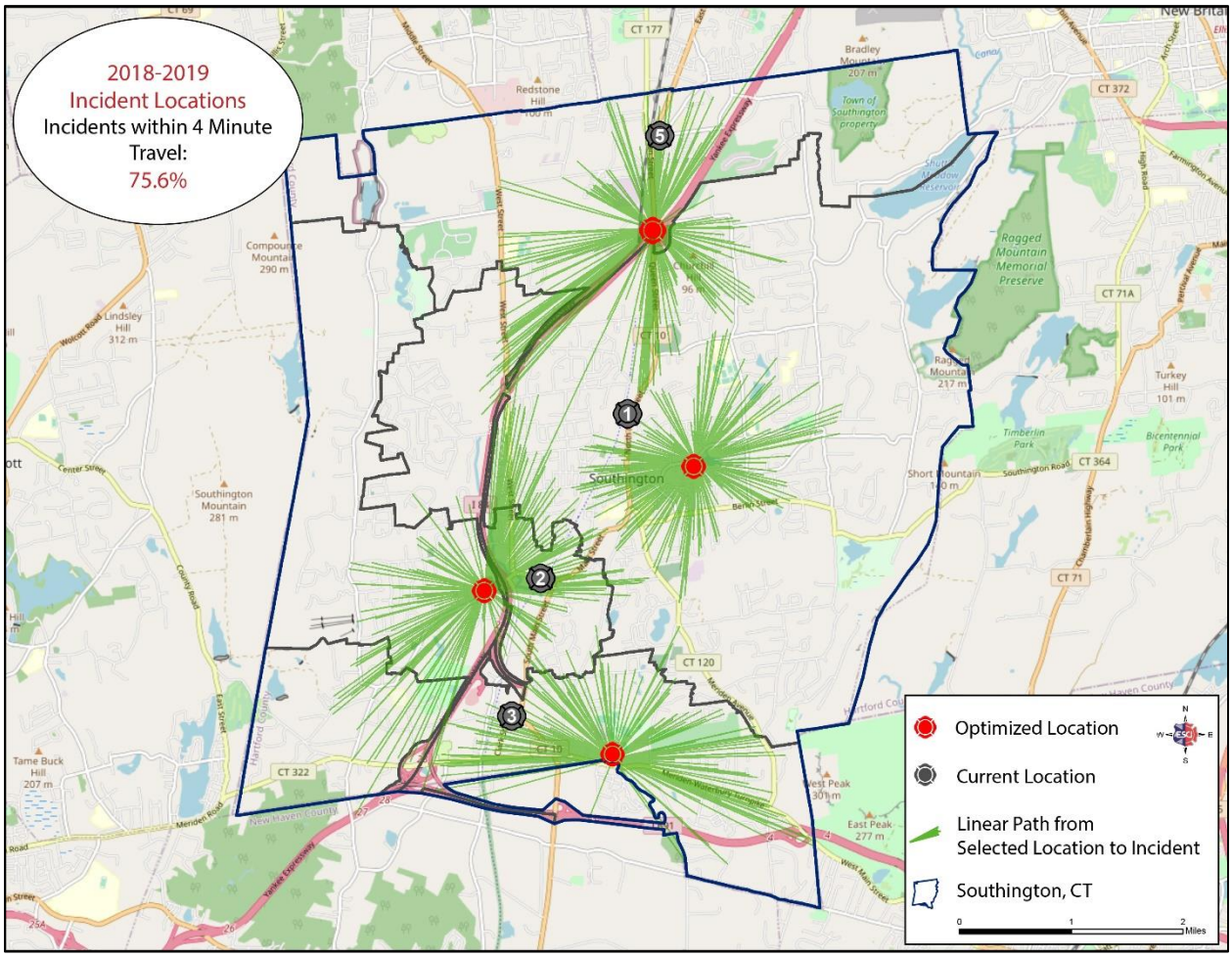
Figure 144. Optimized 3 Staffed Station Locations 2018-2019



When three locations are optimized, coverage improves from 51.6% to 65.9%, an additional 14.3% over the previous two station optimization and a 29.0% improvement over the current deployment model. Given the proximity of the optimized locations to stations 1 and 3, a relocation of Station 5, the rehabilitation of Station 3 to allow for firefighters to reside for 24/7 operations, and the continued use of Station 1 would most likely yield similar results.

Finally, an optimization was performed for a four station model.

Figure 145. Optimized 4 Staffed Station Locations 2018-2019



With four staffed fire stations, performance once again improved from 65.9% to 75.6%, or a 9.7% improvement. Given the large increases in predicted performance each time that a fire station is added, the Town should strongly consider the imbalance in levels of service currently provided throughout the Town and establish a minimum threshold and trigger points for when new stations and personnel are added. If a four station model is conceivable within the normal lifespan of a building, 30-50 years, the Town should strongly consider working towards a deployment model that will better serve the community if fire stations are to be rehabilitated or relocated.

Conclusion

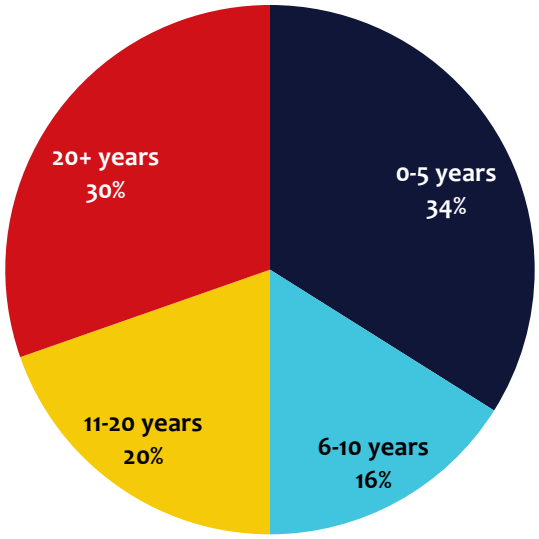
The ESCI project team began collecting information about the Southington Fire Department in April 2020. The team members recognize that this report contains a large amount of information. ESCI would like to thank the Southington Fire Department and Town of Southington officials for their efforts in bringing this project to fruition.

It is ESCI's sincere hope the information contained in this report is used to its fullest extent, and that the emergency services that the Southington Fire Department provides to the citizens in and the surrounding area will be improved by its implementation.

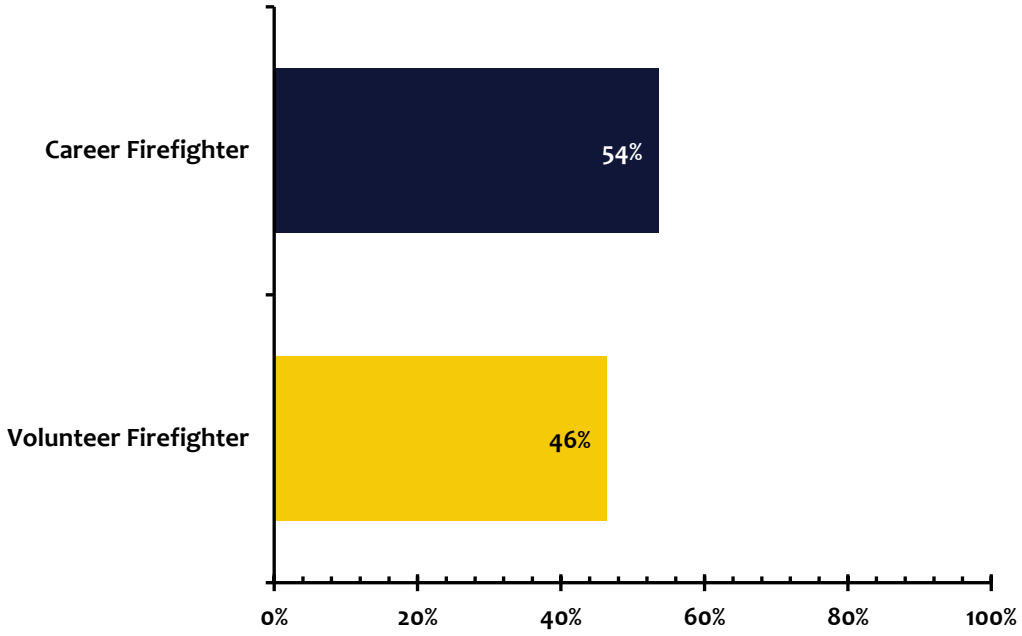
Appendix A: Southington Fire Department Internal Survey

A summary of the most common comments has been listed for each question. The Southington Fire Department has been provided with a complete copy of all responses. The following open-ended responses are unedited and appear in their original form.

Question 1: Please identify your total completed number of years working for the Southington Fire Department.



Question 2: Which one of the following best describes your current position?



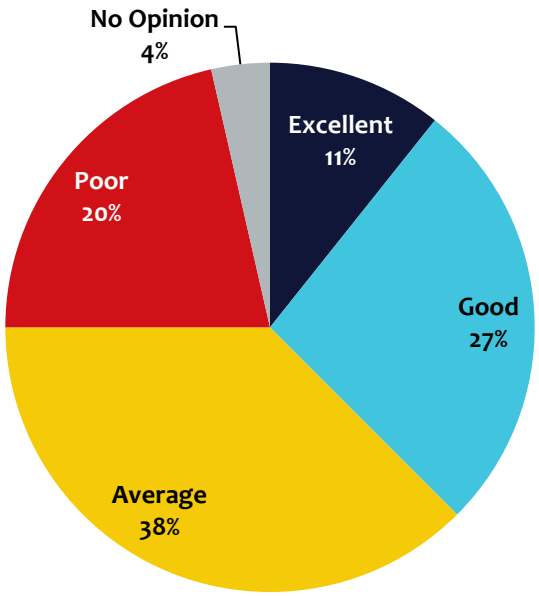
Question 3: If you could change one thing about the Southington Fire Department's Training Program, what would it be?

- Have a designated training grounds with a building to operate in
- More Officer Development
- More time hands-on/more repetitions
- The career staff can only train on shift which becomes a problem because when calls come in we have to clean up quick and go which doesn't allow us to necessarily complete the task we are working on.
- Use the volunteer officers more in the training program. Not get pushed off to the side.
- We haven't conducted live burns in approximately five years, many of our members (especially volunteer) haven't been in an IDLH atmosphere within that timeframe.

Question 4: In your opinion, what is the best way to communicate information within the Southington Fire Department?

- Chain of command
- Email and Calendar entries/reminders in the RMS
- Email and dispatch
- I think that within the Shifts a text message is good for direct access to shift members. Email is a good way in general to get the information out so that it is always accessible for reference. However, face to face meetings among the shifts, and when necessary, with Chief Officers is important when there are major changes to our standard operating procedures, or major cultural changes in the department, that may stir up concern among company level officers and firefighters.
- Our email communication is very highly used and keeps most members informed of daily happenings and changes.

Question 5: How would you rate morale in the Southington Fire Department?



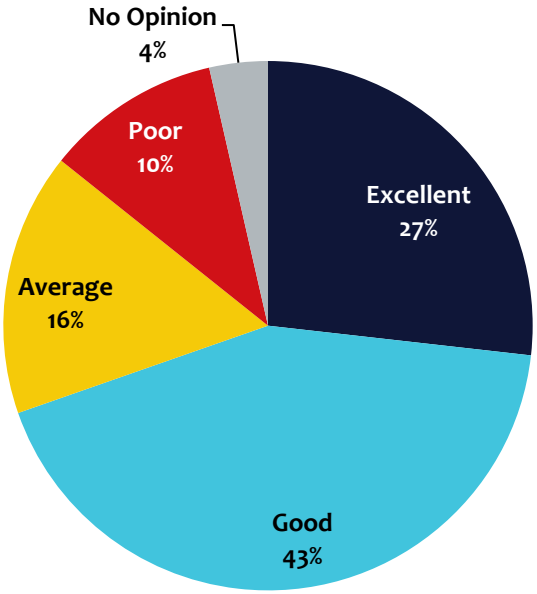
Question 6: What suggestions do you have for improving firefighter morale in the Southington Fire Department?

