



COUNTY of FREDERICK, VIRGINIA

DEPARTMENT OF PUBLIC SAFETY COMMUNICATIONS

1080 Coverstone Dr. Winchester, VA 22602

540-665-6356

LeeAnna Pyles
Director

FREDERICK COUNTY
PUBLIC SAFETY COMMITTEE
AGENDA

June 18, 2015
8:30 AM

**** Training room – off the lobby downstairs****
Public Safety Building
1080 Coverstone Dr., Winchester, Virginia

Call to Order: Thursday June 18, 2015 at 8:30 a.m.

Agenda Items:

- 1. Update of discontinuing alarm monitoring in the dispatch center. -Director Pyles**
- 2. Proposed ordinance regarding Volunteer F&R members/new memberships –Rod Williams (see attached)**
- 3. Discussion of F&R service plan. -Chief Linaburg (see attached)**

New Business:

Next Meeting Date: TBD

Adjourn:



COUNTY OF FREDERICK

Roderick B. Williams
County Attorney

540/722-8383
Fax 540/667-0370
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rwillia@fcva.us

MEMORANDUM

TO: Public Safety Committee

FROM: Roderick B. Williams
County Attorney

DATE: June 12, 2015

RE: Frederick County Code, Chapter 89 (Volunteer Membership), Section 89-12
(Volunteer Fire Fighter and Rescue Members) – Simplified Background Check
Procedure

Attached please find a draft proposed ordinance amendment concerning Section 89-12 of the County Code. The reason in support of this proposed amendment is as follows:

Chapter 89 (Volunteer Membership), Section 89-12 (Volunteer Fire Fighter and Rescue Members) – proposed amendment

The proposed amendment would add a subsection to the existing language of the section. The amendment would serve the purpose of speeding up the process for background checks necessary in order to approve volunteer fire and rescue members. On July 1st, 2015 a new subsection, subsection (F), of Section 32.1-115.5 of the Code of Virginia (Certification and recertification of emergency of emergency medical services providers; appeals process) will come into effect. A copy of Section 32.1-115.5, as in effect on July 1st, is attached as well, for reference. The General Assembly enacted this subsection to simplify the process to approve volunteer fire fighters and rescue members currently in place under Section 32.1-115.5(E) of the Code of Virginia. Subsection (F) permits the County to submit background checks directly to the Central Criminal Records Exchange (instead of through the State Health Department, for forwarding then to the Central Criminal Records Exchange, a process that has resulted in unreasonably delays by the state agencies), but requires a local ordinance to be adopted for the subsection to apply to the locality. This amendment is to serve as that local ordinance.



ORDINANCE
_____, 2015

The Board of Supervisors of Frederick County, Virginia hereby ordains that Section 89-12 (Volunteer Fire Fighter and Rescue Members) of Article IV (Volunteer Membership) of Chapter 89 (Fire and Rescue Services) of the Code of Frederick County, Virginia be, and the same hereby is, amended as follows (deletions are shown in ~~bold strikethrough~~ and additions are shown in **bold underline**):

§ 89-12. Volunteer fire fighter and rescue members.
[Amended xx-xx-2015]

- A.** Any person, 18 years of age or older, is eligible for membership in a company as a regular member. Persons must apply and be accepted by the company to which application is made according to its rules and regulations, the rules and regulations of the company, and state law. Participation by members must be in accordance with the company rules and regulations and state law.
- B.** **Applicants for membership shall be subject to a background check. Applications for membership shall require, for the background check, the submission of fingerprints and personal descriptive information, to be processed in accordance with the following:**
- 1. Any person who, on or after July 1, 2015, applies to be a volunteer with a company shall submit fingerprints and provide personal descriptive information to be sent directly by the Department to the Central Criminal Records Exchange to then be forwarded to the Federal Bureau of Investigation for the purpose of obtaining criminal history records information for the applicant, in accordance with Code of Virginia § 32.1-111.5.**
 - 2. Upon receipt of the results of the state and national criminal history records search, the Department Chief, as designee of the County Administrator, shall notify the Office of Emergency Medical Services regarding the applicant's eligibility to serve as a volunteer.**
 - 3. Information provided to the Office of Emergency Medical Services shall be limited to notification as to whether the applicant is eligible to serve as a volunteer in accordance with requirements related to**

disqualifying offenses set forth in regulations of the State Board of Health, and shall not include information regarding whether the applicant has been found ineligible to serve as a volunteer due to any additional exclusionary criteria established by the County.

This section is in accordance with the Code of Virginia, 1950, as amended, §§ 15.2-1503.1, 19.2-389, and 32.1-111.5.

Enacted this _____ day of _____, 2015.

Richard C. Shickle, Chairman	_____	Gary A. Lofton	_____
Robert A. Hess	_____	Robert W. Wells	_____
Jason E. Ransom	_____	Gene E. Fisher	_____
Charles S. DeHaven, Jr.	_____		

A COPY ATTEST

Brenda G. Garton
Frederick County Administrator

VIRGINIA ACTS OF ASSEMBLY -- 2015 SESSION

CHAPTER 362

An Act to amend and reenact § 32.1-111.5 of the Code of Virginia, relating to emergency medical services personnel; background checks.

[S 997]

Approved March 19, 2015

Be it enacted by the General Assembly of Virginia:

1. That § 32.1-111.5 of the Code of Virginia is amended and reenacted as follows:

§ 32.1-111.5. Certification and recertification of emergency medical services providers; appeals process.

A. The Board shall prescribe by regulation the qualifications required for certification of emergency medical services providers, including those qualifications necessary for authorization to follow Do Not Resuscitate Orders pursuant to § 54.1-2987.1. Such regulations shall include criteria for determining whether an applicant's relevant practical experience and didactic and clinical components of education and training completed during his service as a member of any branch of the armed forces of the United States may be accepted by the Commissioner as evidence of satisfaction of the requirements for certification.

B. Each person desiring certification as an emergency medical services provider shall apply to the Commissioner upon a form prescribed by the Board. Upon receipt of such application, the Commissioner shall cause the applicant to be examined or otherwise determined to be qualified for certification. When determining whether an applicant is qualified for certification, the Commissioner shall consider and may accept relevant practical experience and didactic and clinical components of education and training completed by an applicant during his service as a member of any branch of the armed forces of the United States as evidence of satisfaction of the requirements for certification. If the Commissioner determines that the applicant meets the requirements for certification as an emergency medical services provider, he shall issue a certificate to the applicant. An emergency medical services provider certificate so issued shall be valid for a period required by law or prescribed by the Board. Any certificate so issued may be suspended at any time that the Commissioner determines that the holder no longer meets the qualifications prescribed for such emergency medical services provider. The Commissioner may temporarily suspend any certificate without notice, pending a hearing or informal fact-finding conference, if the Commissioner finds that there is a substantial danger to public health or safety. When the Commissioner has temporarily suspended a certificate pending a hearing, the Commissioner shall seek an expedited hearing in accordance with the Administrative Process Act (§ 2.2-4000 et seq.).

C. The Board shall prescribe by regulation procedures and the qualifications required for the recertification of emergency medical services providers.

D. The Commissioner may issue a temporary certificate when he finds that it is in the public interest. A temporary certificate shall be valid for a period not exceeding 90 days.

