



Hagerstown Fire Department

Strategic Staffing Plan

2017-2018 Managing Officer Capstone Project

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August 17, 2017

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INTRODUCTION

The City of Hagerstown

Located where Interstates 70 and 81 meet, the City of Hagerstown is home to 40,295 citizens in the western portion of the state of Maryland within Washington County. With the population of Washington County being 149,585, Hagerstown makes up almost one third of the county's population.

The City of Hagerstown is very diverse, both in population and the amenities it offers. The downtown looks like what many would call "Main Street U.S.A.," consisting of many buildings with small shops, boutiques or restaurants located on the first floor with multiple levels of apartments above. Many of these buildings are of Ordinary Construction.

The Downtown core boasts a very prominent Arts and Entertainment District. This area houses the Renowned Maryland Theater, art galleries and restaurants. Within the immediate area of this core the City has recently shifted its focus to providing top level educational opportunities for its citizens. The Barbara Ingram School for the Arts, as well as the University Systems of Maryland at Hagerstown, have made their home within the downtown to make education accessible to the citizens of both the city and the county. These educational outlets have spurred an increased number of apartment buildings within the downtown that have been purchased and renovated to provide housing for students attending these facilities. Additionally, several parks, including the award-winning Hagerstown City Park, draw visitors to town.

Outside of the downtown, a mix of both residential and commercial rounds out the City. To the East and the West one will find a vast array of business, ranging from the mom and pop stores to the large commercial big box stores, such as Walmart and The Home Depot. The City of Hagerstown offers a wide range of residential living. Ranging from large Victorian era homes with long offsets from the street to smaller duplexes and multi-unit apartment complexes, each of which offers its own set of unique challenges to the Hagerstown Fire Department.

History of the Hagerstown Fire Department

The history of the Hagerstown Fire Department spans over 220 years. The first fire company in existence within the City was the United Fire Company, in existence until around 1814. In 1817, the Hagerstown Fire Company was formed by a group of citizens, some of whom were past members of the United Fire Company. By 1824 there were three fire companies that had been formed within the City, The First Hagerstown Hose Company (incorporated in January 1823), The Washington Mechanic Fire Company, and the Franklin Union Fire Company. By 1842, The Washington Mechanic Fire Company had ceased to exist, being replaced by the Antietam Fire Company. In 1842, younger members of the Franklin Union Company made a pitch to City officials to turn over fire equipment to their group so they could form the Independent Junior Fire Company. The Western Enterprise Fire Company and the Pioneer Hook

and Ladder Company both became part of the Hagerstown Fire Department by 1872. The Colombian Chemical Company, located on what is now High Street, was formed in 1894 because of expansion of the city west of the Cumberland Valley Railroad. The Chemicals only remained in service until 1903. The most recent fire company is the South Hagerstown Fire Company, created in 1950, and located in the South End on West First Street (Mayhue, 2004).

Early on, apparatus was housed in sheds or garages. Meetings of each organization were held at the town hall. Eventually, these sheds or garages progressed to become more than places to store equipment and apparatus, they became the cornerstone of their respective communities. Membership swelled, enabling these organizations to hold fairs, bazaars, and dances in ballrooms located above the apparatus. Many of the companies had property next to their buildings that were used as rentals to provide income for the fire company (Mayhue, 2004).

When a fire occurred within the City, citizens were encouraged to place candles in their windows at night to help with notifying the firefighters. An owner of a property worth more than \$300 in value within the City was also required to provide two leather fire buckets. Properties that were less than \$300 in value only required one leather bucket. A \$1 fine per month was levied on property owners that failed to comply until the problem was corrected. Firefighters were not immune from fines. Fines of 50 cents were levied for removing equipment from the fire company without permission, as well as for not responding to fire alarms (Mayhue, 2004).

Career Firefighters/Drivers have driven Hagerstown Fire Department apparatus since 1895. Initially, each individual volunteer organization paid for drivers. Sometime after 1910 the City of Hagerstown took on the responsibility of paying for drivers. Until the formation of the firefighters' union (International Association of Firefighters Local 1605) in 1966, career firefighters were termed "Drivers." After the formation of Local 1605, career firefighters became known as "Fire Apparatus Operator," or FAO (Mayhue, 2004).

BACKGROUND and SIGNIFICANCE

Hagerstown Fire Department Response Area

The Hagerstown Fire Department consists of five fire stations located throughout the City of Hagerstown. Engine 5 (South Hagerstown Fire Company) in the south end, Engine 1 (First Hagerstown Hose Company) in the Downtown, and Engine 2 (Antietam Fire Company) in the north end each house a single engine company staffed with two career personnel. Station 4 (Western Enterprise Fire Company) in the west end and Station 3 (Independent Junior Fire Company and Pioneer Hook and Ladder) in the east end each house a single engine company as well as a 105-foot tractor drawn ladder truck. Each piece is staffed with 2 career personnel. Engines 1, 2 and 3 each have a contingent of volunteer personnel that up-staff apparatus when they are in station or via their personal vehicles, however they are hit and miss when it comes to staffing and response. Career personnel for the HFD work a 24 on, 48 off shift schedule with

a Kelly Shift every 21 days. Each shift also has a Battalion Chief, Shift Captain, and a Battalion Aide that respond from the Administrative Offices located downtown.