- Give us the staff needed to properly protect the town.
- Reduce/ eliminate dissension between career and volunteer. Volunteer just want to help their community; it appears the career firefighters resent or feel threatened that this may cost jobs and leadership dies very little to bring everyone together on the mission of collectively serving our community.
- The career members feel that, above the Chief level, the political bodies in town do not support us or support the department. Funding our budget and staffing at an appropriate level is a good start. This is a good place to work, and with some changes could be so much better. The career membership trusts nobody beyond our Fire Chief. We historically are not taken seriously at the town level; however, our new Fire Chief is the best person to lead this department out of that. A top step patrol officer makes $11,095 more than a top step firefighter, why? Our fire officers make less than every comparable fire department around us, by a lot. For employee appreciation day, all other town personnel received four hours of time off, the firefighters were offered a "catered lunch" which they declined and donated to Bread for Life. This organization has top notch people and morale issues from within are minimal.
- Use your volunteers more. Don't call them out just to roll hose. If we do all this training, use us.
- We need to be responding to more EMS calls. A morale killer is sitting in station listening to a nearby medical call of serious nature and we are usually not even considered as a resource to be sent.

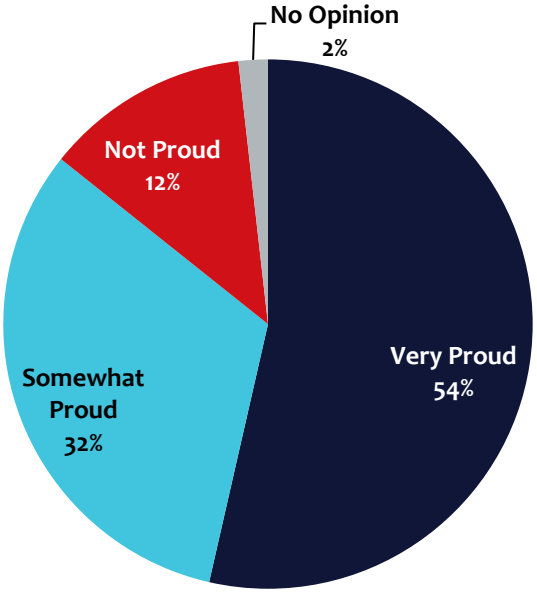
Question 7: In your opinion, what should the leadership of the Southington Fire Department be doing more of?

- There could definitely be more public relations and citizen outreach so the general public understands who we are, what we do for them, and how we help our community every day. Many people in our town don't even realize that we have a career department and that we are working for them 24 hours a day, nor do they understand the types of services that we provide."
- More communication from the top. The Department Management has a history of keeping things secretive.
- Our Chief has a great admin. He is working very hard to move us forward. Town government needs to support us in our mission to protect the town. Lip service doesn't count. We can try and educate all we want, nobody is listening.
- Working on increasing staffing on the career side. I would like to see more volunteers because at this point they are needed but unfortunately it's a system that does not work anymore. I volunteered for 10 years before I got hired and I could see the writing on the wall. My old company had 30+ members when I joined. Now there are 5 and 0 are available during the daytime hours. This means that in the South end of the town during the daytime if there is a fire and the on-duty staff is potentially tied up on something else. There is nobody coming to get on those trucks. This is unacceptable.
- Working with volunteers, listening to them. Changing the culture. Make volunteers feel wanted.

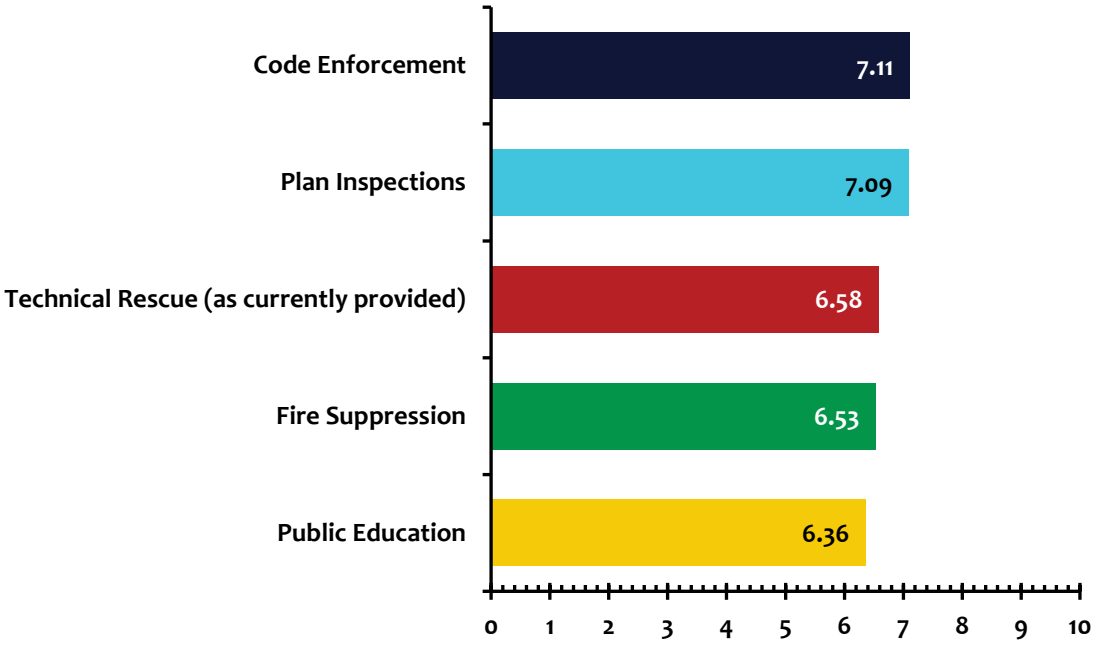
Question 8: How would you rate your overall personal work environment in the Southington Fire Department?



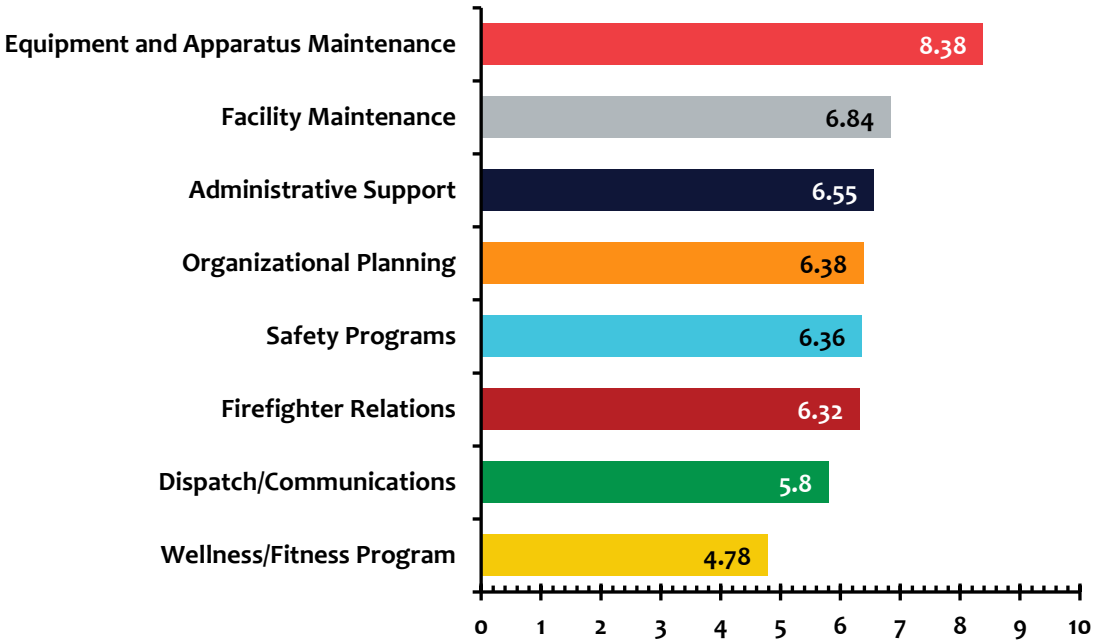
Question 9: How proud are you to tell other people that you are a member of the Southington Fire Department?



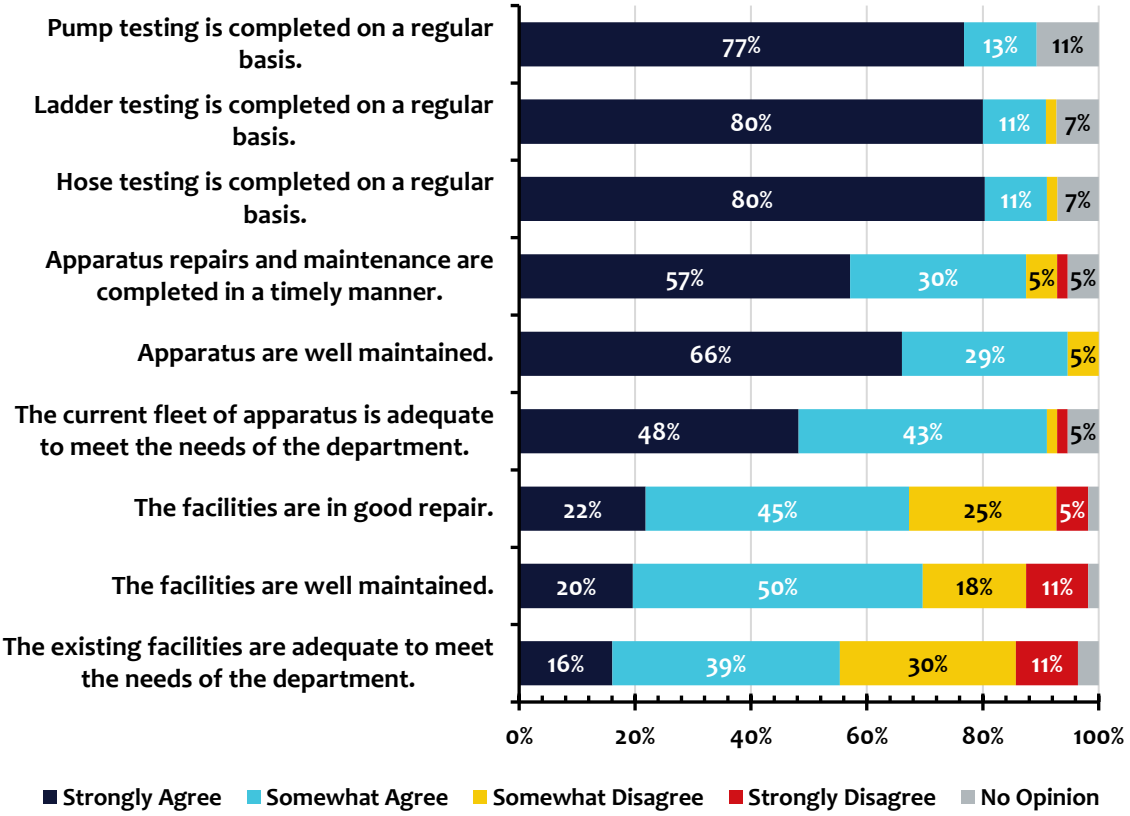
Question 10: On a scale of 1 to 10, where 1 is poor and 10 is excellent, how would you rate the following external services and programs provided to the public by the Southington Fire Department?



Question 11: On a scale of 1 to 10, where 1 is poor and 10 is excellent, how would you rate the following internal services and processes provided by the Southington Fire Department?