E. The State Board of Health shall require each person who, on or after July 1, 2013, applies to be a volunteer with or employee of an emergency medical services agency to submit fingerprints and provide personal descriptive information to be forwarded along with his fingerprints through the Central Criminal Records Exchange to the Federal Bureau of Investigation, for the purpose of obtaining his criminal history record information. The Central Criminal Records Exchange shall forward the results of the state and national records search to the Commissioner or his designee, who shall be a governmental entity. If an applicant is denied employment or service as a volunteer because of information appearing on his criminal history record and the applicant disputes the information upon which the denial was based, the Central Criminal Records Exchange shall, upon written request, furnish to the applicant the procedures for obtaining a copy of the criminal history record from the Federal Bureau of Investigation.

F. Notwithstanding the provisions of subsection E, an emergency medical services agency located in a locality having a local ordinance adopted in accordance with §§ 15.2-1503.1 and 19.2-389 shall require an applicant for employment or to serve as a volunteer to submit fingerprints and provide personal descriptive information to be provided directly to the Central Criminal Records Exchange to be forwarded to the Federal Bureau of Investigation for the purpose of obtaining criminal history records information for the applicant. The Central Criminal Records Exchange shall, upon receipt of an applicant's records or notification that no records exists, forward the results of the state and national records search to the county, city or town manager or chief law-enforcement officer for the locality in which the agency is located, or his designee, who shall be associated with a governmental entity. Upon receipt of the results of the state and national criminal history records search, the county, city or town manager or chief law-enforcement officer for the locality, or his designee, shall notify the Office of

Emergency Medical Services regarding the applicant's eligibility for employment or to serve as a volunteer. Information provided to the Office of Emergency Medical Services shall be limited to notification as to whether the applicant is eligible for employment or to serve as a volunteer in accordance with requirements related to disqualifying offenses set forth in regulations of the Board and shall not include information regarding whether the applicant has been found ineligible for employment or to serve as a volunteer due to additional exclusionary criteria established by the locality. Whenever fingerprints are submitted to both authorities and it is deemed feasible and practical by the Central Criminal Records Exchange it shall forward the results of the fingerprint based state and national records search to the county, city or town manager or chief law enforcement officer for the locality in which the agency is located, or his designee, who shall be associated with a governmental entity, and to the Office of Emergency Medical Services.

Service Plan

Frederick County Fire and Rescue System 2015



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Executive Summary

During the past 10 years, Frederick County has undergone a major transformation from a rural community of the Northern Shenandoah Valley to a retreat from the Washington, DC metropolitan area. This evolution has brought many changes and challenges to the County. Population, for example has grown to an estimated 82,000 residents and continues to expand by 2.5% of new residents annually. As a result, the demands for services upon our local government continue to expand, increasing the County's total annual budget to over \$260 million. Developing sound plans to address these challenges is critical to the success of County government.

Frederick County's Fire and Rescue System has not been immune from these challenges. Throughout the 1990s and most of the 2000s, emergency services were provided by volunteers supplemented by a handful of career Firefighter/EMTs. A demand for service coupled with fewer volunteers available during the business day has changed the complexion of the System. To meet these changing needs, the system has grown in career staffing; however, it continues to be challenged on a daily basis.

This proposed service plan provides the Board of Supervisors with a consolidated vision for this combined fire and rescue system through 2020. The vision includes expansion of services and locations to meet the growing needs of our community; development of common professional standards for fire and rescue services and personnel; and continued assistance to volunteer fire and rescue companies to foster future growth. A committee comprised of volunteer and career staff developed the plan. When complete, the plan will be presented to the Chief's operational working group, the Volunteer Fire and Rescue Association, all of the volunteer fire and rescue companies, and the Public Safety Committee.

While this Service Plan has been prepared primarily to guide budgetary decisions, it also provides a clear path of the fire and rescue system's future. The plan continues to recognize and encourage volunteer service delivery while acknowledging that changes due to demographics, the ability and willingness of those to volunteer due to large time commitment, and other factors in Frederick County will continue to require additional operational career staffing.

Over the next five years, County support for the procurement and operation of fire and rescue apparatus will expand. Currently, volunteer companies procure most fire and rescue apparatus, including fire engines, ladder trucks, heavy rescue squads, and Advanced Life Support ambulances. With the average cost of an engine exceeding \$450,000, a ladder reaching over \$900,000 and a basic ambulance costing about \$180,000 without equipment, volunteer companies are finding with increased difficulty the ability to shoulder the entire burden of replacing their apparatus fleets. The cost of an ambulance will increase by \$18,000 to \$50,000, depending on which approved system is purchased, after July 1, 2016 due to a federally mandated stretcher retention system required in all new ambulances. The average price increase for new apparatus ranges between 2.5% and 5% annually based upon economic factors, changes in standards, and cost of materials. Furthermore, with the need for additional services, County fiscal assistance is required to ensure the stability of the basic apparatus complement for each and every fire and rescue station.

This plan proposes the gradual introduction of several new services, including additional fire and EMS apparatus and stations, additional career staffing as required to support the County's continued growth, and additional recruitment efforts to attract new volunteer members. These expanded services are for the life, safety and protection of all Frederick County residents, especially in growing areas of the County.

In order to support the replacement of volunteer apparatus, the plan proposes the use of Fire Capital and Proffer monies, in addition to other financing possibilities. Fire and rescue stations in suburban areas, including southeastern Front Royal Pike/ Tasker Road, and Stonewall Industrial Corridor will have County support for the replacement of engines, ambulances, and distributed truck and heavy rescue squad resources. In rural Frederick County, engines, ambulances, tankers, and brush trucks would be the focus of County efforts. In all cases, County procurement, grants, and volunteer purchases are supported under the plan.

County funding for fire and rescue operations and support will expand dramatically during the next five years. Additional career staffing required for new fire and rescue stations will be the principal cause for annual operating budget increases. Station development, apparatus replacement, and support for major improvements/replacement to volunteer fire and rescue stations will drive significant capital spending. Providing volunteer companies with additional resources needed to meet the expanding costs of facility operations, apparatus maintenance, as well as equipment and supply replacement will require additional operating budget enhancements.

Operational staffing is an important component of this plan. In order to maintain basic services, a combination of volunteer and career providers will be used. Additional recruitment efforts have been recommended by the plan in order to attract and enhance the number of qualified volunteers available to the system. Career services have been recommended as requested by volunteer companies or as anticipated to meet the basic response needs of stations starting operation through 2020.

In all cases, providers will be trained to identical standards. Programs are in place for basic providers, Intermediates, and Paramedics. Company officers are the final focus for system training standards. The plan expects company leadership programs to begin in 2016.

Finally, the plan describes the needs for a range of services that are needed to support expansion of volunteer and career providers. The management and repair of self-contained breathing apparatus, expansion of volunteer recruitment and retention programs, the development of a system apparatus maintenance capability, and numerous other administrative needs are discussed. The use of technology and information management techniques is critical to our self-assessment, improvement, and service plan improvements.

The priority of the Frederick County Fire and Rescue System remains the effective and efficient delivery of primary services to the community. Basic services include emergency medical and rescue services, fire suppression, hazardous materials mitigation, emergency management, life safety enforcement, and public education. The five-year goals of this plan are ambitious and will require ongoing reassessment in order to ensure that the priorities of the system are not compromised.

Introduction

Purpose of the Service Plan

The purpose of the Combined Fire and Rescue System Service Plan is for the Frederick County Board of Supervisors to better understand the current and long-term needs of the combined Fire and Rescue System and to adopt levels of service, which determine resource requirements for the System. The adopted Service Plan will help guide the Board of Supervisors to strategically plan for the current and future operations and physical plants for the Frederick County combined fire and rescue system.