The City of Hagerstown is located on 11.80 square miles, with a much higher than average population density. The City of Hagerstown is surrounded by Washington County on all sides. Funkstown to the east and south, Halfway to the south, Maugansville to the west, and Longmeadow to the north. The Hagerstown Fire Department has Mutual and Automatic Aid agreements with each of these organizations. The U.S. average population density is 82.73 people per square mile, while the State of Maryland Average is 474.59. The City of Hagerstown's population density is 3,415.75 people per square mile (USA.com, May 2017).

The City of Hagerstown encompasses 18 census tracts. Within these census tracts there are 18, 442 total housing units, of those 16,295 (88.26%) are occupied. Owners occupy 6,333 (34.34%) of those, while renters occupy 9,962 (54.02%). The numbers as they sit do not actually represent total number of structures within the city. If an apartment building has 20 apartments, each apartment is considered an individual unit. Single Unit detached homes total 5,540 (30.04%) while single family attached homes account for 5,836 (31.65%) units. The next largest structures include units with 10 or more units, accounting for 3,129 (16.97%) units (USA.com, May 2017).

The City of Hagerstown has a very diverse makeup of ethnicities. Caucasians make up most of the city population with 29,180 (72.4%) residents. African Americans make up the next highest group with 7,637 (18.95%) residents. Hispanic and Asian residents make up the next two groups at 2,385 (5.92%) and 900 (2.3%) respectively. Census Data indicates a population growth within all ethnic groups, at an average growth of 9.83% since the year 2000 Census (USA.com, May 2017).

Of the City of Hagerstown's over 40,000 citizens, the largest portion of the population are citizens over the age of 55, accounting for 8,420 citizens (20.9%). With one fifth of the population being elderly or close to it, concerns arise over how these citizens care for themselves, the conditions they live in, and the quality of their lives. The Hagerstown Fire Department used to have a program for older adults that involved a Home Safety Makeover. This program included installing hand rails for fall protection, checking and installing smoke and carbon monoxide detectors where needed, and for those hard of hearing, installing specialized smoke alarms designed to shake their bed or emit higher pitched alarm sounds with flashing lights to alert in the case of fire. This program is no longer utilized due to costs and funding, however through the State of Maryland Grant funding the HFD is still able to obtain the specialized detectors. The Hagerstown Fire Department still makes every effort to contact the City's elderly to check their residences and educate them on the importance of fire safety in their homes (USA.com, May 2017).

With the drop in the economy in the latter part of the 2000s, the entire nation took a hit. Hagerstown was no different. A loss of businesses and jobs within the city led to a rise in poverty and homelessness. The average single worker living within the city earns an average of

\$26,645 annually, much lower than the Maryland average of \$40,501. The average household income of \$38,080 also falls well below the Maryland average of \$74,149. Many of these families qualify for public assistance either through the state or the federal government (USA.com, May 2017).

The City of Hagerstown has within its boundaries several educational facilities, healthcare facilities, and high risk occupancies. The City of Hagerstown has within its corporate limits 2 traditional high schools (North and South Highs), as well as one high school designated for students accepted for the performing arts, the Barbara Ingram School for the Arts. There are three middle schools (Western Heights, E. Russel Hicks, and Northern) and six elementary schools (Pangborn, Fountaindale, Bester, Jonathan Hager, Salem Avenue, and St. Marys).

Healthcare facilities include the Washington County Department of Health, The Western Maryland Hospital Center, the newly opened Family Health Center, several same day urgent care facilities, as well as several physician and specialty services offices. The Western Maryland Center is a rehab facility located in the north end of the city that specializes mostly in vent patients transitioning back from a lengthy hospital stay. The Family Health Center recently opened on South Cleveland Avenue provides health services to families in the low-income range that cannot afford healthcare or other needed services to the community. Same day urgent care facilities located throughout the city include Med Express, UNI Urgent Care, and Meritus Urgent Care.

There are several facilities that the Hagerstown Fire Department considers to be “High Risk Occupancies.” These facilities are operated by the Hagerstown Housing Authority, having most of their residents falling under Section 8, government aided assistance. These facilities include Potomac Towers (11 stories), The Alexander House (10 stories), the Dagmar (8 stories) and the Elizabeth Court Apartments, (11 stories). These buildings are Type I Non-Combustible Construction with sprinklers, standpipes, and fire department connect ability. Also, considered Section 8 housing, the Cortland Manor apartments in the north end are 3 story Type V Wood constructed apartment buildings with up to 12 units per building.