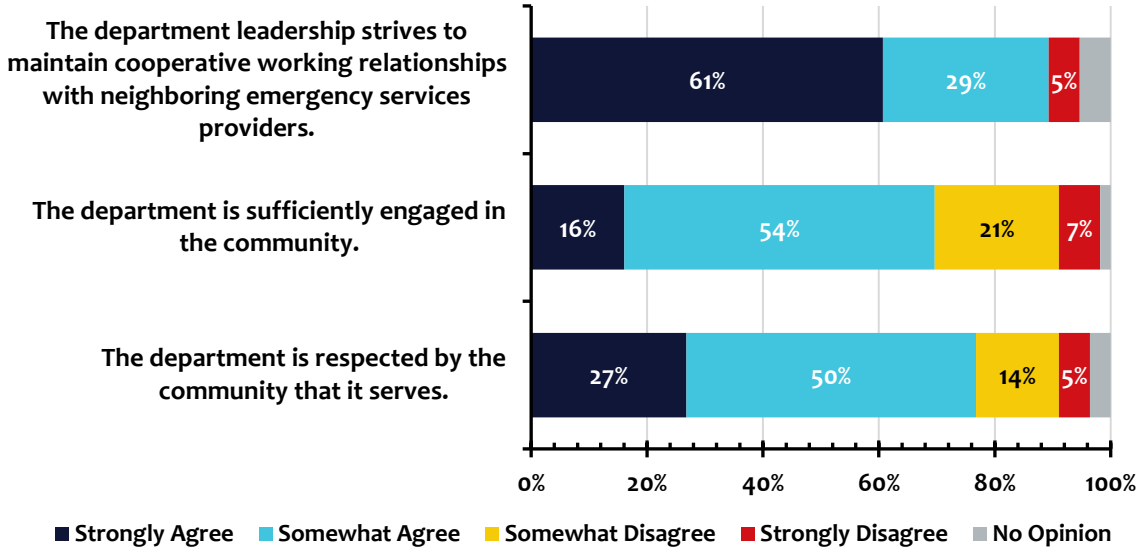
Question 12: Please identify your level of agreement with each of the following statements about the Southington Fire Department facilities and apparatus:



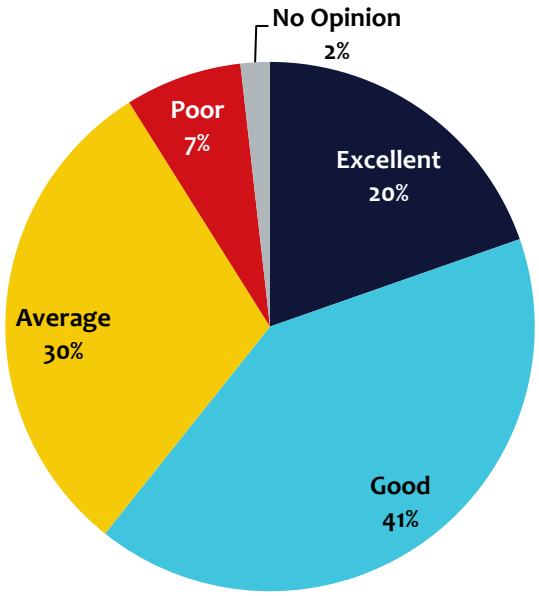
Question 13: If you could change only one thing about the work environment within the Southington Fire Department, what would it be?

- Covering 36 square miles out of two stations with 6/7 firefighters created extremely long response times. The department needs to staff another station to cut down on response times.
- Better work environment between the volunteers and paid staff
- Bring our 24-hour staffing to 3 stations and resume first responder EMS response, in addition to not replacement of, SPD and AMR.
- Have the politicians stop listening to a certain group of volunteers that hinder the department's ability to move forward and become more progressive.
- To have the volunteer and career to be able to work together as a team.

Question 14: Please identify your level of agreement with each of the following statements as they relate to the Southington Fire Department's community relations:



Question 15: In your opinion, what is the community's overall image of the Southington Fire Department?



Question 16: In your opinion, what is the single greatest strength of the Southington Fire Department?

- Current leadership changes is a welcomed change evidenced by this questionnaire and willingness to improve the services provided to the community.
- Dedicated volunteers, we have been treated poorly for years and we still volunteer to help the families of our town.
- Due to the small crew size (6/7 firefighters), the career members have to be very well versed at all facets of firefighting and rescue.
- Its personnel, for the majority, are highly trained and motivated.
- The reliable and hardworking volunteers and career firefighters

Question 17: In your opinion, what is the single greatest weakness of the Southington Fire Department?

- Internal bickering.
- Lack of manpower and lack of support from town government.
- Lack of volunteers who maintain interest due poor treatment and lack of use.
- Response times and staffing.
- The department has a lack of identity.

Question 18: In your opinion, what single greatest opportunity should the Southington Fire Department take advantage of in the future?

- As it becomes more difficult to recruit new volunteers the department will need to hire more career personnel. The department should better prepare volunteers who are interested in a career position to potential fill those positions.
- Building a common vision and plan to providing the best fire services to the town.
- EMS. The department needs to take the initiative partnering with the PD to respond to life threatening medical emergencies. The fact that there is 7 EMT's available to respond while a cardiac arrest, choking, gunshot victim, or overdose occurring on the same street as a fire station, and they are not called into service is borderline criminal. The police department does not provide the same level of medical services the FD can. Sending minimally trained EMR's to simply reassure a patient and do paperwork is a waste of resources and most importantly a disservice to the community.
- Full-time career staffing grants such as the safer grant. The town should prepare for the need to fully staff three fire stations or more in the near future, by adding more new career firefighters, a few each year or so. So they won't be in a place where they will have to hire them all at once.
- Get along.

Question 19: In your opinion, what is the single most significant threat that the Southington Fire Department faces in the future?

- A LODD or civilian's death with the department bearing responsibility for inadequate staffing for an appropriate response time and failure to provide up to date training.
- Not having the support of the town politicians.
- Our volunteer force is declining and we need to provide a better service to this town before someone is killed.
- Political influences. The department has been held back by this town's political powers for the past 50 years. It's time to let the Fire Chief make the decisions that are best for the community. They have driven two Chiefs out of their positions to hide from the truth, enough is enough.
- The volunteer force will be gone and the Town will still not support additional career staffing.

Question 20: Please use the space below to tell us your suggestions or final thoughts for improving the Southington Fire Department.

- Better location and updated stations, industry standards for manpower, expansion in training and fire prevention. Allow the Chiefs to run the department.
- More community outreach through public relations and events. And having special duty assignments for firefighters for, fire prevention in schools and community risk reduction assessments.
- We should also add more staffing in the inspection bureau for more efficient inspections and plan reviews. As well as adding more administrative officers in the training division. Specifically, a Training Captain to assist the Deputy Chief in charge of training.
- The Fire Department needs to be defined, are we a career FD with Volunteer supplement or a Volunteer FD with a Career Supplement and what the roles of each are.
- The members of the BoFC need to stay out of the operational aspects of our Department.

Appendix B: Southington Fire Department Citizen Feedback Survey

A summary of the most common comments has been listed for each question. The Southington Fire Department has been provided with a complete copy of all responses. The following open-ended responses are unedited and appear in their original form.

Question 1: Mission Statement Comments/Suggestions

Mission: "The mission of the Southington Fire Department is to provide to the residents of Southington and those who pass through it fire and rescue services. To protect life and property through prevention, code enforcement, fire suppression, rescue, and emergency medical services."

- "And those who pass through its fire, rescue, and community services."
- Add EMS services after fire and rescue.
- Add through "education" and "training."
- Mention volunteers
- suggest: The mission of the Southington Fire Department is to provide fire and rescue services to the community of Southington and all who pass through it. To protect life and property through prevention, code enforcement, fire suppression, rescue, and emergency medical services.

Question 2: Vision Statement Comments/Suggestions

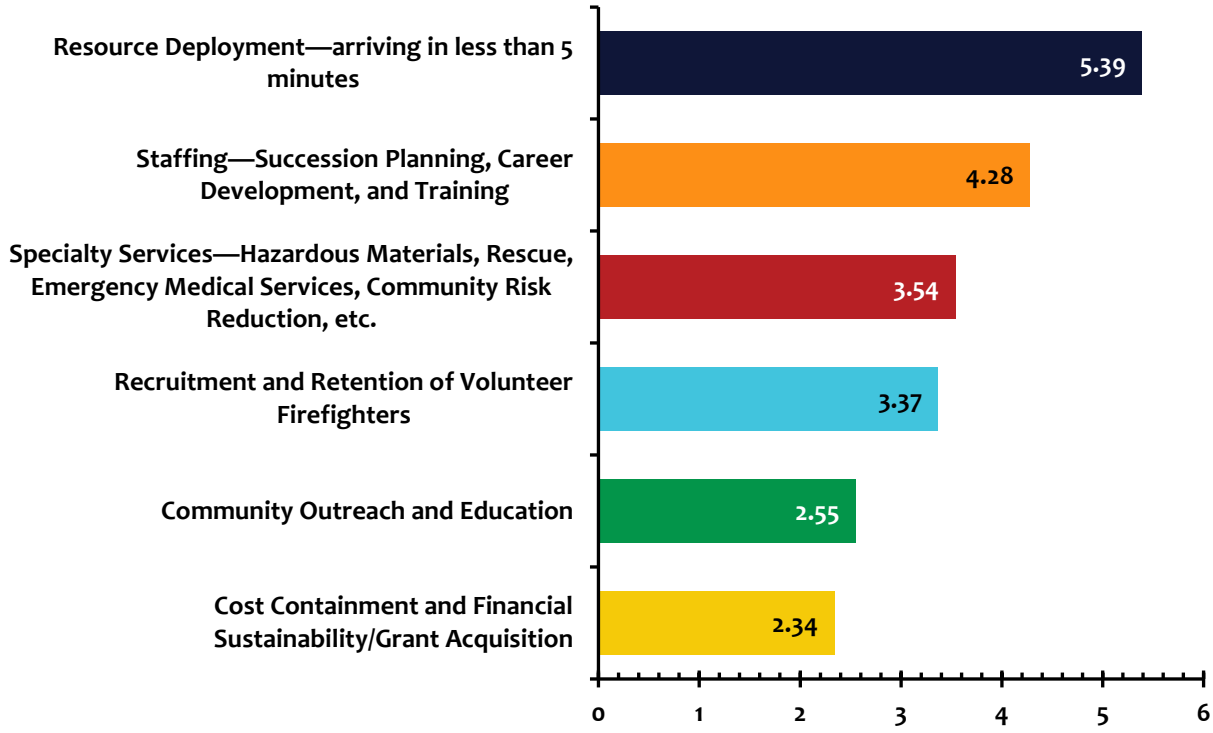
Vision: The Southington Fire Department does not have a Vision Statement at this time.

- A Vision and core values statement was completed in 2016 by the Strategic Planning committee at that time. Review these as a starting point.
- Our vision here at the Southington Fire Department is to continue a world class Firefighter/Prevention organization that adheres to professional standards, maintains the highest levels of fire equipment, and grows its core staffing levels to levels consistent with the community needs.
- The vision should include timely fully staffed trucks for each response (as needed by response issue)
- To Provide the Southington Community with a Progressive Fire Department through education and training while serving the people in their time of need professionally and promptly.
- To reach the highest level of performance and education to all who serve in the department.

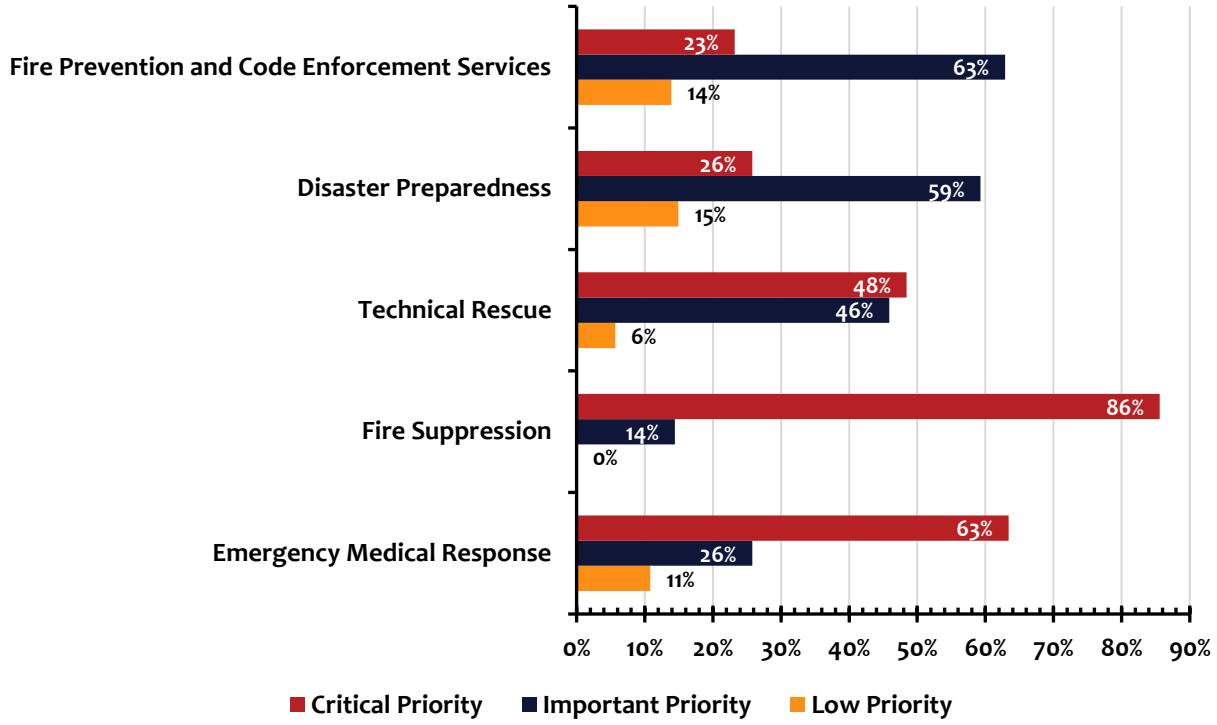
Question 3: Core Values Comments/Suggestions

- 4 strong stations over 20 amazing apparatus and idk how many firefighters but lots of values
- Compassion, Accountability, Respect, Excellence, Service (CARES).
- Honor, Integrity, Commitment, Professionalism
- integrity, commitment, honesty
- Trust, honesty, and caring service

Question 4: Rank the following according to importance to you, with "6" most important and "1" least important.