Service Plan Implementation

The Volunteer Fire and Rescue Association will review this document for their review and adoption on behalf of the combined fire and rescue system (11 independent volunteer companies and the Fire and Rescue Department). Once adopted by the Volunteer Fire and Rescue Association, the Service Plan will be conveyed to the Board of Supervisors Public Safety and Finance Committees for endorsement prior to review and adoption by the Frederick County Board of Supervisors. Once adopted by the Board of Supervisors, all future budgetary decisions pertaining to the Combined Fire and Rescue System will be guided by the Service Plan until modifications are made in the future.

DRAFT

Table 1 - Service Plan Timeline

Fire and Rescue Service Plan Process / Timeline for Board Of Supervisors Adoption		
MILESTONE	DATE SENT	RECEIVED
Proposed Service Plan reviewed by the Frederick County Volunteer Fire and Rescue Association.		
Proposed Service Plan transmitted to the Frederick County Fire and Rescue Chief's work group		
Proposed Service Plan adopted by the Frederick County Volunteer Fire and Rescue Association.		
Proposed Service Plan adopted by the Volunteer Fire and Rescue Association transmitted, reviewed, and endorsed by the Frederick County Public Safety Committee.		
Proposed Service Plan transmitted, reviewed, and adopted by the Frederick County Board of Supervisors		
FY 2015 Budget and CIP Projects Based on adopted Service Plan Prepared by the Combined Fire and Rescue System		

Table 2 - Service Plan Changes and Updates

Fire and Rescue Service Plan Changes and Updates	
CHANGES / UPDATES	DATE

Fire and Rescue Organization

The combined system consists of the eleven (11) volunteer fire and rescue companies, and the Fire and Rescue Department (hereinafter referred to as the “Department”). Currently the Department is divided into three primary divisions: Operations, Life Safety (Fire Marshal), and Training. Secondary divisions include Emergency Management, Volunteer Recruitment and Retention, and EMS Billing.

The Department provides supplemental operational staffing and administrative support to the County’s volunteer fire and rescue companies, and the Volunteer Fire and Rescue Association. In addition, the Department maintains the County’s Fire and Rescue Emergency Operations Center; coordinates Emergency Management functions and related disaster services, special events planning, strategic planning and GIS/mapping services; public education and risk reduction; conducts all code-related fire inspections, and investigates the causes and origins for fires, explosions and hazardous materials incidents. The Chief is responsible for Department personnel, programs and components, and the day-to-day operational activities of the system.

Mission Statement

The Frederick County Fire and Rescue is dedicated to providing quality and cost effective services that protect our citizens, their property, and our environment from the effects of fire, medical emergencies, technological hazards, and manmade or natural disasters pose threat to our community. The volunteer and career members of our department shall uphold high personal standards and always act with sense of cooperation, respect and compassion for every member of the public and each member of the organization. Above all else, our department shall hold as sacred the obligation to be responsible custodians of the public trust and in every circumstance shall always act in the public’s best interest.

Core Values

PROFESSIONAL EXCELLENCE

We believe the pursuit of excellence and demonstrating high professional standards are critical to our work. To ensure the best possible service for our community, the Fire and Rescue Department supports continuous training and encourages professional development.

HEALTH and SAFETY

We believe our health and safety are essential to fulfilling the Fire and Rescue Department's mission. We are committed to providing the best health and safety programs for our members' well-being and operational readiness.

DIVERSITY

We know Frederick County is a diverse community, and we commit to meeting its ever-changing needs. We are dedicated to reflecting and respecting that diversity throughout our organization. We will respect the diversity of our community by providing compassionate and quality service to all.

TEAMWORK AND SHARED LEADERSHIP

We believe the pursuit of excellence and demonstrating high professional standards are critical to our work. To ensure the best possible service for our community, the Fire and Rescue Department supports continuous training and encourages professional development.

EFFECTIVE COMMUNICATION

We believe communication is essential to the cohesiveness and performance of our organization. We are committed to providing effective and responsive means of communication throughout the organization and the community.

INTEGRITY

We understand the trust placed in us by the public and our colleagues is integral to the performance of our duties. We are committed to honest and ethical behavior, and we will hold ourselves accountable to these values.

COMMUNITY SERVICE and INVOLVEMENT

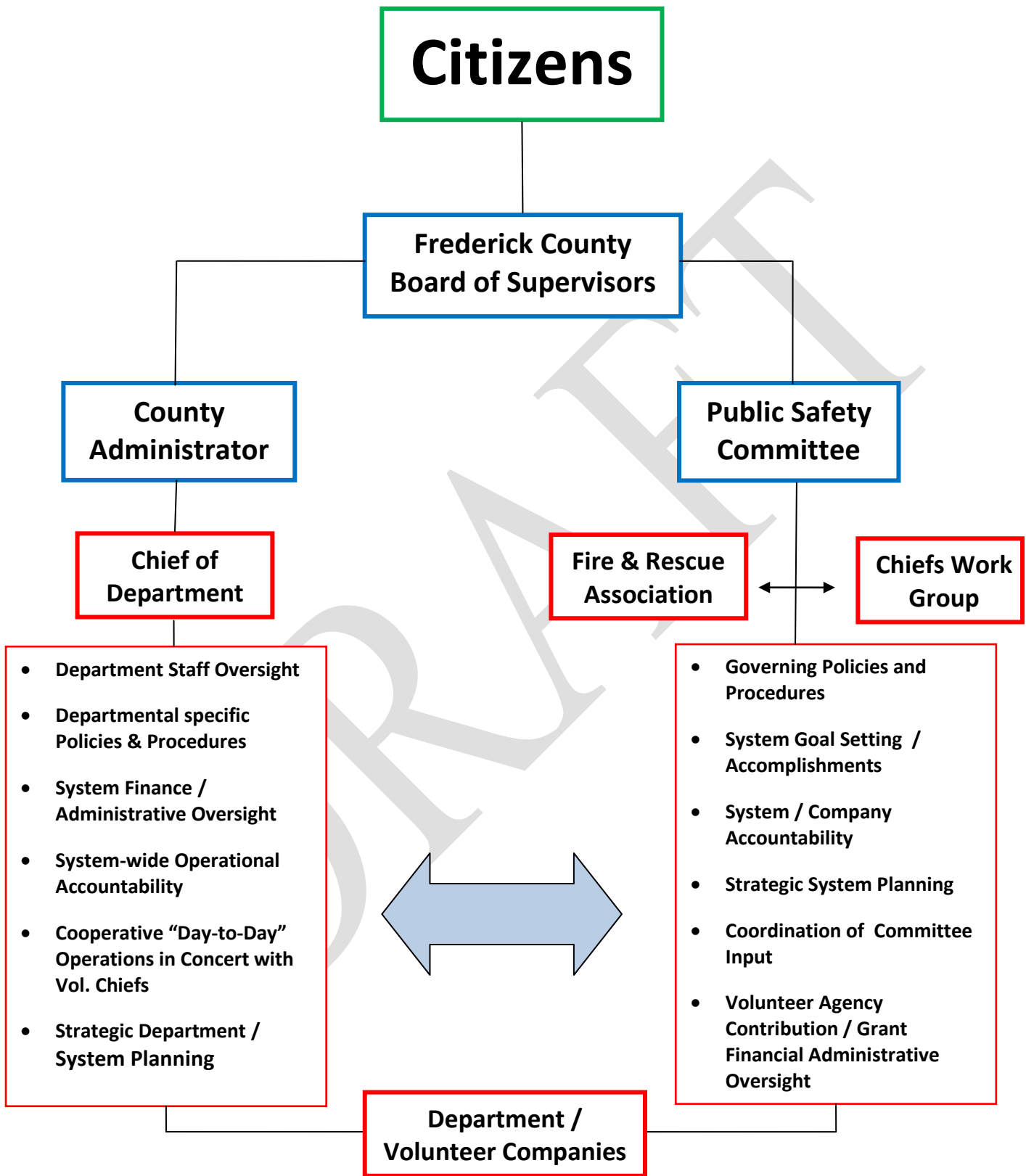
We believe we have a duty to be involved in the communities where we work. Our responsibility is to protect life, property, and the environment. We are committed to fulfilling our responsibility and to deepening our involvement in the community we serve. No request or inquiry will go unanswered.