As with any sizable city, there are social issues that affect the services the Hagerstown Fire Department provides. The City of Hagerstown has a total population in poverty of 10,316, or 26.13 % of the population. That number is higher than the National average of 15.59%. Families in poverty number 2,147, or 22.62%, double the National average of 11.47% (USA.com May 2017). Because of low – income, there are several residents that abuse and tax the ems system. Speaking with Community Rescue Service employees repeat users of ems within the city are rising steadily. These users have little to no insurance and cannot pay their bills so they continue to seek transport for reasons ranging from addiction services to mental disorder. Crime within the City of Hagerstown is steady, according to an officer of the Hagerstown Police Department. However, they have seen a rise in the amount of violent crimes recently. Stabbings, shootings and assaults have risen due to the increase in gang activity within the city. According to the Hagerstown Gang Task Force, the City of Hagerstown does not suffer from the larger more prominent gangs, though there are members of such gangs as the Bloods, Crips,

and the Gangster Disciples. Hagerstown's gang issues stem from smaller localized sects trying to build a name for themselves. Prevalent since the downturn in the economy has been the sharp rise in the use of Heroin. Heroin overdose has become a daily response for the Hagerstown Fire Department, with units responding to multiple overdoses daily.

STAFFING THE HAGERSTOWN FIRE DEPARTMENT

As stated previously, The Hagerstown Fire Department is a combination fire department that is staffed with 22 personnel per shift, staffing 7 pieces of fire apparatus (5 fire engines, 2 tiller ladder trucks). Minimum staffing for a given shift is 15 personnel, allowing for 3 personnel off on vacation, 3 off on Kelly 6 days of the week, 4 off on Kelly 1 day of the week. Most days there are 16 working. With this model, there are two personnel staffing 6 of the 7 apparatus, one staffed with 3, and the Battalion Aide working in the office. Volunteer staffing exists in a few of the companies, but their participation is minimal. In a perfect world, the HFD would have 4 personnel on each apparatus.

The problem that the Hagerstown Fire Department faces is staffing their fire apparatus with the personnel required to efficiently and safely conduct fire operations in accordance with NFPA standards.

The purpose of this Managing Officer research is to answer the following questions:

1. Performing a SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis, what challenges await the HFD when trying to add staffing?
2. What NFPA staffing standard should the Hagerstown Fire Department be following when it comes to the number of people on shift and how will this impact the HFD?
3. What are some of the costs associated with adding firefighters to the current staffing level? What are some ways that these personnel can be funded?
4. How can the Hagerstown Fire Department add a third certified, qualified firefighter to each fire engine?

The firefighters that make up the Hagerstown Fire Department are a very proud group. They have done their job at the current staffing level for years, sometimes with less in the earlier years, and have done it well. While change is a constant in the fire service, it is something that does not come easy for HFD personnel. It is my hope for this research that we can increase the safety of our personnel by being able to responsibly increase the staffing level of our fire engines.

RESEARCH / LITERATURE REVIEW

Question #1 - Performing a SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis, what challenges await the HFD when trying to add staffing?

To address changing the staffing levels of fire apparatus in the Hagerstown Fire Department, the HFD needs to look at itself in the mirror to see where it stands. An environmental scan of the HFD landscape shows an increase in incidents every year, with around 80% being emergency medical services. In recent years, the increase in EMS has been attributed to the Opioid epidemic as well as the introduction of “Spice” related overdoses. With the increased EMS work-load however, the Hagerstown Fire Department is still busy with what NFIRS classifies as “Fires,” having run 326 fire related incidents in 2016. In addition to these incidents, the HFD has a very active fire prevention and public education program (DeHaven, May 2017).

SWOT Analysis

As with any organization, The Hagerstown Fire Department has its strengths as well as its weaknesses / challenges. Using a SWOT analysis, The HFD can look at itself as an organization and develop a direction to aim for in changing its staffing model. The following SWOT analysis was completed:

Strengths

- Highly trained, dedicated career staff
- Supportive Command Staff
- Response / On Scene times around 4 minutes
- Strong Labor / Management Relations

Weaknesses

- 2 man staffed apparatus
- Lack of accountability at the Company level
- Decline in well-trained / experienced volunteers
- Resistant to change as an organization

Opportunities

- 3-man Engine Companies with current career staffing levels
- Decrease apparatus maintenance costs
- Promotion of 3 Company Lieutenants per shift
- Removal of one engine company from service

Threats / Challenges

- Funding for personnel / promotions
- Non-willingness by personnel to take an engine out of service / change
- Volunteers not willing to have apparatus / staffing removed from their firehouse

- Mayor / City Council not willing to support changes within the Fire Department

Question #2 - What NFPA staffing standard should the Hagerstown Fire Department be following when it comes to the number of people on shift and how will this impact the HFD?