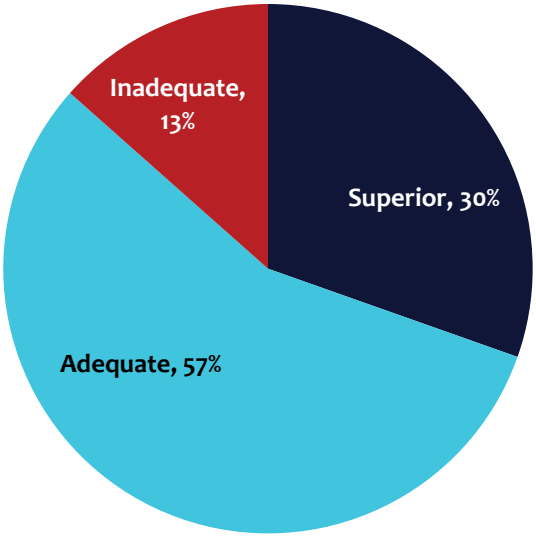
Question 5: Rank the following services provided by the Southington Fire Department using a scale of critical priority, important priority, or low priority. If you would like to see a service added, please list it in the comments field. Please also note any services you feel shouldn't be provided by your fire department.



Comments/Suggestions:

- Home Safety inspections
- Community relations/outreach/education.
- Full time staffing levels increase, Firehouse consolidation.
- Other towns have moved to FD as first responders. Would this strengthen dept by creating FT positions and reduce costs for hiring separate entity for EMR?
- Use of more volunteers.

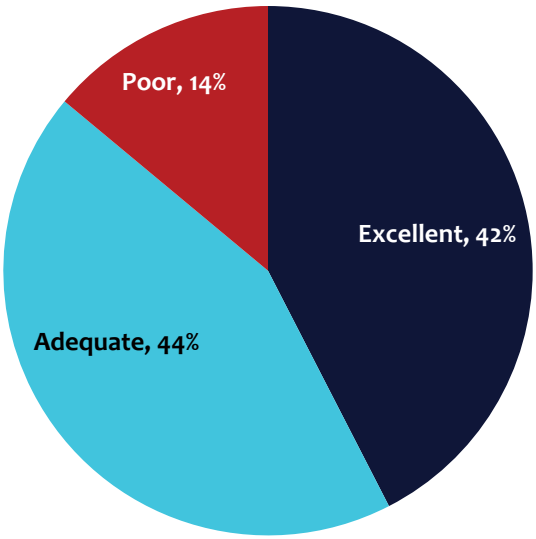
Question 6: Please select the option that reflects your opinions as they relate to EMS. Please add any explanatory comments in the notes section immediately following the question.



Comments/Suggestions:

- A BLS first responder to all Bravo to Echo the me calls would be a good goal. Engine company ALS first responder or FD/EMS transport service would be a difficult gold standard.
- Always concerned about response times
- AMR does a great job.
- FD should be first responding to life threatening emergencies. i.e.: chest pain, cardiac arrest, shortness of breath, stroke, other natures that are at least a delta response under EMD. The pd does a good job, but as the career FD force expands, they can take on that role. Southington has a good payer profile. I'd love to see an FD sponsored Ambulance in town again.
- Fire department should not respond to medical calls, that is why we pay for ambulance services.

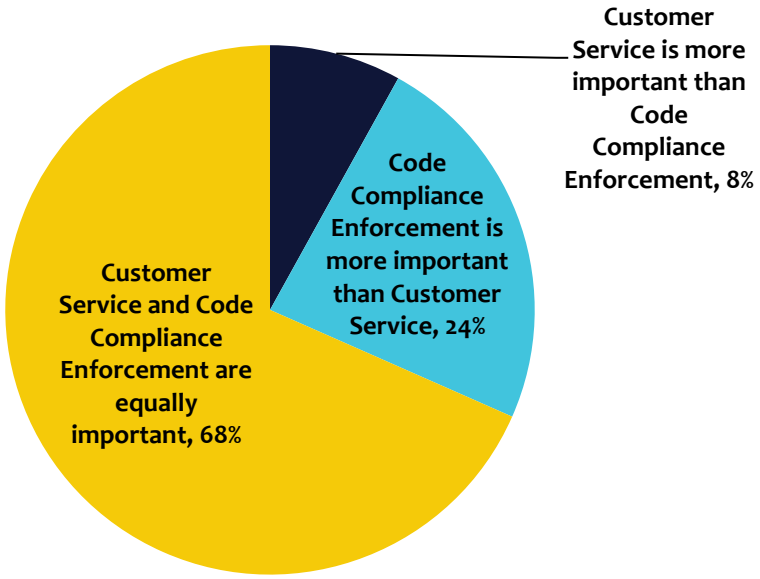
Question 7: Please select the option that reflects your opinions as they relate to Fire Suppression. Please add any explanatory comments in the notes section immediately following the question.



Comments/Suggestions:

- For such a large town, it seems like there should be more stations & staff.
- long response times. not enough firefighters on scene.
- Need faster response times, we need at least paid drivers on duty for all Fire vehicles 24/7 plus one fireman, so all firehouses are staffed.
- Response times are not adequate. Staffing is poor.
- Southington needs to increase the volunteer departments.

Question 8: Please select the option that reflects your opinions as they relate to Fire Inspection/Enforcement Services Priorities. Please add any explanatory comments in the notes section immediately following the question.



- More inspectors are required to handle all inspectable properties on the appropriate schedule.
- Safety should be a priority.
- some residents need assistance choosing and installing home fire protection etc.
- Sometimes codes changes so often that it becomes very costly for the homeowner to comply, especially for multifamily housing. Sometimes the codes are also unclear, and differently interpreted by different people. This is very costly for the property owner.
- We should worry about following the rules instead of worrying about customer service.

Question 9: Please list, in priority order, the expectations you have of your fire department.

- EMS for all life threatening medicals
- Have adequate personnel on scene at all times with a quick response. Along with set standard operating procedures every member abides by. Ensure all staff are trained at the same level volunteer/full time.
- Professional yet courteous to the citizens served. Community support, or lack thereof, can make or break a department, respectively.
- To respond to fire related incidents in a timely manner with the proper staffing and equipment
- Use of more volunteer, instead of sending the career firefighters to calls where they have to pass a volunteer station.

Question 10: Please list any concerns you have regarding your fire department.

- A major concern is the number of firefighters that are on duty during a shift. These low numbers not only put the firefighters in danger but will also reduce response time. For those people, who think that the fire department does not need anymore firefighters because it won't reduce response time is wrong. It will take 3 firefighters much longer than 4 or 5 on a scene to accomplish the goal.
- Due to today's culture and average day responsibilities, there is a concern our volunteer forces will continue to deplete. Southington Fire Department needs to really think of revamping the program in a way it becomes more attractive and more realistic in today's world. Reach means a hard look that what the volunteer force can handle and then applying that to a more reasonable need.
- For a community of over 50,000 people, I would expect a department that staffs itself to reflect its risk. With the current number of volunteers on the roster I am pretty sure the career staffing falls very short on being able to provide the service. We are no longer in the 1970s which had a long list of volunteer members. Times have changed and so has the Town.
- My concern is to ensure the fire chief operates the department vs the fire commission. Fire commission is an oversight board and should not interfere with the day to day operation. Remove the politics.
- My main concern is the inadequate Budget that the Town/City Leaders provide for Fire/EMS services in the community. The Town has grown to the size of a City and that Town Leaders continue with the blinders on their faces. Volunteers keep decreasing throughout the TOWN, STATE, AND COUNTRY, stop putting a band aid on a bleeding artery. Put the big person pants on and FUND the Fire Department to provide ADEQUATE Fire and EMS Services to the CITIZENS.

Question 11: Please list any strengths you would like to share regarding your fire department.

- All personnel are well trained, professional in their community service and very effective despite some manpower shortages.
- Dedication of both full time & volunteers
- The equipment provided to the department appears to be very good. The number of stations I believe are adequate. The members I have encountered over time all seem very professional.
- The Southington Fire Department has great equipment and very professional firefighters, commanders, and staff.
- They do the best with the limited staff they have!

Question 12: Please share any other thoughts about your fire department.

- I own my house and would be willing to pay more in taxes to get coverage we deserve.
- It seems they do a great job.
- Keep up your good work! Thank you for your service!
- My biggest worry is the department is unable to handle basic single family building fires with its current staffing both career and volunteer. The fire budget in Southington is at a lower percentage of the general budget than almost every other community in Connecticut. It is time to bring this department up to its useful staffing. It seems to me that they call a neighboring city department every time they have a fire of any size. Do those departments need help at every fire? I don't think so.
- So appreciate the work of all in our fire department and other local areas that support them.

Appendix C: Required Minimum Training for Connecticut Fire Services to Meet State Regulations

REQUIRED MINIMUM TRAINING FOR CONNECTICUT FIRE SERVICES TO MEET STATE REGULATIONS (rev. 7/04)

Firefighting 1910.156(c)	Hazardous Materials Operations	Command Leaders and Incident Commanders	Infectious Disease Control	Confined space
1. Training and Education commensurate with duties 2. Prior to work as firefighter 3. Officers have more comprehensive training than members. **1910.156(c)(2) - Training (Frequency)** 1. At least quarterly for interior 2. Annual for others **The following subjects**: (Examples or Key Elements) 1. Safety and Protective Equipment 2. Chemistry of Fire and Fire Behavior 3. Self Contained Breathing Apparatus 4. Fire Streams 5. Hose 6. Pumping Fire Apparatus 7. Ladders 8. Rescue 9. Forcible Entry 10. Ventilation **Examples of Training Standards** I.F.S.TA. ESSENTIALS meet 1910 156(c) F.F.I. exceeds or meets this requirement Training can be classroom	Hazardous Materials Response 1910.120(q)(6) Training of Department Responders to a Haz Mat 1. (i) Awareness (no set hours). Depart-ment takes No action and remains in the cold zone. 2. (ii) Operational (8hrs). When the Department acts in a defensive mode and does not mitigate. (Damming, diking and decontamination is oper-ational level) 3. (iii) Technician (24hrs). This level mitigates (plug & patch) and uses chemical protective clothing. **Note** - Must meet specific competencies. List in 1910.120(q)(6) for each type of responder.	Incident Command and Standard Operating Procedures - HazMat 1910.120(q)(6)(v) 1. Requires 24 hours training equal to operations plus - competencies listed in 120(q)(6)(v) (A-F) ICS courses are a means of meeting this requirement as long as employer specific conditions and plans are also addressed. **Note**: The standard allows for command to be passed on as higher ranking officers arrive. 120(q)(6)(v) applies to employees who are expected to assume command.	29 CFR 1910.1030 I. Communicable Disease Risk Exposure and Prevention of the Transmission of Bloodborne Pathogens for Emergency Responders **TB** 1. Have a program, training, skin test and respirators if: exposed to active or possible active TB and A. Transport them B. Prolonged indoor contact with patient C. High Risk Procedures **Note**: State EMT, MRT, EMT-P Training covers some elements. Training must be site specific and annual for 1030.	1910.146 1. Only required for rescue activity. 2. Based on hazards, monitoring and rescue equipment to be used. 3. Annual Training 4. The "employer" must ensure timely, effective rescue where outside service is used. (see appendix "F") The 1910.146 is intended for employers entering spaces to supply their own rescue capability.

and hands on.				
EMERGENCY VEHICLE OPERATIONS Not required but suggested there be a program in place.	It is strongly recommended that a fire department have personnel on the scene of an incident that have at least First Responder certification to provide emergency medical care to any fire fighter injured on the scene.			