INNOVATION

We recognize and understand that the constancy of change in our community and industry impacts our business daily. We are committed to seeking out and implementing innovative and progressive thinking to address change effectively to benefit those we serve.

DRAFT

Figure 1 – Combined Organizational Chart



Frederick County Volunteer Fire and Rescue Association

The Association is the principal organization to govern the eleven fire and rescue companies for the common success of the fire and rescue combined system. The Association manages the Capitol Improvements Program funded by the County. This fund is used for apparatus and equipment purchases.

Aid-to-Localities (Virginia Department of Fire Programs) Fund

The Aid-to-Localities Fund is derived from one percent of fire-related insurance coverage. Approximately 75% of the total fund goes directly to counties, cities, and incorporated towns within the Commonwealth, known as "Aid to Localities." The funds allocated, pursuant to the Code of Virginia, § 38.2-401, provides Virginia cities, towns and counties with funds to pay for training, construction of training centers, fire-fighting equipment and protective clothing. Allocations are population-based.

The FY14 funding for Frederick County is \$225,881.00

Four-for-Life Fund

The Virginia Office of Emergency Medical Services (OEMS) receives funding allocated from the Four-for-Life program annually. This funding is legislated by the Code of Virginia § 46.2-694, which stipulates that an additional \$4 per year is charged and collected at the time of vehicle registration and set aside as a special fund to be used only for EMS purposes. The money in the Four-for-Life fund is distributed as follows:

- 32% is distributed to the Rescue Squad Assistance Fund.
- 30% is disbursed through contracts and other procurements to support:
 - Emergency Medical Services training programs
 - Advanced Life Support training
 - Recruitment and retention programs
 - Emergency Medical Services system development, initiatives and priorities
 - Local, regional and statewide performance contracts for EMS
 - Technology and radio communication enhancements
 - Emergency preparedness and response
- 2% is distributed to the Virginia Association of Volunteer Rescue Squads to be used for the purpose of conducting volunteer recruitment, retention and training activities.
- 10% is to support OEMS.
- 26% is allocated as the "Aid to Locality" fund to provide local funding support for:
 - Training of EMS personnel
 - The purchase of equipment and supplies for emergency medical and rescue services.

Four-for-Life (Aid to Locality) Fund

In Fiscal Year 2007, the Aid to Locality fund balance was \$5,637,086.00. As required by the Code of Virginia, these funds are returned to the locality in which the passenger vehicle is registered. There are 134 recognized localities throughout Virginia (95 counties and 39 cities). Annually, as required by Code, each locality must submit a report to OEMS on the use/distribution of those funds prior to receiving additional funds under this program. Funding is withheld pending receipt of the annual report.

The FY14 funding for Frederick County is \$81,150.16

Fire and Rescue Chief's Work Group

The Chief's Work Group is comprised of the eleven volunteer fire and rescue chiefs or their designee. The Department Chief and Deputy Chief of Operations facilitate the monthly meetings. This group is responsible for developing standard operating procedures (SOPs) and standard operating guidelines (SOGs) for the combination Department. The group works to find various grants and other funding streams. The group works to ensure the best possible practices are followed. Temporary policies, known as Fire and Rescue General Orders, are the final element of the framework. Working in concert with the Department, basic service delivery goals and guidelines, establishment of the basic structure of the fire and rescue system, and volunteer company operational aspects have been the focus since the inception of the group.

Volunteer Companies

Frederick County has a history of strong volunteer fire and rescue companies. Eleven independent companies provide operational fire and rescue services. Currently the volunteer companies own all of the permanent operational fire and rescue stations and most of the apparatus and equipment, which includes fire pumpers, transport ambulances, ladder trucks, squad trucks, and other specialized equipment and apparatus.

Volunteer companies and members also support other activities to benefit their communities, including stand-by services at special events, and a variety of public education programs to include fire prevention education. Company activities also include fire apparatus maintenance and repair, station maintenance, self-contained breathing apparatus testing and repair, fire and EMS training, as well as street and area mapping for emergency response.

Table 3 - Frederick County Volunteer Fire and Rescue Organizations

Station	A-Shift	B-Shift	C-Shift	Day Shift Only
11	2	2	2	0
12	3	3	3	0
13	3	3	3	0
14	0	0	0	2
15	3	3	3	0
16	2	1	1	1
17	2	2	2	0
18	3	3	3	0
19	0	0	0	2
20	0	0	0	2
21	3	3	3	0
Cpts.	1	1	1	0
Total	22	21	21	7

Due to decreases in available operational volunteer members and an increase in first-due call volume, the current Day-Shift only stations have requested 24-hour career staffing. Several 24-hour stations have also requested additional staffing.

The volunteer component of the fire and rescue system is comprised of approximately 202 Operational volunteers and 365 Non-Operational volunteers¹, working in a variety of positions ranging from administrative and training to fundraising.

¹ The total number of volunteers (567) includes active, inactive, life members, auxiliary and administrative members.

Recruitment and retention continues to present a variety of challenges for the volunteer agencies. The physical and time demands associated with training, responding to an increased incident call volume, equipment/apparatus/facility maintenance, fundraising, and administrative responsibilities have created a deterrent to some potential volunteers. New programs and incentives have been implemented to retain and keep members involved in the fire and rescue system. Current Volunteer Benefits include:

- Length of Service Awards Program
- Personal Property Tax Reduction
- Life Insurance; Accident and Injury Coverage
- Reduced Amusement Park tickets and Vendor discounts
- Volunteer Appreciation Program which includes recognition awards

Our Volunteer Coordinator continues to develop programs to enhance the existing recruitment and retention programs and to support the programs developed by each volunteer company.

Career Divisions and Programs

The Department of Fire and Rescue has grown considerably since its 1990 inception in order to address staffing requests by volunteer fire and rescue companies. These requests are the direct result of an increased demand in services on volunteer resources due to an ever-expanding county population. Over the course of the Department's lifespan, the county population has increased by 58%. Future service demands will require additional career personnel to provide evening and weekend coverage where there is a need for 24-hour coverage and to fill staffing gaps at stations feeling the pressure of the nationwide volunteer shortage. Recruitment, training and retention of career Firefighter/EMTs will also continue to be a challenge in the competitive regional employment market.

As discussed early, the Fire and Rescue Department is divided functionally into three primary Divisions: Operations, Life Safety, and Training. Secondary Divisions include Emergency Management, Volunteer Recruitment and Retention, and EMS Billing. A Deputy Chief oversees the three primary Divisions.