Everything that a fire department is involved in from fire ground operations to the equipment used falls under any number of standards set forth by the National Fire Protection Association, or NFPA. The NFPA is a non-profit organization made up of over 80 representatives of all aspects of the fire service and other trade organizations that was created to establish standards of operation for fire departments across the United States. These are standards that are expected to be met. The standards not only protect firefighters, but the citizens that they serve. NFPA standards are not laws, but consensus standards. They are meant to be standards of quality that ensure that health and safety of anyone affected by a fire department (NFPA, 2017).

As it relates to staffing, the NFPA has two notable 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 and NFPA 1720: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments. One of the standards addresses career fire departments, the other volunteer. In speaking with Hagerstown Fire Chief Steve Lohr, it has been his position since his arrival in 2015 that the HFD is an NFPA 1710 fire department, due to the department being staffed by mostly career firefighters. For this reason, NFPA 1710 will be briefly discussed further.

A study performed by the National Institute of Standards and Technology (NIST) highlighted three basic facts regarding firefighting:

1. Firefighting requires firefighters; Hose lines will not pull themselves.
2. If we can reduce the time it takes to perform fire ground tasks such as pulling hose or throwing ladders the outcome for both victim and firefighter will improve. As the study states, "Time affects life."
3. The more firefighters on the fire ground, the less time these tasks will take.

The NIST study goes on to say that time is the enemy. The faster we complete the necessary tasks on any fire ground the faster we provide a safer environment for the firefighter and the victim. The faster we eliminate the danger, the faster it goes away. Fire departments can reduce this time by adequately staffing responding apparatus (Kirby, 2012).

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 was released in 2001 after 10 years of research and debate. This staffing standard sets the minimum standard for the staffing of crews and how they are expected to operate. As part of the 1710 requirements, firefighters will:

- Respond with a minimum of 4 on each apparatus, including a company officer
- The Company Officer must remain as part of the company, not outside as command
- One firefighter will operate the pump, one will secure the water supply, two will deploy the hose line
- Arrive within 4 minutes of the time the dispatch center receives the call

Some of the benefits of 1710 include the following:

- Offers assurance that fire and ems will respond promptly and appropriately
- If a business is lost, the economic impact waterfalls. Employees will not get paid, tax base erodes, and money is not returned into the local economy. Proper staffing reduces damage and loss of economic driver.
- Minimal damage to business and residential alike are more likely to keep the occupants in their current locations, instead of relocating.

NFPA 1710 enhances Public Safety:

- Quick response keeps incidents small
- Enhances the quality of life in the community
- Attracts new residents and business
- Protects the community against liability

Furthermore, 1710 establishes the TOTAL minimum number of personnel by structure type:

- Single Family Dwelling – 14 (15 if an aerial is used)
- Open Air Strip Mall – 27 (28 if an aerial is used)
- Garden Style Apartment – 27 (28 if an aerial is used)
- High Rise – 42 (43 if the building is equipped with a fire pump) (NFPA 1710 Fact Sheet)

As one can see from the numbers required, a substantial number of personnel are required and increase as the structure size increases. With the Hagerstown Fire Department staffing at a minimum of 15 personnel daily, it falls far short when it relates to structures of larger size. A study done by the International City Managers Association (ICMA) showed that understaffed fire departments is a national issue. This study was also used to determine the effectiveness of a company based on its staffing, a company being a single piece of apparatus. The study stated that suppression operations fall under three basic functions; 1. Rescue, 2. Work involving ladders, forcible entry and ventilation, 3. The application of water. Raising ladders, searching, ventilation, and rescue takes anywhere from 4 to 8 or even more firefighters, each under the supervision of the Company Officer. Furthermore, if 16 trained personnel are not on scene within the stated critical time, injuries and dollar loss significantly increase, as does the spread of the fire. Firefighting tactics were conducted and showed that companies with 5 personnel were 100% effective. As that number drops so does the company's effectiveness. 4 person crews were 65% effective, 3 person crews 38% effective. While the Hagerstown Fire

Department prides itself on being able to do more with less, the studies show that the effectiveness of the 2-man company is very low. (Rockland, 2008)

The Austin Fire Department studied 136 incidents between the years of 1989 and 1992 in which 1,938 firefighters responded. There was an injury rate of 5.3 per 100 firefighters with 4 and 5 man companies. The 3-man company experienced an injury rate of 7.77 per 100 firefighters, over 46% higher. The Austin Study confirmed what studies prior to it had stated, inadequate staffing directly causes the following:

- Higher risk to victims decreasing likelihood of survival
- Loss of critical functions performed on the fire ground
- Increased loss in overall effectiveness
- Increases in stress on the firefighters trying to perform more duties with less personnel
- Increases in risk to firefighter safety

The Austin study also showed that when staffing is increased from 3 to 4, it provides substantial benefits. These include:

- Decreased number of multiple alarm incidents
- Decrease in fire damage loss
- Fewer civilian / firefighter deaths and injuries
- Fewer Workers Compensation claims
- Lower liability to the Fire Department and governing jurisdiction (IAFF, 1995)

With all this information, the studies, and the NFPA standard, where does the Hagerstown Fire Department go from here? Does the HFD remain at the status quo, add staffing to the current model, or develop some sort of hybrid to the latter? These questions will be addressed in the following sections.