1. The local authority having jurisdiction may require additional training and education: **EXAMPLE**: A fire department may require Responder Certification or Emergency Medical Technician Licensure.
2. Curriculum for firefighting practices will be based upon interior or exterior fire attack principles, practices and procedures. The equipment in the department and the instructor will make this determination. (Training on any special hazards (an industrial location, location with particular hazards); have to be included in training.
3. The Department of Labor and the supporting agencies and organizations encourage each fire department to exceed this minimum training. High standards for training and education; and health and safety are key factors to quality job performance and service to the community. State of Connecticut, Commission on Fire Prevention and Control courses often exceed OSHA requirements.
4. All training must have an evaluation component and participants must pass the evaluation to receive credit for the training. A pass/fail system is adequate. Evaluation instruments and/or activities are to be determined by the instructor based upon the instructional objectives of the class. Training activity must be documented.
5. All training and education required by this document must be delivered by an instructor who is capable of delivering subject and trained in the area being taught. (See Appendix A to 1910.156).
6. All training components require annual refresher training of sufficient content and duration needed to maintain competency. Competency can be demonstrated annually in place of refresher training. Means of demonstrating competency must be documented by the Department. Employer could use drills, tests as means of demonstrating competency.
7. Attendance at "state" Fire School could be included as meeting training as long as employer specific conditions are addressed as well.
8. OSHA standards allow flexibility and do not specify that recipients have a certificate. Employer must certify training is done.
9. OSHA does not regulate level of EMS response (i.e., BLS, MRT, EMT, Paramedic, etc.).

Firefighting Practices
29 CFR 1910.156(c) Fire Brigades

1. Training and education commensurate with those duties and functions members are expected to perform, provided before they perform fire emergency activities.

2. Training and education frequently enough to assure each member is able to perform assigned duties and functions satisfactorily and in a safe manner.

All members shall be provided training at least annually. Members who are expected to perform interior structural firefighting shall be provided training at least quarterly.

Hazardous Materials
29 CFR 1910.120(q)(6) and (8) Hazardous Waste Operations and Emergency Response

General Requirements
1. Training shall be based on the duties and function to be performed by each emergency responder. Hazardous Material First Responder Awareness - Individuals who are likely to witness or discover a hazardous substance release and have been trained to initiate an emergency response plan. You can tailor to your operation.

2. Annual refresher training of sufficient content and duration to maintain competencies, or shall demonstrate competencies yearly.

3. 1910.120(q)(1) Emergency response plan. Must cover all elements. Town Plan may meet these requirements.

4. 1910.120(q)(3) Requires provision for having a safety officer, air monitoring prior to SCBA removal, back up personnel, first aid support at site, PPE, implementation of decontamination.

EPA 40 CFR Part 311
EPA Regulations are identical to OSHA.

Incident Command System
CFR 1910.120(q)(3)(ii) Hazardous Waste Operations and Emergency Response

Requires the implementation of an Incident Command System. Training in ICS is inherent in this requirement. For officers who are expected to be I.C. [see .120(q)(6)(v)]

OSHA does not require ICS use at structure fires. (It is suggested). N.F.P.A. does suggest use of ICS at fires.

Infectious Disease Control
29 CFR 1910.1030 Bloodborne Pathogens

All employees with occupational exposure shall participate in a training program at least annually. Occupation exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from performance of duties. This covers most if not all fire departments in the State of Connecticut.

1910.1030 Requires following:

1. Written exposure control plan
2. Training
3. PPE
4. HBV vaccinations
5. Post exposure follow up
6. Maintain Records of Training (3 years)
7. Maintain medical records 30 years

Breathing Apparatus
Must comply with 1910.134

1910.134(c) Written respirator program
1910.134(g)(3) Written procedures for dangerous atmospheres planning for communications, standby persons equipped for rescue of entrants.
1910.134(g)(1) Facial hair policy - not allowed in face seal area
1910.134(h) Monthly SCBA inspections
Records of inspections
Low air alarms
30 minute bottles
Cylinders fully charged
Current hydrostatic test on cylinders
Flow test apparatus as recommended by manufacturer

Other Requirements General

1. 1910.156(d)(1) - Equipment annual inspection and maintenance
   a. Hose (To NFPA 1962 or equivalent)
   b. Ground and aerial ladders (To NFPA 1932 and 1914 or equivalent)
2. 1910.156(b)(1) - Organizational statement
3. 1910.156(e)(1) - PPE provided at no cost
4. 1910.156(e)(1-5) - PPE meets .156 or NFPA
5. 1910.147 - Lockout/Tagout. Employee exposure most likely will apply to large department with a repair facility
6. 1910.1200 - Employee exposure (site chemicals such as cleaners, fuels)
   a. (e)Program must be in writing
   b. (g)Material safety data sheets available to employees
   c. (h)Training (firefighters may have equivalent through 1910.120 awareness level)
7. 31-371 - OSHA notice posted
8. 31-374 - Form 300 must be maintained back 5 years. 300 has to be posted every February - April

Appendix D: Plan Review Fee Schedules

East Hartford, Connecticut

FIRE MARSHAL'S OFFICE FEES

EFFECTIVE April 15, 2016

A fee in accordance with the following schedule shall be paid to the Fire Marshal's Office at the time application is made for:

Building permit for plan review (estimated value of work – first $1000)	$40.00	
Each additional $1000	$20.00	
Permit for Temporary Membrane Structure, tents and canopies	$50.00	
Permit to sell Fireworks	$100.00	
Blasting Permit	$50.00	
Permit for Firework/ Special Effects Display	$100.00	
Vendors (Food/Outdoor Events)	$50.00	
One day Liquor permit	$25.00	

A fee in accordance with the following schedule shall be paid to the Fire Marshal's Office at the time application is made or upon receipt of invoice for the following inspection:

After hours testing and inspection - (Contractual overtime rate with a minimum of 4 hours)		
Carnivals or circus (including rides)	$50.00	
Theaters		
1) All theater having a seating capacity of 1000 or less	$75.00	/month
2) All theaters having a seating capacity of more than 1000	$75.00	/month
3) More than one theater in a single building	$75.00	/month
Explosive Magazine	$50.00	/annually

Paper copies of Records	**$.50**	**Per page**
Photos on CD/DVD	**$1 per**	**Per photo**
License Inspections for: Liquor, Daycare, Healthcare, Group Homes, and Business Schools	**$25**	**/annually***

***This $25 fee is only due if a re-inspection is required by FMO to verify fire code compliance. Fee will not be charged if initial inspection shows no fire code violations**

Hartford, Connecticut[28]

LUKE A. BRONIN
MAYOR

CITY OF HARTFORD

DEPARTMENT OF DEVELOPMENT SERVICES
Division of Licenses and Inspections
260 Constitution Plaza
Hartford, Connecticut 06103-1822

Telephone: (860) 757- 9200
Fax: (860) 722-6333
www.hartfordct.gov

ELDA SINANI
DIRECTOR OF LICENSES AND INSPECTIONS

***** FEE SCHEDULE ******
Effective August 6, 2018

Licenses and Inspections Permit Fees & Fines

Building, Electrical, Plumbing, Fire Suppression, Sign, Temporary Structure, Permit Fee	$50.26 for the 1st $1,000 of construction costs. $30.26 for each $1,000 thereafter
Demolition Permit Fee	$50.00 for the 1st $1,000 estimated cost $30.00 for each $1,000 thereafter
Certificate of Occupancy (CO)	$125.00
Certificate of Completion/Certificate of Approval (COC)	$50.00
Temporary CO (TCO)	$50.00 valid for one month
TCO Extension	$300.00 per additional month
Partial TCO	$50.00
Partial TCO Extension	$200.00 per addition month
Pre-Application Meeting for Permits	$200.00 first hour, $50.00 per 15 minutes thereafter
Mandatory Plan Review Fee (non-refundable)	10% of Total Projected Cost, for permits over $1 million
Demolition of residential units vacant less than 120 days	$2,500.00 per unit
Blight Remediation Citation Civil Penalty	Up to $100.00 per day
State Required Inspection Fee	$100.00

[28] https://www.hartfordct.gov/files/assets/public/development-services/dds-general/general-documents/fee-schedule.pdf

Land Use Regulations Fee Schedule

Zoning permits, Liquor Permits, Temporary Uses, Accessory Structures, Signage		S&C Fee
Zoning Permit	$100.00	Y
Accessory Uses and Accessory Structures Not Requiring Site Plan Review		Y
Temporary Outdoor Events		Y
Temporary Liquor Permit		
Permanent Liquor Permit	$250.00	
Signage (excluding Exempt Signs)	$250.00 base fee + $50.00 per additional sign	Y

Site Plan Review (per section 1.3.3)		S&C Fee
Household Living		
1-3 Unit Dwellings	$250.00	Y
4-20 Unit Dwellings	$625.00	Y
21+ Unit Dwellings	$1,000.00	Y
All Other Residential/Lodging Uses Civic & Institutional Uses Retail Uses Service uses, except Approvals of Location Employment Uses Infrastructure uses, except Transmission Towers Industrial Uses	</= 8,000 gsf: $250.00 >8, 000 gsf: $625.00 >50,000 gsf: $1,000.00 *Where no structure exists, these tiers shall be associated with the square footage of the lot, rather than the structure.*	Y
Approval of Location for Automobile-related Uses as Required by State Statute	$450.00	Y
Accessory Uses and Accessory Structures Requiring Site Plan Review, Other than Freestanding Radio or Wireless Towers or small Cell Nodes	$250.00	Y
Adult Uses	$1,000.00	Y
Transmission Towers, Freestanding Radio or Wireless Towers, and small Cell Nodes for New Location OR Modifications to Existing Location	$750.00	Y
Open Space Uses	$250.00	Y

**Where there are a mix of uses proposed, the higher fee shall be submitted, plus 50% of the fees required for any additional uses. Use-specific zoning and site plan fees do not include signage or liquor permit fees.*

***The zoning and site plan fees are per building, per structure, per use, and per zoning lot, whichever is applicable, except for principal and accessory uses included in the same application, in which case the fee for principal uses applies.*

****The Planning & Zoning Commission shall reasonably interpret the fee schedule for uses not listed in the zoning regulations but determined to be "substantially similar" per section 3.2.3.*

Planning & Zoning Commission Review		S&C Fee
Non- Public Hearing Application	$200.00 + applicable Site Plan Review Fee	
Public Hearing Application	$350.00 + applicable Site Plan Review Fee	
Campus Overlay Master Plan		
<2 acres	$750.00	Y
>/= 2 acres	$2,500.00	Y
Application for Text Change of Zoning Regulations	$1,000.00	Y
Application for Zoning Map Change	$750.00 per parcel	Y

Subdivision Regulations		S&C Fee
"First Cut" Subdivision creating no more than 2 lots Lot Line Revision Lot Combination	$250.00	Y
Subdivision Creating 3 or More Lots	$350.00 base + $150.00 per lot	Y
Application for Text Change of Subdivision Regulations	$250.00	Y
Violation of Subdivision Regulations	$500.00 per lot sold, offered for sale or subdivided	

Inland Wetlands & Watercourses Commission (IWW)		S&C Fee
Administrative Review/No Significant Impact (no public hearing)	$200.00	Y
Application Requiring Public Hearing <2 acres	$350.00	Y
Application Requiring Public Hearing >/= 2 acres	$700.00	Y
Application for Text Change of IWW Regulations	$250.00	Y
Violation of IWW Regulations	$1,000.00 per violation, per day; $1,000.00 per violation, per day plus up to 6 months imprisonment if willful; $2,000.00 per violation, per day violation after the first one cited	

Zoning Board of Appeals		S&C Fee
Appeal of Zoning Administrator or Zoning Enforcement Office by Applicant of Property	$200.00	Y
Appeal of Zoning Administrator or Zoning Enforcement Office by Aggrieved Party	$40.00	Y
Variance (other than Use Variance)	$350.00 per variance, per application	Y
Use Variance (request for a Use not permitted in the District where it is proposed to be located)	$750.00 per variance, per application	Y

Historic Properties and Preservation Commissions		S&C Fee
Application Requiring Administrative Review	$50.00	
Application Requiring Public Hearing	$200.00	
Violation of Historic Regulations	$100.00 per violation, per day; $250.00 per violation, per day if violation is willful	

General Fees	
Application for Time Extension for Any Approval, including time necessary to meet a condition of approval	$100.00
Additional Fee for Filing any Application After Receipt of an Order to Cease and Desist or an Official Violation of Land Use Regulations	$150.00
Deposit for Posted Notice Signage	$50.00
Zoning Verification Letter*	$50.00 per parcel
Additional Research Including but not limited to Special Permit, Variances, Other Zoning Approvals, Certificate of Occupancy, per parcel**	$150.00 for research involving 5 or fewer years and 5 or fewer documents; $25.00 for each additional year and for each additional document
Certificate of Nonconformance	$250.00
Certificate of Zoning Compliance Issued After Land Use Approval, and Before Certificate of Occupancy	Initial site visit no charge; $100.00 per subsequent inspection
Certificate of Zoning Compliance for existing Use, Unrelated to Land Use Approval (requires site plan application and on-site inspection)	Apply fee for Site Plan Review; initial site visit no charge; $100.00 per subsequent inspection
Written Determination of Site Plan Review Exemption	$40.00
Use on ON-Call Consultant Required, if applicable	Applicant invoiced for city's expense
State Soil & Conservation Fee ***	$58.00