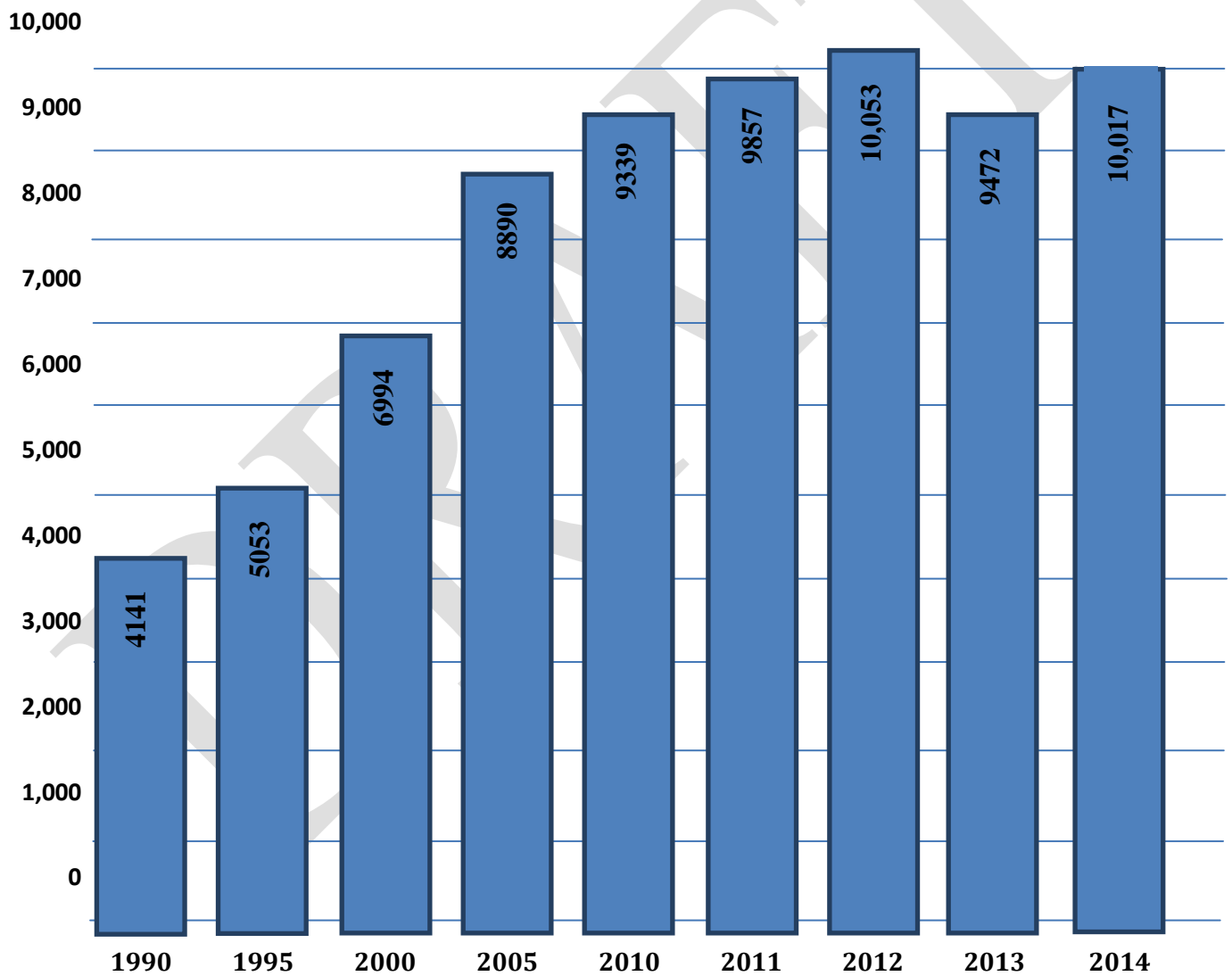
Operations

The Operations Division ensures the timely and effective response to and mitigation of emergency medical, fire, rescue, and hazardous materials incidents within the County. Personnel assigned to this division respond to all types of emergency incidents 24 hours per day, seven days per week. The division also coordinates the service delivery of the volunteer fire and rescue companies.

The Frederick County Fire and Rescue Department has two (2) career personnel assigned to all stations. The majority of Department employees are assigned to one of three 24-hour shifts. There are also three stations staffed from 6am until 4pm Monday through Friday. These include Gore, North Mountain and Reynolds Store stations. However, recently the volunteer chiefs of each of these stations has requested 24-hour staffing to replace day shift due to decreases in available operational volunteers and an increase in their respective first-due area call volume. Volunteer personnel staff their stations when available.

Demands on the County’s fire and rescue system continue to increase as the population grows. Emergency call volume is increasing, with 4,141 calls dispatched in 1990 compared to 10,017 calls dispatched in 2014, representing nearly a 141% increase in call volume since the Department’s inception. The expansion of the community college, assisted living facilities and other large warehouse facilities has created different types of potential hazards, and new demands such as proactive fire and safety inspections. Increases in both residential and non-residential development and service delivery challenges associated with an ever-growing community have created coverage deficiencies within the fire and rescue system. This translates into additional career staffing supplementing the work of the volunteer companies. The system must now be able to handle not only rural hazards, but also an expanding urban area and the hazards that are associated with that as well.

Figure 2 - Annual Incident Response



Life Safety

The Life Safety Division / Fire Marshal's Office is responsible for enforcing the Virginia Statewide Fire Prevention Code, performing safety inspections for county businesses, investigating causes of fires and explosions, issuing burning and blasting permits, reviewing fire protection system plans, and ensuring and educating the public about fire safety.

Pursuant to the Code of Virginia (§27-31 through §27-37.1) the Frederick County Fire Marshal's Office is responsible for the investigation of all fires, explosions, hazardous material incidents, and environmental crimes. The Division also regulates commercial blasting and is responsible to mitigate emergencies involving explosives and hazardous devices, as required under state law.

In addition to code enforcement and investigations, the Division is responsible for the Public Education program. This program includes a school based program at the elementary level, child safety seat installation and inspections, and a community outreach program which includes collaboration with other public and private sector partners.

The Frederick County Fire Marshal's Office welcomed the first explosives detection canine, Chance to the division in 2009. Then in 2012, the addition of a new accelerant detection canine named Walker joined the Department. Both Chance and Walker are trained daily to detect different scents. They are required to re-certify with ATF yearly.

In 2013, the Division completed nearly 400 inspections, including routine safety inspections, new construction, and complaints. There were 70 investigations, resulting in 12 criminal convictions, and the canine teams responded to 35 incidents to assist with local and surrounding jurisdictions' investigations.