Question #3 - What are some of the costs associated with adding firefighters to the current staffing level? What are some ways that these personnel can be funded?

Adding additional firefighters in any organization can be very costly. In addition to the annual salary of personnel, the cost of benefits as well as personal protective equipment drive the cost to hire and maintain personnel. According to City of Hagerstown Human Resource Director Karen Paulson, hiring one entry level firefighter breaks down as the following:

- | | |
|---------------|------------------------------------------------------------|
| • Base Salary | \$37,701.04 |
| • Overtime | \$6,751.00 (based on average of 295 hours of OT in year 1) |
| • Pension | \$5,278.15 |
| • Holiday Pay | \$1,000.00 |
| • FICA | \$4,337.84 |
| • Medicaid | \$1,014.52 |

- Worker's Comp \$2,300.00 (Employer Premium Expense)
- Life Insurance \$57.00
- Level Med Plan \$7,130.64
- Dental Plan \$296.04
- Uniforms / PPE \$3,000.00

Total Cost of 1 Firefighter \$68,866.23

Average Career X 27 years \$1,859,388.21

This is not an all-inclusive list. This list does not include costs for initial training if an employee needs a certification they did not have when they were hired, the cost of running an academy should the need to hire a large group of firefighters occur, and the cost to maintain firefighter certification over the course of their career (K. Paulson, personal communication, May 2017).

With the cost of hiring one individual firefighter being as it is, where will the funding to hiring these people come from? The City of Hagerstown's Budget for fiscal year July 1, 2017 to June 30, 2018 is listed at \$129.8 million dollars, with the budget for the Fire Department being \$7,674,706 million dollars, 17.3% of the city budget. With competition between 10 city departments for budget money there is not a lot to go around (Means, 2017). While funding is a never-ending struggle, there are options available to the Hagerstown Fire Department.

The City of Hagerstown has three options for funding future positions:

1. Grant Funding through the Assistance to Firefighters Grant Program
2. Raise Property Taxes
3. Levy an emergency services, or fire tax per household / business

GRANT FUNDING

Available to fire departments through the Federal Emergency Management Agency is the Staffing for Adequate Fire and Emergency Response (SAFER) Grant program. SAFER provides funding to career fire departments as well as organizations that represent the interests of volunteer fire departments to help them meet the established standards to meet or maintain response standards. SAFER allows for two categories; hiring of firefighters or Recruitment and Retention of volunteer firefighters. The hiring of firefighters falls under three priorities: 1) Re-hiring laid off firefighters, 2) Retention of firefighters facing lay off, 3) and hiring new firefighters (FEMA, August 2017).

As with any grant, there is a given amount that the organization will have to match once the grant is accepted and the personnel are in place. In years one and two the awarded department will pay 25% of the cost of the personnel. Year three the department will pay 65%

of the cost of the personnel. Gradually the percentage will grow until the department is responsible for 100% of the cost (FEMA, August 2017).

The Hagerstown Fire Department was previously awarded a grant through the SAFER April 4, 2008 the HFD was awarded \$948,825 on a 5-year grant to hire 9 firefighters. These firefighters along with 5 others began their careers on June 2, 2008. Shortly after in early 2009 the economy took a turn toward recession that affected everybody. Due to the shortfall in the economy the HFD decided to return the grant because they were not able to afford the cost of the firefighters. This decision was made during fiscal year 2012. While no firefighters lost their jobs as a result, three firefighter positions went unfunded through attrition. Should the Hagerstown Fire Department decide to pursue grant funding to hire more firefighters, the decision to do so should be made with the intent that the city will be able to afford the additional personnel at the end of the grant period.