**Zoning verification letter will indicate compliance with proposed use or use as stated by the requestor, and will indicate if there are known violations.*

***This fee does not include copies or scans of relevant documents. It does include the pulling of files for inspection in the office of the Department of Development Services.*

****The State fee of $58.00 has been incorporated into the overall fee displayed (i.e. a $1,000.00 site plan application represents a $942.00 fee for zoning review plus the State fee of $58.00).*

Tree-Related Fees (Administrated by City Forester and department of Public Works)	
Permit for Removal of Tree Subject to Tree Ordinance, or for Alteration/Destruction of City Tree	$10.00 per tree
Violation of Tree Ordinance (e.g. Unauthorized Removal, Alteration, or Destruction, or Failure to Protect Tree During Construction)	$250.00 per tree per day
Replacement of Trees Affected by Tree Ordinance Violations	Must be completed in accordance with Tree Ordinance

Maps, Publications, Copies, and Customer Service Charge (per copy)	
Maps printed larger than 11x17 (color, black & white)	$35.00
Maps printed 11x17 and smaller (color, black & white)	$5.00
Zoning Regulations (available color only)	$50.00
Inland Wetland Regulations (black & white)	$25.00
Subdivision Regulations (black & white)	$25.00
Mailing Fee for Application, Map, or Ordinance, first class mail	$10.00
Copies or scans of documents	Per City Ordinance; Large format copies see above

*For requests to have a map created or pertaining to GIS information, please contact MHIS directly or visit their website at www.hartfordct.gov/Government/Departments/MHIS.

Fees waived (with the exception of State fees) for applications from City of Hartford departments, agencies, boards (including Board of Education), and commissions.

Manchester, Connecticut[29]

MANCHESTER FIRE DEPARTMENT

Eighth Utilities District

FIRE MARSHAL'S OFFICE
18 Main Street
Manchester, CT 06042

District Application #	*Plan Review:* Denied_____ Approved_____ *Certificate of Occupancy / Completion:* Approved_____	*Building Department #*

PROJECT NAME _____

JOB LOCATION _____
(ADDRESS) *(SUITE / SPACE)*

DESCRIPTION OF WORK _____ COST _____

APPLICANT NAME (Contact Name) _____

ADDRESS _____
(STREET) *(CITY / TOWN)* *(STATE)* *(ZIP CODE)*

TELEPHONE _____ FAX _____

E-MAIL _____ SIGNATURE _____

OWNER _____ TELEPHONE _____

ADDRESS _____
(STREET) *(CITY / TOWN)* *(STATE)* *(ZIP CODE)*

FEES FOR PLAN REVIEWS ARE BASED ON THE VALUE OF WORK.

Value - $0.00 up to and including $4,000.00 = Fee - $20.00

In excess of $4,000.00 = $20.00 plus $7.00 per $1,000.00 or portion thereof in excess of $4,000.00.

Please make checks payable to: ***EIGHTH UTILITIES DISTRICT***

NOTE: Additional fee may apply based upon the final cost affidavit submitted to the Town of Manchester Building Department.

For Office Use Only

FEE $ _____ CHECK # _____ CASH _____

RECEIVED: DATE _____ BY _____

ADDITIONAL PERMIT FEES

PERMITS REQUIRED BY:

The fees to be charged for such a permit and registration shall be $20.00

- The Connecticut Flammable and Combustible Liquid Code
- The Connecticut Liquefied Petroleum Gas & Liquefied Natural Gas Code
- The Connecticut Tent and Portable Shelter Code
- Tank Removal
- Tank Truck Inspection
- The Code for Storage, Transportation and Use of Explosive and Blasting Agents* *The fees to be charged for such a permit and registration shall be $60.00*

****

PLAN REVIEW APPLICATIONS FOR:

- Sign Permits
- Fixture and Furniture Permits

The fees to be charged for such a permit shall be $20.00

****

INVENTORY OF SPARKLERS AND FIREWORKS

A permit fee of $125.00 shall be charged each time an inventory of sparklers or fireworks is introduced into a building or onto a site for display or sale. The permit fee shall be in addition to the fee for any permit under The Connecticut Tent and Portable Shelter Code.

APPLICATION PROCESS: Applications can be dropped off, or mailed to the **Eighth Utilities District, 18 Main Street, Manchester, Ct. 06042** or faxed to **860-649-4032**.
WE DO NOT ACCEPT APPLICATIONS or PAYMENT ELECTRONICALLY.
Please make checks payable to the **Eighth Utilities District**.

[29] Manchester Fire Department

APPLICABLE STANDARDS

Plans submitted will be reviewed for compliance with applicable building, fire, and life safety codes. *Connecticut General Statute Sec. 29-292-13e* provides a full list of referenced publications. These include but are not limited to:

- 2018 Connecticut Fire Prevention Code
- 2018 Connecticut Fire Safety Code
- 2018 Connecticut State Building Code
- 2013 NFPA 13: Standard for the Installation of Sprinkler Systems
- CGS 29-320 Connecticut Flammable and Combustible Liquids Code
- CGS 29-329 Connecticut Gas Equipment and Piping Code with Amendments
- 2013 NFPA 72: National Fire Alarm Code
- 2017 NFPA 70: National Electric Code as amended by the State Building Code

For additional referenced publications please call our office at 860-643-6209 or check our website, **MANCHESTERFMO.ORG** for links to all NFPA Standards and other references.

This review in no way relieves the applicant, architect, or engineer the responsibility of having his or her design meet all requirements of these codes and any other applicable adopted standards.

MANCHESTER FIRE DEPARTMENT
Eighth Utilities District

FIRE MARSHAL'S OFFICE
18 Main Street
Manchester, CT 06042

NOTICE TO APPLICANTS FOR PLAN REVIEW

Avoid delays to the start of your project!

When making out applications for plan reviews, the submissions should be made to the Fire Marshal's Office and the Town of Manchester Building Department (Lincoln Center – 494 Main Street) simultaneously.

By submitting the required documents at the same time, serious delays can be avoided.

Both the Connecticut Fire Safety Code and the Connecticut Building Code allow up to 30 days to act on applications.

Meriden, Connecticut[30]

Fire Marshal's Office

City of Meriden

Fees for Services

Effective Date January 1, 2019
(Revised 5/17/19)

NEW

Plan Review Fees for **new** construction, renovations, additions or modernization of buildings or structures. (NOTE: A Building Permit Application submitted without plans, charge Certificate of Occupancy Fee only.)

Fire Plan Review Code Consulting Meeting (Not Including R-3 Occupancies – *Note CT Specific Language)	65% of the Building Permit Fee (100% for "Fast Track" Review) $150.00 Per Hour w/ a Two (2) Hour Minimum
Mechanical Plan Review (Fire Protection Systems – Sprinkler Systems, Commercial Cooking & Flammable/Combustible Liquid Tanks) (Not Including R-3 Occupancies - *Note CT Specific Language)	100 % of the Building Permit Fee (135% for "Fast Track" Review)
Electrical Plan Review (Fire Protection System – Fire Alarm, Detection Systems & PV Solar Systems) (Not Including R-3 Occupancies - *Note CT Specific Language)	35% of the Building Permit Fee (70% for "Fast Track" Review)

Fast track inspections will be completed within seven (7) business days.

1

[30]https://www.meridenct.gov/Customer-Content/www/CMS/files/Fire_Department/FireMarshal/Fee_for_ServicesMay.pdf

NEW

Certificate of Occupancy Fees for **new** field inspections, approval, acceptance and applications submitted without plans.

Floor Area	
0- 10,000 sq. ft.	$100.00
10,001 – 25,000 sq. ft	$200.00
25,001 – 50,000 sq. ft.	$300.00
50,001 – 100,000 sq. ft.	$500.00
100,001 – 200,000 sq. ft.	$750.00
Greater than 200,001 sq. ft.	$1,000.00
Temporary Structures (Tents and Other Membrane Structures as defined by the CT State Fire Safety Code)	$75.00 per Structure
Manufactured Structures	$75.00 per Structure
Commercial Kitchen Hoods: 1. Type I 2. Hood Suppression System 3. Type II Other Fire Suppression (wet or dry systems, separate from a full building fire suppression system) Propane Dispensing Recreational Fire Permits Motor Fuel-Dispensing Facilities (New, Renovation and Replacement of UST/AST and all Associated Pumps & Piping)	 $50.00 $25.00 $25.00 $50.00 $25.00 $20.00 $375.00

2

Blasting Permit	$60.00 per CGS

Re-Inspection for Failed Inspections…$35.00
Missed (No Show) Inspections Fee…$75.00

EXISTING

Reoccurring Inspections for **existing** occupancies and operations.

Occupancy Inspection Fees Per the Connecticut State Fire Safety Code	0 – 1,000 sq. ft. @ $25.00 1,001 – 2,000 sq. ft. @ $30.00 2,001 – 3,000 sq. ft. @ $35.00 3,001 – 4,000 sq. ft. @ $40.00 4,001 – 5,000 sq. ft. @ $45.00 5,001 – 6,000 sq. ft. @ $50.00 6,001 – 7,000 sq. ft. @ $55.00 7,001 – 8,000 sq. ft. @ $60.00 8,001 – 9,000 sq. ft. @ $65.00 9,001 – 10,000 sq. ft @ $70.00 Greater than 10,001 sq. ft. @ $100.00
Day Camp Inspection	$50.00
Occupancy File Research Request	$650.00
Recreational Fire Permit	$20.00 for a Biennial Permit
Flammable & Combustible Liquid Dispensing Facilities (Gas Station)	$25.00 per Liquid Classification for an Annual Permit (Plus Occupancy Inspection Fee)
Propane Dispensing	$25.00 per Facility (Plus Occupancy Inspection Fee)
Required State of Connecticut Local Fire Marshal Approval Certifications	$50.00 per Certificate (Plus Occupancy Inspection Fee) Occupancy inspection fee will be based on the actual square footage of the occupancy requiring the state certification.
Rooming House License, Food Service License, Barber Shop / Hair Dressing License & Cosmology License	$25.00 per License (Plus Occupancy Inspection Fee)
Consumer Fireworks Sales (1.4G)	$75.00 (Plus Occupancy Inspection Fee)

Missed (No Show) Inspections Fee…$75.00

***City of Meriden owned properties are exempt from the fee schedule. If a third party rents, leases or occupies space within a city building then the fee schedule shall apply to the third party.**

***Square footage fee calculations for new construction, renovations, additions or modernization of buildings or structures shall be based on the latest submitted construction documents.**

***Square footage fee calculations for existing buildings will be based on the City of Meriden Assessor's Card Finished Area.**

***Building Department fees shall be calculated by the City of Meriden Building Official.**

Billing & Enforcement

a) No permit, license, certificate, or approval shall be issued to any party prior to the collection of such fee(s) required by this schedule.
b) The City of Meriden may take all enforcement action necessary to secure payment of the delinquent bill of costs, including authorization of the City Attorney to bring action for payment in a court of law.
c) All fees shall be payable by CHECK, MONEY ORDER or CASHIER'S CHECK made out to "City of Meriden".

New Britain, Connecticut[31]

Sec. 8-35. Same—Fees for inspections and permits.