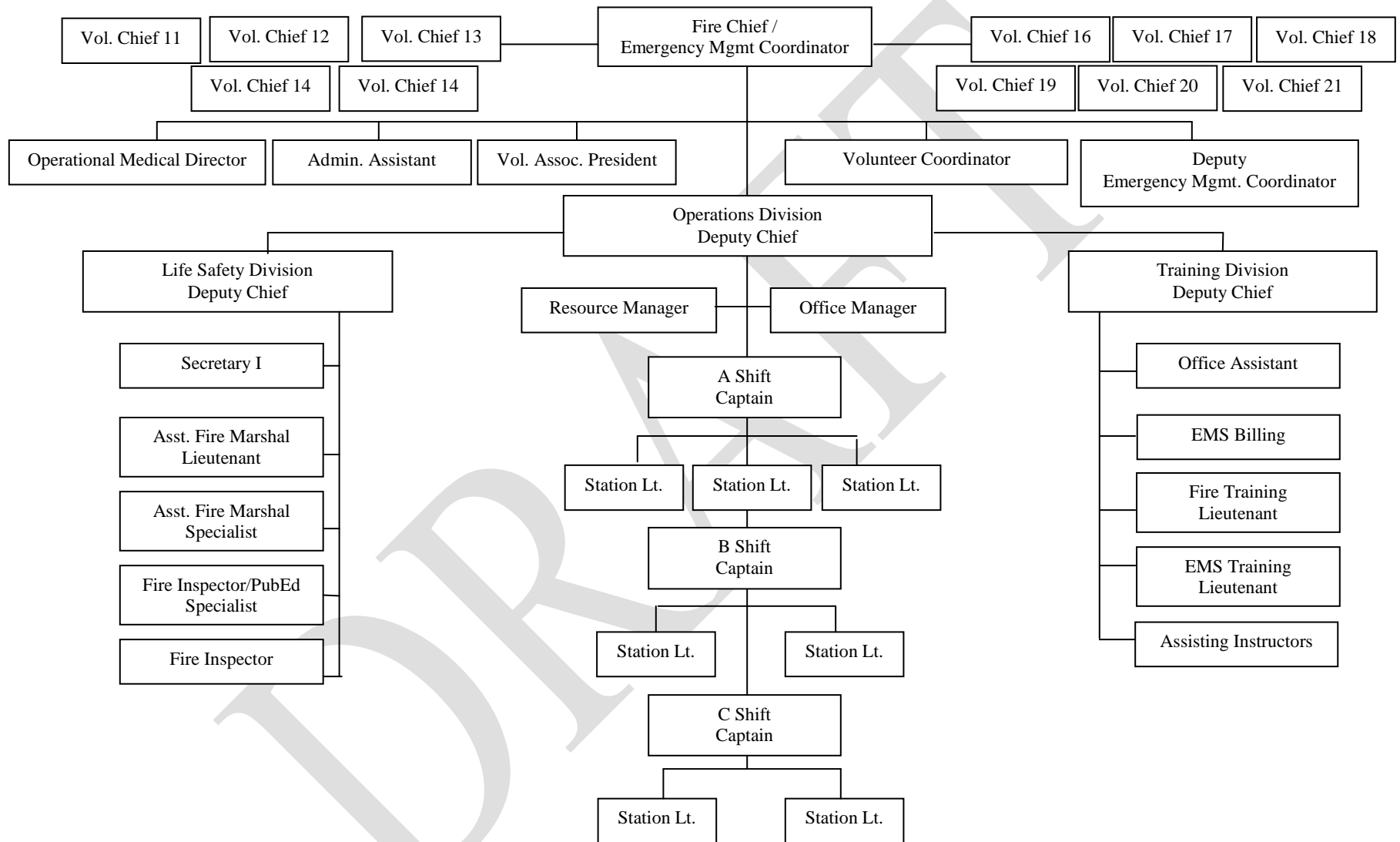
Training

The Training Division is responsible for the coordination and delivery of training related to fire, EMS, technical rescue, and hazardous materials utilizing career and volunteer instructors. Their mission is to facilitate quality and cost effective educational programs to the volunteer and career staff within the Fire and Rescue System.

The Division is responsible for maintaining continual knowledge of mandated laws, recommended standards, certification and training issues, course development issues and documentation / record keeping to assure that the volunteer and career staff are in compliance with local, state, and federal laws and regulations. They are also responsible for the administration and management of the Career Development Program within the Department.

The Training Division works extensively with the Virginia Department of Fire Programs, Virginia Department of Emergency Management, Virginia Office of Emergency Medical Services, United States Department of Homeland Security and various other local, state, and federal agencies on training requirements, certification, and curriculum development.

Figure 3 - Fire & Rescue Organizational Chart



Drivers of the Fire and Rescue Service

Population

The gross population and population density of the County represent one of the four key drivers of the fire and rescue service. Demands on the fire and rescue system will continue to increase as the population and population density continues to grow. Emergency call volume has increased from 9,101 incidents dispatched during 2009 (Population 77,611) to 10,017 incidents dispatched during 2014 (Population 82,000) (Table 4). It is estimated that the population will grow from approximately 82,000 in 2014 to 97,192² in 2020 (Table 5). A 16.6% increase for the period will directly impact the demand on the fire and rescue service. A direct link to the increase in the population is the increase in the number of housing units and population density throughout the County. It is estimated that the number of housing units for the fire and rescue service to protect will increase from 31,346 in 2010 (last census data) to 40,749 in 2020 (Table 6) or a 30% increase for the period.

Table 4 – Incident/Population Summary

Calendar Year	Total Incidents	Population
2009	9,101	77,611
2010	9,339	78,529
2011	9,857	79,603
2012	10,053	80,317
2013	9,472	81,207
2014	10,017	82,000 ³

Table 5 – Population Projections by Area⁴

Calendar Year	2010	2020	2030 ⁵
Population Total	78,529	97,192	114,539
Battalion I	25,697	32,889	41,455
Battalion II	31,611	40,094	47,060
Battalion III	21,221	24,209	26,024

Table 6 – Housing Unit Projections by Area⁶

Calendar Year	2010	2020	2030
Household Units	31,346	40,749	52,974

² According to the Frederick County Planning Department, we have been growing at an average rate of approximately 30% every 10 years. The 2020 projections when totaled are similar to the overall projection made by the Weldon Cooper Center.

³ 2014 Population is estimated based on current growth trend.

⁴ Battalion I: Stephens City, Middletown, Star Tannery; Battalion II: Clear Brook, Greenwood, Millwood, Rt. 50E; Battalion III: Gore, Round Hill, Gainesboro, North Mountain, Reynolds Store.

⁵ The 2030 projections are based on the 2030 Comprehensive Plan.

⁶ Growth rate of 3% per year, based on 2030 Comprehensive Plan Residential Development.

Response Goals

The second key driver of the fire and rescue service is response goals. Response goals are critical to the planning process for fire and EMS agencies, as they impact the location of fire/rescue stations, as well as the apparatus and system staffing in those stations. To develop these goals, agencies use accepted standards such as EMS survival rates from the American Heart Association (AHA), and Flashover Curves as indicated by the National Fire Protection Association (NFPA). These standards define the actions that must be performed within scientifically researched time frames in order to have a better outcome for the person or the property.

Rationale for EMS Response Goals

The American Heart Association Chain of Survival (Figure 3) outlines actions that must be taken in order to successfully resuscitate victims in an out-of-hospital cardiac arrest scenario. The initial consideration is how fast basic life support can be provided to citizens who suffer a cardiac arrest in Frederick County. AHA studies have shown that cardio-pulmonary resuscitation (CPR) must begin immediately, and in all cases no later than four to six minutes of a cardiac arrest. Early defibrillation must then follow early CPR. According to the AHA, the chance for successful restarting of the heart through defibrillation decreases by 10% for every minute past the initial cessation of the heart this intervention is not delivered.

Early access, early CPR, and early defibrillation must be followed by advanced life support (ALS) in order to provide advanced coronary care. The combination of late CPR (more than four minutes) and delayed advanced life support significantly decreases the chances for survival without complications.

An additional consideration is early ALS intervention for patients that are not yet in cardiac arrest, but have a cardiac rhythm that will become lethal if not treated rapidly. According to the American Heart Association, early advanced care provided by personnel trained and certified as ALS providers at the scene serves 3 primary purposes in the treatment of cardiac emergencies:

ALS intervention is designed to prevent cardiac arrest through the use of advanced airway management, administration of medications, and other ALS interventions; ALS intervention includes therapies that may help resuscitate victims of cardiac arrest who are not in Ventricular Fibrillation (VF), or who are not responding to defibrillation; ALS intervention can provide defibrillation if VF develops and prevent refrillation and help stabilize the patient after resuscitation.