RAISE PROPERTY TAXES

Talking about raising taxes in any community is always met with resistance. In FY 2018, the City of Hagerstown passed a balanced budget that showed spending cuts of \$450,000. The 2018 tax rate is \$0.941 per \$100 of assessed value of all real (personal) property and \$2.353 per \$100 of all business property within the city. With this tax rate the city expects a revenue of \$29,522,874. This rate included an increase in taxes of \$0.028 per \$100 for real property and \$0.070 for business property. These increases were to merely maintain the current level of revenue needed to continue operation. Every cent of increase yields approximately \$234,000 in additional revenue. Previously, the tax rate was at \$0.78.8 per \$100 of assess property. That tax rate had been in effect since the 2008-2009 fiscal year. In 2014, the city assessed an \$.11 property tax increase to offset the loss of tax revenue due to declining property values because of the Tri-Annual Property assessment, which assesses property values on a three-year cycle. With the tax rate and property values being what they are, a tax increase to fund fire department positions will not be met kindly or with support (Marshall, May 2017; McMillion, May 2014).

EMERGENCY SERVICES FEE / FIRE TAX

Another option to help additionally fund wages and operations is through the levy of an emergency services fee or a fire tax. This fee can be assessed on a property owner's water / wastewater bill, billed in either the first or last quarter of the fiscal year. This would be an annual fee assessed to each property owner. Again, this may be met with resistance from City Taxpayers because it is a tax to pay for a guaranteed service. With 10,316 residents living at or below the poverty level in the City, it is hard for them to pay this additional cost while providing for their families. A fee of this nature gives everyone in the City a hand in paying for their fire protection, spreading the cost out equally to everyone.

Within the corporate City limits there are 18,442 total housing units occupying 14,000 structures. Of these, 16,295 are occupied. 6,333 (34.34%) of these units are owner occupied

and 9,962 (54.02%) are renter occupied. In apartment complexes, 1 apartment is considered 1 single housing unit. Assessing this fee to the owner of the property means that the person responsible for the property would be paying. It would be up to a rental property owner to pass that fee on to his renters through their rental costs. Assessing a \$40 per year flat fee on 14,000 properties could yield up to \$560,000 in additional revenue. Additional revenue can be raised by raising the fee to \$80 for commercial structures, such as larger apartment buildings and businesses. There will be those that are non-payers, which will be addressed through the collections process. There will be additional opportunity for revenue as there are currently around 2,147 vacant or abandoned structures in town, for an additional \$85,880 in revenue. A plan will need to be developed to go after these property owners for non-payment as well.

Question #4 - How can the Hagerstown Fire Department add a third certified, qualified firefighter to each fire engine?

Bringing fire engines in the Hagerstown Fire Department closer to meeting the NFPA 1710 standard is going to take some creativity and openness to change. The Hagerstown Fire Department is a very traditional department, having operated in the same manner for many years. There is going to need to be a willingness by City Management to fund positions to improve operational readiness, or a willingness for personnel to make needed changes to do the same. To do this, there are three options the HFD can look at:

1. Hire additional firefighters
2. Re-Deploy personnel under the current staffing model
3. Maintain status Quo, rely more on volunteer staff

Option #1 – Hiring of Additional Firefighters

To bring the city fire engines up to the three-person staffing the HFD would need to hire an additional 6 firefighters per shift X3 shifts, for a total of 18 firefighters. 5 of these firefighters would be assigned to one of the 5 engine companies, with the sixth being a relief, or fill-in firefighter to cover Kelly Days or vacations. This option is going to be the costliest option and will require the implementation of the previously mentioned fire fee or an increase in taxes. With the cost of each firefighter with benefits being \$68,866.23, the total cost of the 18 firefighters in the first year would be \$1,239,588. With the addition of the third person on each fire engine there arises the need for further accountability in each firehouse. Because of this there should be a Company Officer, possibly a Lieutenant. Add in an additional \$3,000 to promote 5 Company Lieutenants per shift at a total cost of \$45,000, this option becomes what will be the costliest. This will require not only the fire tax, but a raise in taxes, and possible the use of a SAFER grant to get these firefighters on the street. The costs of these personnel only compound in future years due to wage adjustments because of collective bargaining.

Option #2 - Re-Deploy personnel under the current staffing model

Stated earlier, the Hagerstown Fire Department currently staffs 5 fire engines and 2 ladder trucks with 2 personnel each. On every day except a four Kelly day, Station 3 or 4 is staffed with an additional person, riding third on whichever piece is going out on alarms. Additionally, there is a Captain and a Battalion Aide riding from the Administrative Office with the Battalion Chief. Placing 3 personnel on each of the engines can be done by doing the following:

- A.** Move the Captain and the Battalion Aide out of the Office, placing one in Station 3 and the other in Station 4. This ensures three-man staffing on those engines, and places an officer for accountability in one of those houses, but leaves the Battalion Chief alone to respond to incidents. On days where the Captain needs to move to the office from the firehouse, that position can be filled with another Captain on overtime, A Lieutenant on overtime, or an individual on the Lieutenant's List for Promotion acting out of class for the shift. Doing this acting out of class gives those on the list the opportunity to work in that role prior to promotion as a part of their career path.
- B.** Remove the staffing from Engine 1 – Move that staffing to Engine 2 and Engine 5. There have been calls in the past and recently for Engine 1 to be taken out of the Downtown Arts and Entertainment District. This is due to the amount of foot traffic, the Maryland Theater, and the restaurants with outside dining arrangements. Groups downtown feel that this is a distraction to the experience of spending time Downtown.
- C.** Promote 3 Lieutenants per shift to be Company Officers of the other 3 Engine Company's. With an increase in personnel per piece and per station there will arise the need for greater accountability within the stations. Having officers on all four Engine Companies will also ensure an HFD Command presence for units responding into Washington County for Mutual Aid. The additional cost to promote these positions will be \$3,000 per Lieutenant, as set forth in the Local 1605 Collective Bargaining Agreement, for a total of \$27,000 / year (3 LTs per shift x3 shifts) (Local 1605 Bargaining Agreement 2016).
- D.** Removing Engine 1's staffing removes the downtown engine, and will increase the workload on the other four remaining engines. Assuming the percentages of incidents run by unit in Appendix B of this document, Engine 2 will possibly increase by 185 incidents, Engine 3 by 206 incidents, Engine 4 by 311 incidents, and Engine 5 by 157 incidents. To help decrease the workload, City Ladder Trucks could be called upon to run incidents they would not normally run, such as EMS or other Public Service calls. On days where the fourth person off exists, one engine will have to be reduced to the two-man staffing to prevent overtime.

The volunteer organization, The First Hagerstown Hose Company, will still maintain a presence with their Museum, however there would be limited emergency response from this station, with city volunteers maintaining their Special Unit chase vehicle. The current Engine 1

would move to reserve status, helping to offset some of the cost of promotions. From 2015 to 2017 Engine 1 cost the HFD \$4,587.29 and \$5,078.53 in repair cost. This number is misleading, as most parts and repair work done were covered as warranty items, costs that I was not allowed access to by the International dealer that services this piece. Engine 1 could be moved to frontline as another unit, with other frontline pieces having increased repair costs as the fleet ages. In the future, the need to replace the fleet will be reduced by one, saving around \$600,000 in Capital Replacement Funding (T. Stoops, personal communication, April 23, 2017).

Option #3 - Maintain status Quo, rely more on volunteer staff

To up staff city apparatus, The HFD can place a greater emphasis on inclusion of volunteer staff, leaving career staff in place. The HFD has approximately 20 active volunteers, suffering the same fate many volunteer organizations across the country are facing. Relying on City Volunteers to staff positions on a 24-7 basis is going to be very difficult due to the number of volunteers and the time commitment required to do so. Only Engine 1 and Engine 2 have a contingent of qualified, certified firefighters able to ride, and many of those firefighters have other commitments outside of their firehouses. The use of the volunteer staff to up staff apparatus around the clock is not practical, however their participation during the after-work hours and during the weekends should continue to be encouraged.

RECOMMENDATIONS

Increasing the staffing level in any organization can be a difficult task, especially for an organization that is not in a financial situation to be able to do so. Doing so requires an open mindedness between Management and Staff, and will require a change in the culture of how a Department will operate going forward. With volunteerism dropping from 808,000 in 1986 to 788,00 in 2014 (Favignano, 2016), it is difficult to place a greater demand on volunteers to staff firehouses when there are greater demands on training and outside commitments of their lives. Add in NFPA standards for how many firefighters an organization should be staffed with, as well as how much it costs to hire and maintain those firefighters, as well as political interests, it can become difficult and frustrating ensuring that an organization is putting the best possible product on the street for the citizens served.

The Hagerstown Fire Department is not immune to these very same issues, but still puts a quality product on the street. The following recommendations are being made based upon the research provided within this document:

1. **Implement a fire service fee to help offset some of the cost of the fire department on the city** – This recommendation will not solve all the financial issues that continue to hamper the Hagerstown Fire Department. This does however make every single citizen accountable for contributing to their fire protection. The revenue raised from this fee will help the operation alleviate the burden of the fire department on the city budget, allowing for the purchase of better equipment, better training, and increased safety controls for every stakeholder of the Hagerstown Fire Department.

- 2. Re-deploy its current personnel and consider promotional opportunities based on savings** – By reducing the Hagerstown Fire Department by 1 fire engine and moving personnel out of the administrative office, the HFD can up staff 4 of its remaining fire engines to 3 personnel. The savings in taking one piece off line can be used in conjunction with the fire fee to promote 3 Company Officers, furthering the opportunities for HFD personnel to promote and have a career path to follow. Doing this will take some creativity from HFD Command Staff to gain buy-in, and a willingness from HFD Personnel to be willing to make a change. This re-deployment does not bring the HFD into compliance with the NFPA 1710 standard, but it is a step in the right direction.
- 3. Continue to rely upon volunteer participation** – The Hagerstown Fire Department was founded by volunteers who took it upon themselves in the late 1800's to protect their community. While the focus has always been to protect life and property, how the department has been staffed has shifted from mostly volunteer in the early years to mostly career in the current day. Volunteerism has its place in the HFD, and those members that continue to give their time should be encouraged to continue to do so.