The fire prevention bureau shall charge the fees set out below for certain inspections and permits:

(a) *Types of licensing.*

Communications: Fee

Blasting permits $60.00

Day care centers 50.00

Liquor licenses 50.00

Dry cleaner and coin-operated 50.00

Flammable gas exchange/refilling/storage 50.00

[31] https://library.municode.com/ct/new_britain/codes/code_of_ordinances?nodeId=COOR_CH8FIPRPR_ARTIIIFIDE_DIV1GE_S8-35SAEEINPE

Underground storage tanks installation/removal 50.00

New construction (final inspection) 50.00

One day liquor or beer permits 20.00

Carnivals, circus, festivals, and/or events 20.00

Health care 50.00

Incident reports (per page) 1.00

Investigation reports (total) 250.00

Burn permit (three (3) days) 50.00

Lodging and rooming 50.00

Gas stations 50.00

Retail fireworks/sparkler vendor 200.00

Residential board and care 50.00

Nursing and convalescent 50.00

Anything that requires a state license not mentioned above 50.00

(b) (1) The fees for blueprint plan review shall be on a graduated schedule as follows:

Value of building and/or property which is subject to plan review:

Fees

1. $0.00 through $1,000.00 ..... $0.00
2. $1,001.00 through $50,000.00 (per 1,000) or part thereof) 3.00
3. In excess of $50,000.00 (per 1,000 or part thereof) 6.00

Example:

Value Fees

1. $1,000.00 ..... $0.00
2. $50,000.00 ..... 150.00
3. $75,000.00 ..... 450.00

(2) The fees for blueprint plan review performed by the fire prevention bureau will be collected by the department of licenses, permits and inspections at the same time fees are collected for the services provided in chapter 7, article I of this Code.

(Code 1970, § 10-6(a); Ord. of 4-82; No. 26826-1, 2-13-02; No. 27455-1, 5-14-03; Res. No 33896-2, 9-18-17)

Cross reference(s)—Licenses, permits and miscellaneous business regulations, Ch. 14Cross reference(s)—.

Sec. 8-36. Open burning permit.

(a) *Definitions.* [The following words, terms, and phrases, when used in this section, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:]

Applicant shall mean the person making the open burning permit application and who will be responsible for the open burning.

Brush includes shrubs, vegetation, or prunings, the diameter of which is not greater than three (3) inches at the widest point.

Building shall mean any structure that is enclosed by a roof and walls.

Open burning nuisance shall mean any discharge into the open air of any smoke, soot, dust, fumes, odors, or other emissions which cause injury, detriment or annoyance, or which endanger the comfort, repose, health, or safety of the public or which cause, or are likely to cause, injury or damage to business or property.

Open burning official shall mean any such official who has been duly nominated and authorized by the mayor in accordance with section 22a-174 of the Connecticut General Statutes.

(b) *Fees for inspections and permits.*

Open burning permit $25.00.

(c) Open burning without a permit (excluding the use of outdoor wood-burning stoves) shall be prohibited within the City of New Britain and a penalty of ninety-nine dollars ($99.00) or imprisonment for not more than six (6) months or both shall be imposed for the said violation.

(d) *Enforcement.* Enforcement of this article shall be carried out by the New Britain Police Department.

(e) *Kindling fire in the open.* No person shall ignite, cause to be ignited, permit to be ignited or maintain any open fires except as permitted within this article.

(1) Under no circumstances, whether or not a permit has been required or issued, shall a person ignite, cause to be ignited, permit to be ignited or maintain any open fire within the limits of any public road or right-of-way.

(2) Whether or not a permit has been required or issued, no person shall ignite, cause to be ignited, permit to be ignited or maintain any open fire, nor shall any person authorize others to do so on land owned or controlled by him, in such a manner as to allow such fire to burn out of control so as to require response of fire department personnel or fire apparatus.

(3) Open burning must be performed in accordance with the appropriate permit from the local open burning official.

(f) *Open burning official.*

(1) The mayor shall designate an open burning official(s), who is certified in accordance with section 22a-174 of the Connecticut General Statutes and duly authorized to issue written open burning permits as provided in such regulations.

(2) The designated open burning official(s) will carry out their duties until replaced by the mayor.

(3) Following a change of mayor, the new mayor is required to confirm the status of the previously designated open burning official with the department of environmental protection.

(4) No person shall ignite, cause or permit to be ignited or maintain any open fire whether or not a permit has been required or issued by the open burning official during the first or any other stage of an air

pollution emergency situation as declared by the Commissioner of the Connecticut Department of Environmental Protection unless otherwise permitted to do so.

(5) No person shall ignite, cause or permit to be ignited or maintain any open fire whether or not a permit has been required or issued by the open burning official during periods of extreme fire danger. The open burning official shall have the power to ban all outside fires at his/her discretion.

(g) *Fire marshal open burning permits.* Open burning permits for premises classified in this subsection shall be allowed only after the permission the Fire Marshal for the City of New Britain or designee is obtained in accordance with this article. These situations are specific to:

(1) The open burning of "brush" in municipal landfills.

(2) Municipal transfer stations.

(3) Municipal recycling centers.

(h) *Open burning permit requirements.* The open burning official may issue such further conditions to an open burning permit at the time of issuance of the open burning permit or afterwards, if considered necessary to avoid the creation of an open burning nuisance situation or to protect property, the environment or public health and safety by specifying the following conditions:

(1) The materials and quantities of materials to be burned.

(2) The hours and days during which open burning is allowed.

(3) Any other conditions allowed under section 22a-174 of the Connecticut General Statutes or city ordinances.

(i) *Open burning on residential property.* Open burning on residential property shall be allowed only in accordance with the following conditions after an applicant obtains an open burning permit:

The applicant must be a resident or an authorized agent of a resident of the property where the open burning will occur. The city's open burning official may require proof of residency or proof that the open burning is being requested for:

(1) Fire training exercises.

(2) Eradication or control of insect infestations or disease.

(3) Agricultural purposes. (Agricultural burning for vegetation management shall only be performed on those properties designated as "farmland" by the Assessor's Office for the City of New Britain).

(4) Clearing vegetative debris following a natural disaster.

(5) Vegetative management, enhancement of wildlife habitat.

(j) *Open burning limitations.*

(1) Open burning must take place between the hours of 10:00 a.m. and 5:00 p.m. No visible embers, flame or smoke may be present after 5:00 p.m.

(2) Open burning shall only be permitted on sunny or partly sunny days when the wind speed is five (5) to fifteen (15) miles per hour, except that fire training exercises shall not be subject to this condition.

(3) Open burning of brush may only occur on residential property that contains one (1) or two (2) residential units.

(4) The open burning permit applicant must have a copy of the open burning permit in his or her possession at the time of the open burning.

(5) An open burning permit is applicable only for the date specified within the open burning permit.

(6) The open burning permit may be revoked in writing by the open burning official or the environmental protection agency commissioner for the violation of any provision of this article or section 22a-174 of the Connecticut General Statutes regulations.

(k) *Actions before open burning commences.*

(1) The applicant must contact the open burning official or such other person listed on the open burning permit twenty-four (24) hours prior to the ignition of the open burning activity and leave the following information. Applicant's name, telephone contact number, and the time and location of the open burning activity.

(2) Reasonable safety precautions must be taken, including clearing of grass and trees in the burning area, providing a charged water hose or fire extinguisher, and providing adequate personnel to control the burn.

(3) The open burning site must be a minimum of twenty-five (25) feet from any property line and twenty-five (25) feet from any building, no other combustible material within twenty (20) feet of the allowed burn.

(4) No brush pile larger than ten (10) feet by ten (10) feet by three (3) feet may be burned at anyone (1) time. Brush must originate from the property on which the open burning will occur.

(l) *Open burning protocols.* The following conditions are imposed on all approved open burning activities:

(1) No open burning shall create an "open burning nuisance" situation.

(2) A responsible adult shall tend to the open burning at all times.

(3) No open burning shall be allowed to burn out of control so as to require the response of fire personnel and/or apparatus; the burn official, fire chief or fire marshal shall make the determination whether a fire has been allowed to burn out of control.

(m) *Open burning exemptions.* The provisions of this article shall not apply to the following:

(1) Barbecues or other outdoor fires solely for the cooking of food for human consumption, provided that it is performed in or on a fireplace or an appliance manufactured for such a purpose.

(2) Campfires, (not exceeding four (4) feet in any direction) bonfires, or other types of fires made out of non-processed wood for recreational or ceremonial purposes, provided that the size of the fires does not exceed four (4) feet in any direction and written permission is obtained from the property owner prior to ignition.

(3) Fires used in conjunction with construction activities, such as fires in portable heating devices fires, e.g., "salamanders" or vessels that are essential to street installation or paving activities, the repairing of utilities or similar work.

(4) Warming fires utilized at stationary construction sites shall be conducted in a barrel or similar container.

(5) Agricultural burning for vegetation management shall only be performed on those properties designated as "farmland" by the Assessor's Office for the City of New Britain.

(6) Fire breaks for the purpose of controlling forest/grass fires, provided authorized firefighting personnel carry out these actions.

(n) *Open burning requirements for New Britain schools.* The provisions of this article shall apply to the following premises:

(1) An open burn permit must be obtained as per this article for all New Britain school open burning activities.

(2) The applicable open burning permit fee applies to all applications for open burning activities.

(3) The open burn official must be informed of the name of the school and occasion for the open burn/bonfire activity.

(4) The burn official will ensure special arrangements are in place and the fire department notified prior to the commencement of any New Britain school open burning activities.

(5) Open burning time restrictions specified within subsection (j) of this section can be lifted by the open burning official for any New Britain school open burning activities.

(o) *Open burning violations.* The following activities are prohibited in all circumstances:

(1) The burning of weeds, grass, leaves, processed wood, garbage, paper, metals, plastics, rubber, painted materials, manmade waste, or demolition waste.

(2) The open burning of brush when national or state ambient air quality standards may be exceeded.

(3) The open burning of brush where a hazardous health condition might be created.

(4) The open burning of brush when the forest/grass fire danger in the area is identified by the commissioner for the department of environmental protection or the city's burn official as extreme, or where woodland and grassland is within one hundred (100) feet of the proposed open burning area.

(5) The open burning of brush when there is an advisory from the commissioner of the department of environmental protection or burn official of any air pollution episode.

(6) Open burning within the limits of any public road or public right-of-way.

(7) The open burning of brush on commercial or industrial properties, vacant lots, or on properties.

(8) Creating an open burning nuisance situation. The discharge into the open air of any smoke, soot, dust, fumes, odors or other emissions which cause injury, detriment or annoyance, or which endanger the comfort, repose, health, or safety of the public or which cause, or are likely to cause, injury or damage to business or property.

(p) *Violations and penalties.*

(1) Evidence of violations. A determination by the fire marshal's office, burn official or fire chief on the question of whether a fire has been allowed to burn out of control so as to cause response of fire apparatus and/or fire personnel shall be prima facie evidence on such questions in any prosecution under the provisions of this article.

(2) The open burning official, fire marshal, fire chief or any officer of the fire department, the director of health, or his designee, or any sworn officer of the police department may require any person who ignites or maintains a fire in violation of the provisions herein to extinguish such fire forthwith. Failure to extinguish such fire shall be a violation of this article.

(3) Any person who fails to comply and violates any provision of this article shall be fined ninety-nine dollars ($99.00) or imprisoned for not more than six (6) months or both shall be imposed by the New Britain Police Department for the said violation.

(4) The open burning official may seek enforcement of the provisions of this article by injunction, and, in such an event, the violator shall pay the City of New Britain reasonable attorney's fees.

(Res. No. 31136-2, 10-13-10)

Sec. 8-37. Collection of funds for hazardous material response and special rescue operations.

(a) *Purpose.* Environmental protection requirements involving equipment and training and Homeland Security regulations involving equipment and training have creating additional demands on all operational aspects of the New Britain Fire Department services. The fire department has investigated different methods to maintain the quality of emergency and non-emergency service capability throughout times of constantly increasing service demands, where maintaining an effective response by the fire department decreases the costs of incidents to insurance carriers, businesses, and individuals through timely and effective management of emergency situations, saving lives and reducing property and environmental damage. The City of New Britain desires to implement a fair and equitable procedure by which to charge mitigation rates for the provision of certain emergency services to the responsible parties so that these costs do not have to be borne by the property owners of the city.

(b) *Mitigation charges.* The fire department shall charge mitigation rates for the delivery of emergency services by the fire department for personnel, supplies and equipment to the scene of motor vehicle incidents and other emergency services as listed in subsection (e). The mitigation rates shall be based on actual costs of the services and that which is usual, customary and reasonable as further described herein.

(c) *Claim costs.* Mitigation rates charges shall be recovered by the fire department from parties benefitting from such services and shall represent an add-on cost to claims for damages for vehicles, property and/or injuries as applicable. The claim costs shall be filed against the insurance coverage of the owner of a vehicle, owner of property, or other responsible parties utilizing services subject to mitigation rate charges. Responsible parties may be billed directly where insurance coverage does not exist or is inadequate.