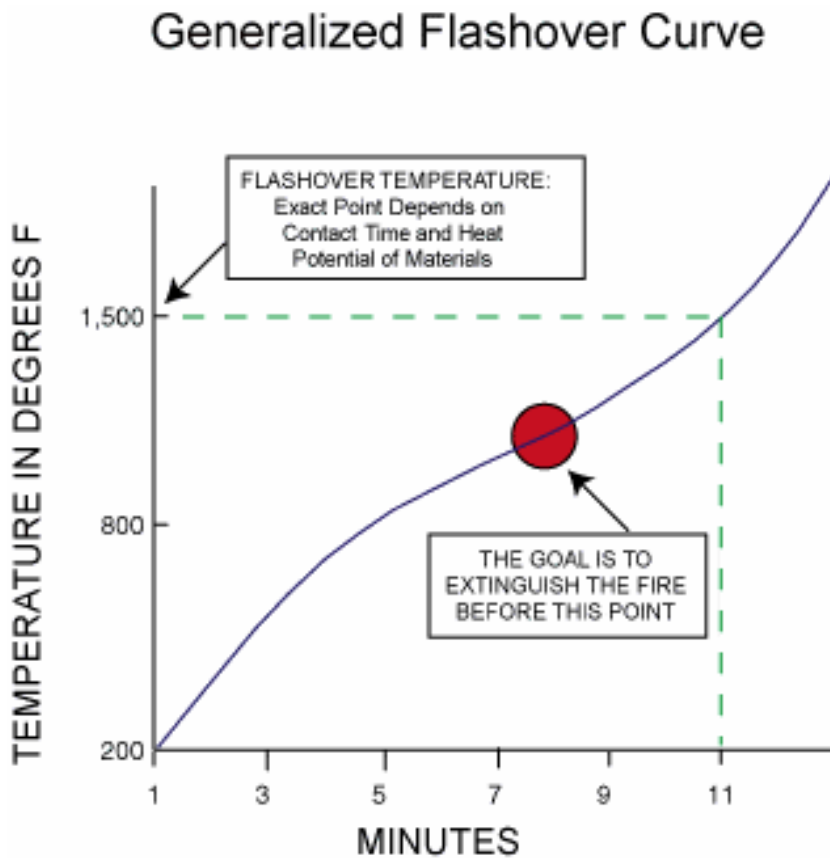
Figure 4 - American Heart Association Chain of Survival



Rationale for Fire Suppression Response Goals

In order to have an aggressive fire suppression program, units must be able to apply water to a fire prior to the point of flashover. Flashover occurs anywhere from four (4) to eleven (11) minutes after the fire begins (Figure 5). This of course is dependent on the intensity of the fire and the materials that are burning within the structure. When the room bursts into flame, flashover has occurred.

Figure 5 – NFPA Flashover Curve



Flashover is the point at which the contents a room or structure is heated to the point at which the contents of the room will all become consumed with flames. It is the end of an effective search and rescue in a room; it means the death of any person trapped in the blazing room—either civilians or firefighters. It signals the end of using a portable extinguisher to extinguish the fire; an attack hose-line is required after flashover occurs. It signals the end of the growth stage and that the fire is in the second stage of combustion—the fully developed stage. Finally, flashover signals the change from “contents” to a “structure fire.” This is the beginning of the collapse danger.

In order to intervene effectively in the fire scenario, fire suppression must begin prior to flashover, normally within approximately **eight minutes** after being dispatched. Once flashover occurs, fires expand exponentially, which means the fire will double every second after flashover has occurred. This fire expansion causes more property damage, creates less chance of civilian survival, and increases the potential for firefighter injuries. The response goal is to intervene prior to flashover occurring.

The Frederick County Fire and Rescue Department is seeking to establish the following for system turnout, response goals, and seeking to implement the Enhanced Operating Level and Standards:

Definitions

- Turnout Time: defined as the time from completion of the initial incident dispatch until the first appropriately staffed apparatus responds.
- Response Time: defined as the time from the initial response of the first appropriately staffed apparatus until arrival on the scene of the first emergency unit.
- Minimum Apparatus Staffing⁷: defined as the minimum number of personnel to respond on specific apparatus, Engine-3 personnel; EMS Unit-2 personnel

Guideline Standards

- Minimum Response and On Scene Time Criteria
- All dispatches for either Advanced or Basic Life Support (ALS/BLS) emergencies: **10 minutes.**
- All dispatches for fire incidents: **10 minutes with 10 personnel.**
- Failure to meet the turnout standard on an emergency incident is defined as:
- The emergency incident is the first fire and/or EMS incident for the company;
- The company does not turnout within the times specified;
- The company responds with staffing not meeting the Minimum Apparatus Staffing requirements.

National Standard Response Goals

There are two national response standards that drive response goals for substantially all career, combination, and volunteer fire and rescue departments. NFPA Standard 1710, *Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* is the response goal standard for substantially all career departments. NFPA Standard 1720, *Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments* is the response goal standard for volunteer and combination⁸ departments.

⁷ In order to meet Minimum Apparatus Staffing, personnel must be in the station 24/7; personnel responding in personally owned vehicles (POVs) or responding by marking up on portables do not count towards the Minimum Apparatus Staffing.

⁸ A department having emergency service personnel comprising less than 85% majority of either volunteer or career membership.

Frederick County Fire and Rescue Department currently aligns with NFPA 1720 for fire suppression response but does not currently meet this standard. Table 7 defines the **minimum** response times / goals for NFPA 1720 ⁹.

Table 7 – NFPA 1720 Response Goals ¹⁰

Demand Zone	Demographics	Staffing/Response Times	Achievement %
Special Risks	AHJ Determines	AHJ Determines	90
Urban	>1000 people/sq. mile	Staff 15/Response Time – 9 Minutes	90
Suburban	500-1000 people/sq. mile	Staff 10/Response Time – 10 minutes	80
Rural	<500 people/sq. mile	Staff 6/Response Time – 14 Minutes	80
Remote *	Travel Distance >8 miles	Staff 4	90

*(Remote) Upon assembling the necessary resources at the emergency scene, the fire department should have the capability to safely commence an initial attack within two minutes.

Enhanced Operating Levels and Standards

The optimal response goal and turnout time service level is:

- Response time performance objective equal to the Suburban demand zone identified in Table 7 (Fire Suppression)
- Response time performance objectives equal to Table 8 for each demand zone (EMS)

Table 8 – Frederick County EMS Response Goals

Demand Zone	Demographics	EMS	Achievement %
Suburban	500-1000 people/sq. mile	10 Minutes	80
Rural	<500 people/sq. mile	10 Minutes	80

- A performance objective of not less than 80% for the achievement of each minimum turnout criteria outlined within this plan.
 - Companies achieving 60% to 79% over a thirty-day period shall be placed on dual response until 80% achievement is sustained for a period of thirty days.
 - Failure to achieve 80% over the next thirty-day period will require the company President and Chief Officers to provide the Deputy Chief of Operations a plan to resolve the turnout time issues for their company.
 - Companies achieving <59% over a thirty-day period shall be placed on immediate dual response, and will require the company President and Chief Officers to provide the Deputy Chief of Operation a plan to resolve the turnout times issues for their company. Failure to correct the turnout time issues for their company as specified will result in immediate consideration for budget enhancements to ensure service delivery.

⁹ NFPA 1720 combines staffing with response times as the measurement for response goals.

¹⁰ Demand zones categorized utilizing US Census Bureau criteria.

Impacts and Outcomes if adopted

The enhanced standard, if adopted, will provide fire suppression and emergency medical service delivery around the clock by the combined system meeting the achievement guidelines established in NFPA 1720.