CONCLUSION

From the formation of the United Fire Company to the current day combination fire department, The Hagerstown Fire Department is one steeped in great history and tradition. It's approximately 100 personnel do their best daily to serve and protect those who live and do business within the corporate city limits of the City of Hagerstown. The City of Hagerstown is one of great diversity that creates different challenges daily for HFD staff. Creativity in creating new streams of revenue, deploying HFD personnel, and being fiscally diligent can all provide an opportunity for the Hagerstown Fire Department to move toward becoming a better staffed organization.

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APPENDIX A – Breakdown by Incident Type

	HAGERSTOWN FIRE DEPARTMENT CITY OF HAGERSTOWN 25 West Church Street Hagerstown, Maryland 21740		
(301) 790-2476		FAX (301) 797-7448	
MONTHLY FIRE REPORT			
YEAR 2016			
	<u>TOTAL</u>	<u>LOSS</u>	
TOTAL INCIDENTS	3489	\$1,005,060	
<i>Breakdown By Incident Type</i>			
Fire (100-199)	326	\$1,004,940	9.34 %
Overpressure Rupture, Explosion, Overheat (200-299)	22	\$ 120	.63 %
Rescue & EMS Incident (300-399)	1793		51.39 %
Hazardous Condition (no fire) (400-499)	342		9.80 %
Service Call (500-599)	375		10.74 %
Good Intent Call (600-699)	120		3.43 %
False Alarm & False Call (700-799)	472		13.52 %
Severe Weather (800-899)	02		.05 %
Special Incident Type (900-999)	37		1.06 %
<i>Breakdown By Property Type</i>			
Assembly (100-199)	164	\$ 3,175	4.70 %
Educational (200-299)	60	\$ 90	1.71 %
Health Care, Detention & Correction (300-399)	130	\$	3.72 %
Residential (400-499)	1758	\$ 835,010	50.38 %
Mercantile, Business (500-599)	311	\$ 47,900	8.91 %
Industrial, Utility (600-699)	08	\$.22 %
Manufacturing, Processing (700-799)	20	\$ 2,000	.57 %
Storage (800-899)	95	\$ 6,560	2.72 %
Outside Property (900-999)	943	\$ 110,325	27.02 %
INCIDENT BY DISTRICT			
Sharpsburg Fire (Co 1) 3	0.08 %	Potomac Valley (Co11) 0	0.00 %
Williamsport Fire (Co 2) 7	1.63 %	Fairplay Fire (Co12) 6	0.17 %
Clear Spring Fire (Co 4) 13	0.37 %	Maugansville Fire (Co13) 31	0.34 %
Hancock Fire (Co 5) 11	0.31 %	Mt Aetna Fire (Co16) 1	0.02 %
Boonsboro Fire (Co6) 2	0.05 %	Halfway Fire (Co26) 92	2.63 %
Smithsburg Fire (Co 7) 12	0.34 %	Long Meadow Fire (Co27) 76	2.17 %
Boonsboro Fire (Co 8) 1	0.02 %		
Leitersburg Fire (Co 9) 5	0.02 %	Hagerstown (HFD) 3036	87.00 %
Funkstown Fire (Co10) 167	4.78 %	Out Of County (OUT) 26	0.74 %
AVERAGE TURNOUT PER INCIDENT 5			
INJURIES	Civilians 15	Firefighters 8	
DEATHS	Civilians 0		
AVERAGE TIME OF ARRIVAL:	4:21 min	(HFD District only)	
FIRE SCENE PROPERTY VALUES	\$32,719,497	FIRE LOSSES	PROPERTY SAVED
		\$1,005,060 3.07%	\$31,714,437 96.93%

(D. DeHaven, personal communication, May 16 2017)

APPENDIX B - Incident Response for 2016 by Unit

ENGINE 1 – 1,031 (29.5%)

ENGINE 2 – 657 (18%)

ENGINE 3 – 696 (20%)

ENGINE 4 – 1,056 (30.2%)

ENGINE 5 – 537 (15.3%)

TRUCK 1 – 695

TRUCK 4 – 550

RESERVE ENGINE 1 – 6 (RUNNING AS RE)

TRUCK 11 – 1 (RUNNING AS THE THIRD TRUCK)

CAR 300 (FD1) – 29

BATTALION CAR – 854

RESERVE BATTALION CAR – 94

FM-1 – 113

FM-2 – 73

FM-3 – 66

SU-31 – 8

SU-32 – 56

UT-3 - 43

(D. DeHaven, personal communication, May 16 2017)