(d) *Application.* Unless otherwise specified by this section, mitigation rates shall only be charged to persons who are not residents of the city. Notwithstanding the foregoing, fire department responses involving intoxicated drivers, hazmat clean-up, intentional and negligent acts or any act that violates any ordinance, local, state or federal statute may be subject to all applicable mitigation rates regardless of the residency of the parties. For the purpose of this section, a resident is defined as (i) any person who maintains his or her full time resident within the City of New Britain; or (ii) any person who is the majority owner of a business that operates primarily from real property owned by the business located within the city. For the purpose of this section, a business includes any joint stock company, corporation, association, joint venture, limited liability company or partnership.

(e) *Fees.* The following mitigation rates will be charged on a per hour basis:

(1) *Motor vehicle incidents.*

Level 1 - Four hundred thirty-five dollars ($435.00)

Provide hazardous materials assessment and scene stabilization. This will be the most common "billing level".

Level 2 - Four hundred ninety-five dollars ($495.00)

Provide Level 1 services as well as clean up and material used for hazardous fluid clean up and disposal. Hazardous materials shall include but not be limited to gasoline and other automotive fluids.

Level 3 - Six hundred five dollars ($605.00)

Provide scene stabilization, fire suppression, breathing air, rescue tools, hand tools, hose, tip use, foam, structure protection, and clean up gasoline or other automotive fluids that are spilled as a result of vehicle fire related to an accident or incident.

Level 4 - One thousand eight hundred dollars ($1,800.00)

Provide Level 1 and 2 services as well as extrication using heavy rescue tools, ropes, airbags, cribbing etc. Mitigation rates charged only if equipment is deployed to free or other remove individuals from vehicles.

Level 5 - Two thousand two hundred dollars ($2,200.00)

Provide Level 1, 2 and 4 services as well as air care, multi-engine company response, mutual aid, and helicopter services.

Level 6 - Itemized response. The fire department may bill each incident as an independent event with custom mitigation rates for each incident using itemized rates deemed usual, customary and reasonable. Bills associated with such incidents shall be itemized per apparatus, per personnel, plus products and equipment used.

(2) *Hazmat.*

Level 1 - Seven hundred dollars ($700.00)

Basic response: Provide engine response, first responder assignment, perimeter establishment, evacuations, set-up and command.

Level 2 - Two thousand five hundred dollars ($2,500.00)

Intermediate response: Provide engine response, first responder assignment, hazmat certified team and appropriate equipment, perimeter establishment, evacuations, set-up and command, Level A or B suit donning, breathing air and detection equipment. Set-up and removal of decontamination centers, detection equipment, recovery and identification of materials involved.

Level 3 - Five thousand nine hundred dollars ($5,900.00)

Advanced response: Provide engine response, first responder assignment, hazmat certified team and appropriate equipment, perimeter establishment, evacuations, first responder set-up and command, Level A or B suit donning, breathing air and detection equipment and robot deployment. Set-up and removal of decontamination centers, detection equipment, recovery and identification of material. Post response disposal and environment clean up. Includes above in addition to any disposal rates of material and contaminated equipment and material used at scene and environmental cleanup as needed. The charge associated with this level covers three (3) hours of on scene time. Beyond three (3) hours, three hundred dollars ($300.00) per hour per HAZMAT team deployed.

(3) *Fire investigation.* Fire investigation team - Two hundred seventy-five dollars ($275.00) per hour. Includes scene safety, investigation, source identification, K-9/arson dog unit, identification equipment, mobile detection unit, fire report. Fire investigator responds to the incident and is billed for logged time only.

(4) *Fires.* Each assignment - Four hundred dollars ($400.00) per hour, per engine/five hundred dollars ($500.00) per hour, per truck. Provide scene safety, investigation, fire and hazard control.

(5) *Water incidents.*

Level 1 - Billed at four hundred dollars ($400.00) base plus fifty dollars ($50.00) per hour per rescue person. Basic response. Provide engine response, first responder assignment, perimeter establishment, evacuations, first responder set-up and command, scene safety and investigation (including possible patient contact, hazard control).

Level 2 - Intermediate response: Billed at eight hundred dollars ($800.00) base plus fifty dollars ($50.00) per hour, per rescue person. Includes Level 1 services as well as clean up and material used in clean up, minor hazardous material clean up and disposal.

Level 3 - Advanced response: Billed at two thousand dollars ($2,000.00) base plus fifty dollars ($50.00) per hour, per rescue person plus one hundred dollars ($100.00) per hour per HAZMAT team member. Includes Level 1 and Level 2 services as well as D.A.R.T. activation, donning breathing apparatus and detection equipment. Set up and removal of decontamination centers, detection equipment, recovery and identification of materials involved. Post response disposal and contaminated equipment and materials used at scene and environmental cleanup.

Level 4 - Itemized response: The fire department may bill each incident as an independent event with custom mitigation rates for each incident using itemized rates deemed usual, customary and reasonable. Bills associated with such incidents will be billed, itemized, per apparatus, personnel, products and equipment used.

(6) *Special rescue.* Itemized response. Minimum billed four hundred dollars ($400.00) for the first response vehicle plus fifty dollars ($50.00) per rescue person. Additional rates of four hundred dollars ($400.00) per hour per response and fifty dollars ($50.00) per hour per person. Each incident will be billed with custom mitigation rates deemed usual, customary and reasonable. Bills associated with such incidents will be billed, itemized, per apparatus, personnel, products and equipment used.

(f) The mitigation rates above are average charges and are typical for the incident responses listed. When a claim is submitted, it will be itemized and based on the actual services provided.

(g) This [section] shall take effect thirty (30) days from the date of adoption as permitted by law.

(h) Any individual charged mitigation rates under the provisions of this section may appeal each bill issued to a hearing officer in accordance with section 1-17 of this Code of Ordinances. An appeal must be submitted within ten (10) days of receipt of the bill pursuant to this section.

(Res. No. 34680-2, 5-13-19)

South Windsor, Connecticut[32]

Exhibit J

Town of South Windsor
1540 SULLIVAN AVENUE • SOUTH WINDSOR, CT 06074
TELEPHONE (860) 644-2511

Building Department

PERMIT FEE SCHEDULE
September 5, 2017

Building Permit: $60.00 for the first $2,000 of estimated cost
$18.00 per thousand over $2,000 of estimated cost

Mechanical Permits: $18.00 per thousand of estimated cost

Certificate of Occupancy Fee: $30.00

Moving of Buildings: $18.00 per thousand of estimated cost

Demolition: $18.00 per thousand of estimated cost

Signs: $18.00 per thousand of estimated cost

Engineering Certificate of Occupancy Inspection Fee: $40.00/Residential
$60.00/Commercial

Fees include State of Connecticut mandated fees or charges which is $0.26 per thousand as of this date

[32] https://www.southwindsor-ct.gov/sites/g/files/vyhlif3831/f/news/town_fee_schedule.pdf

Exhibit K

Town of South Windsor

1540 SULLIVAN AVENUE • SOUTH WINDSOR, CT 06074
TELEPHONE (860) 644-2511

Engineering Department

FEE SCHEDULE
Effective September 5, 2017

General Excavation Permit	$50
Drain Layers Permit	$80

Copying Fees:

24 x 36	$10/page
11 x 17 b&w	$0.50/page
11 x 17 color	$0.50/page
8.5 x 11 b&w	$0.25/page
8.5 x 11 color	$0.50/page

GIS Copies Fees:

8.5 x 11	$3.00/page
11 x 17	$5.00/page
24 x 36	$20.00/page

Map Copies Fees:

8.5 x 11	$0.25/page
11 x 17	$0.50/page
18 x 24	$5.00/page
24 x 36	$10.00/page

GIS Layer Copies

Parcels	$150.00
Grand List Assessor	$ 50.00
Historic District	$ 50.00
Landmark TOL	$100.00
Zoning	$100.00

Fees do not include State of Connecticut mandated fees or charges

Exhibit I

Town of South Windsor
1540 SULLIVAN AVENUE • SOUTH WINDSOR, CT 06074
TELEPHONE (860) 644-2511

Fire Marshal Department

PERMIT FEE SCHEDULE
September 5, 2017

Blasting Permits: $60.00

Tents (100 or more occupants): $50.00

Pyrotechnic/Special Effects: $50.00

Special Events, carnivals, fairs: $50.00

Fees do not include State of Connecticut mandated fees or charges

Exhibit H

Town of South Windsor
1540 SULLIVAN AVENUE • SOUTH WINDSOR, CT 06074
TELEPHONE (860) 644-2511

Fire Marshal Department

PLAN REVIEW FEE SCHEDULE
September 5, 2017

Plan Review Fee: $7.00 per thousand of estimated cost stated on building permit application

Fees do not include State of Connecticut mandated fees or charges

Exhibit L

Town Of South Windsor
Health Department
1540 Sullivan Ave.
South Windsor, CT. 06074

PERMIT / PLAN REVIEW FEE SCHEDULE
September 5, 2017

Annual Food Service Establishment Permit:

Class 1	$75.00
Class 2	$125.00
Class 3	$200.00
Class 4 (1-25 seats)	$225.00
Class 4 (26-49 seats)	$250.00
Class 4 (50+ seats)	$275.00

*Seasonal Food Service Establishment Permit (open less than 6 months annually) will be 50% of the annual class fee.

Catering Permit:	$200.00	
Temporary Event / Farmer's Market:	$50.00	*non-profit organizations exempt*
Itinerant Permit:	$100.00	
Food Service Plan Review:	$150.00	
Reinspection Fee:	$100.00	
Well Permit:	$50.00	
Septic Permit (new)	$200.00	
Septic Permit (repair)	$100.00	
Pit/Perc Testing (3 per property)	$100.00	
Plan Review Per Lot	$200.00	
B100a	$50.00	
Pool Inspection:	$100.00	
Hotel/Motel Inspection:	$250.00	
Daycare Inspection:	$50.00	
Cosmetology Inspection:	$50.00	
Tattoo Filing Fee	$50.00	

Fees do not include State of Connecticut mandated fees or charges

Exhibit M

Town of South Windsor
1540 SULLIVAN AVENUE • SOUTH WINDSOR, CT 06074
TELEPHONE (860) 644-2511

Inland-Wetlands Agency

Fee structure:
Effective September 5, 2017

Single-family residential parcel..... $ 50.00
Site plans..... $ 200.00
Subdivision plans..... $ 300.00
Plus, per lot..... $ 50.00
Additional fee for significant activity..... $ 300.00
Map amendment (single-family residential lot)..... $ 25.00
Map amendment (other than single-family residential lot)..... $ 200.00
Minor modifications of permit..... $ 50.00

Fees do not include State of Connecticut mandated fees or charges

Planning and Zoning Department

Zoning Permit:	
New commercial/industrial	$ 50
New single-family house	$ 35
Multi-family unit, in-law/ accessory apt	$ 25
Minor home occupation	$ 25
Sign permit	$ 25
Sign permit – replacement	$ 10
Zoning Certificate of Occupancy (commercial/Industrial Sites)	$ 30
New single-family house	$ 25
Multi-family unit, in-law/ accessory apt	$ 25
Zoning Compliance Letter	$ 25
Bond Procession Fee	$ 25 non refundable
Lot split/Lot line revision	$50
Change Order	$10 (minor); $50 (major)

Engineering Subdivision Review and Inspection Fee:

(a) All the review and quality control inspections by the Engineering Department of the Town are required in connection with the approval of a subdivision in which public improvements will become Town property and major commercial/multi-family developments, the applicant shall pay an additional processing fee to defray the costs of said review and quality control inspections. Said additional processing fee shall be in the amount of one percent (1%) of public and/or private improvements site costs. This fee shall include a review of the initial plans submitted and the first set of revised plans submitted for review after receiving comments from the Town.

Technical Consultant Fee:

(a) When the Director of Planning determines that, in order to fully and properly review and evaluate an application, the Town would require the technical services of an outside consult in the areas of, but not limited to, traffic engineering, architecture, landscaping, civil engineering, etc, the entire fee for such services shall be borne by the applicant.

(b) Upon completion of the technical review and determination of the cost, all fees for any technical services required in section (a) shall be paid in full before the application is acted on by Planning Commission.

Pricing for Regulations/Maps

Zoning Regulations with 11"x17" Map.....$15
Zoning Maps – 11" x 17" Color $5
Subdivision Regulations $6
Wetlands Regulations with Map.....$8
Town Plan of Conservation & Development.....$15
Public Improvement Specs .....$10 or with CD $25
Scanning of Records .....$20 per visit
Digital Copy of Meeting Flat Fee .....$10 per meeting (Must provide USB).

Note: PZC Land Use Application Fees Established through the Zoning Regulations

Appendix E: Table of Figures