Table 9 – Comparison of Response Goal / Turnout Time Service Level ¹¹

Locality	Fire Response Goal	BLS Response Goal	ALS Response Goal ¹²
Henrico County, Virginia	≤5 minutes 90% achievement	≤5 minutes First Responder 90% achievement ≤15 minutes BLS Ambulance 90% achievement	≤9 minutes First Responder ALS 90% achievement ≤9 minutes ALS Ambulance 90% achievement
Chesterfield County, Virginia	≤6 minutes 90% achievement	≤6 minutes 90% achievement	≤6 minutes 90% achievement
Spotsylvania County, Virginia	≤8 minutes: Urban 80% achievement ≤12 minutes: Rural 80% achievement	≤8 minutes: Urban 80% achievement ≤12 minutes: Rural 80% achievement	≤8 minutes: Urban 80% achievement ≤12 minutes: Rural 80% achievement
Loudoun County, Virginia	≤9 minutes: Urban 90% achievement ≤14 minutes: Rural 80% achievement	≤10 minutes: Urban 80% achievement ≤14 minutes: Rural 80% achievement	≤10 minutes: Urban 80% achievement ≤15 minutes: Rural 80% achievement

Current Operating Levels and Standards

The current system response goal and turnout time service level is:

Table 10 – Current system response goal and turnout time service level

Call Type	Minimum Turnout Criteria	Response Goal
EMS – ALS or BLS Emergency	< 5 minutes	None
Fire Response	< 5 minutes	None

Impacts and Outcomes if adopted

The current standard as adopted will continue to provide fire suppression and emergency medical service delivery to the service level defined in Table 10.

¹¹ Services include engines, ladders, heavy squads, ambulances, brush trucks, and tankers.

¹² ALS response times factor ALS Chase vehicles responding with BLS ambulances.

Service Area

Meeting both population demands and response goals require that stations and services be strategically located throughout the County's 416 square miles of both suburban and rural composition. The original eleven (11) fire and rescue stations are no longer able to provide emergency response to areas of the County that have experienced, or are projected to experience growth in population and housing. This has required the County and the Department to plan for future stations in order to reduce existing response times, and to meet the increased service demands because of this growth.

Current station locations are based on historical needs of villages, communities, and incorporated towns where housing and population were, and to an extent remain centralized today. Over time these stations became, and in many cases remain the center point in these communities. As indicated, an increase in growth in the County (32.3% between 2000 and 2010) and demand for services (30% increase between 2000 and 2010) has driven the need to add new stations and increase fire and rescue services.

Future station locations and services will be driven by population, which increases call volume, and the need to decrease response goals due to travel time. The 2030 Comprehensive Plan includes future fire and rescue stations within the County in accordance with the response study conducted in 1999¹³ that concluded the need for five additional fire and rescue stations. These stations are to cover the areas listed below:

- Green Springs / White Hall
- Route 522 South / Route 277 East
- Middle Road / Cedar Creek Grade
- Apple Pie Ridge / Route 522 North
- Route 7 / Redbud Road

This response study indicated that in many areas a ten-minute total response time was not being met. Today, this still holds true. Redistribution of current volunteer apparatus to these stations can enhance response performance. Non-residential areas such as retail, office, and industrial areas require increased fire protection because specialized equipment is necessary to ensure safety for these land uses; other land uses identified as target hazards continue to grow. These include land uses such as schools, nursing homes, daycare centers, and industrial facilities. These land uses have a higher risk of injury due to the specific demographics of persons utilizing these facilities.

¹³ The 1999 Response Study was part of the FCPS Government Service Learning Projects.

Figure 6 - Current First Due Map and Station Locations

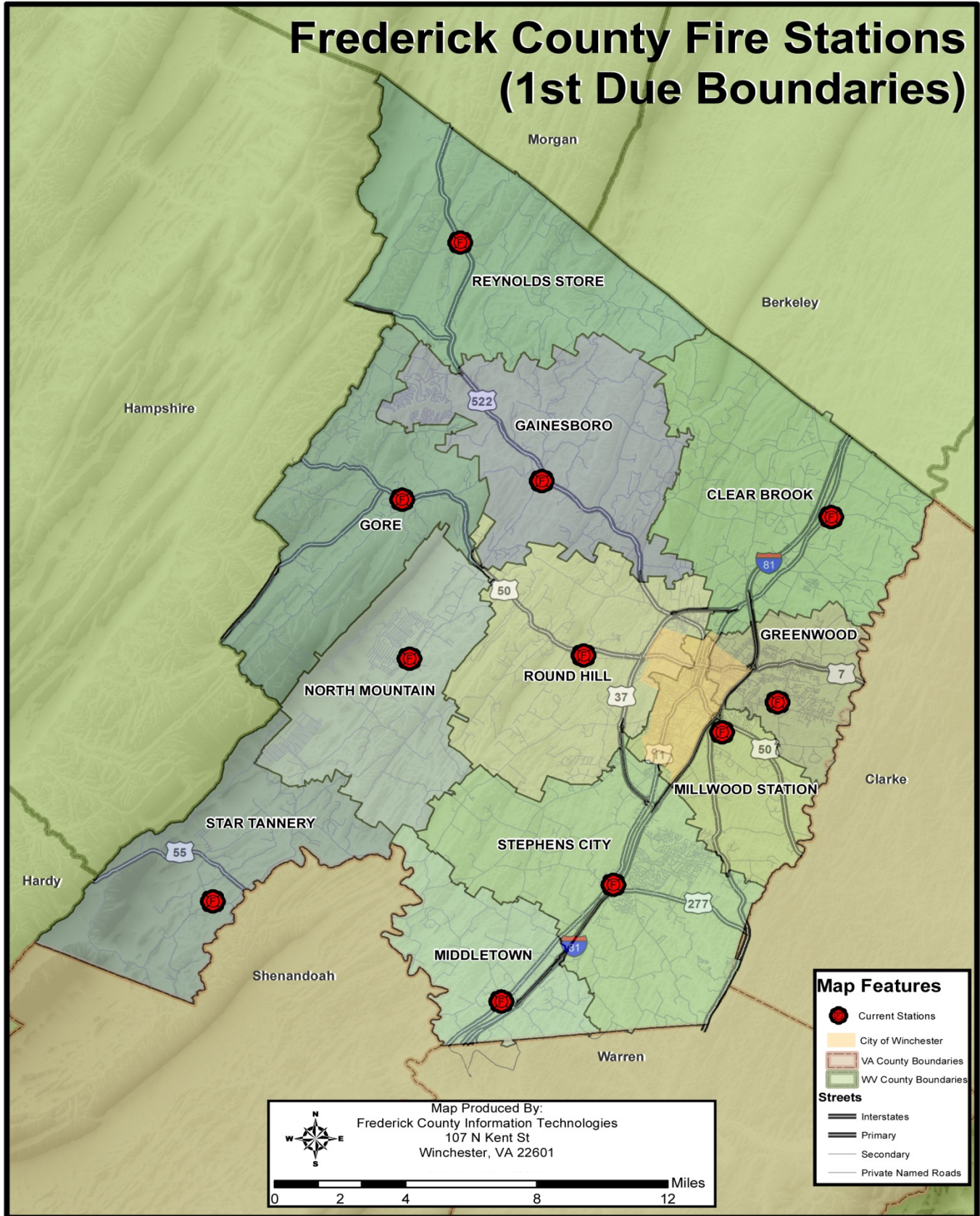
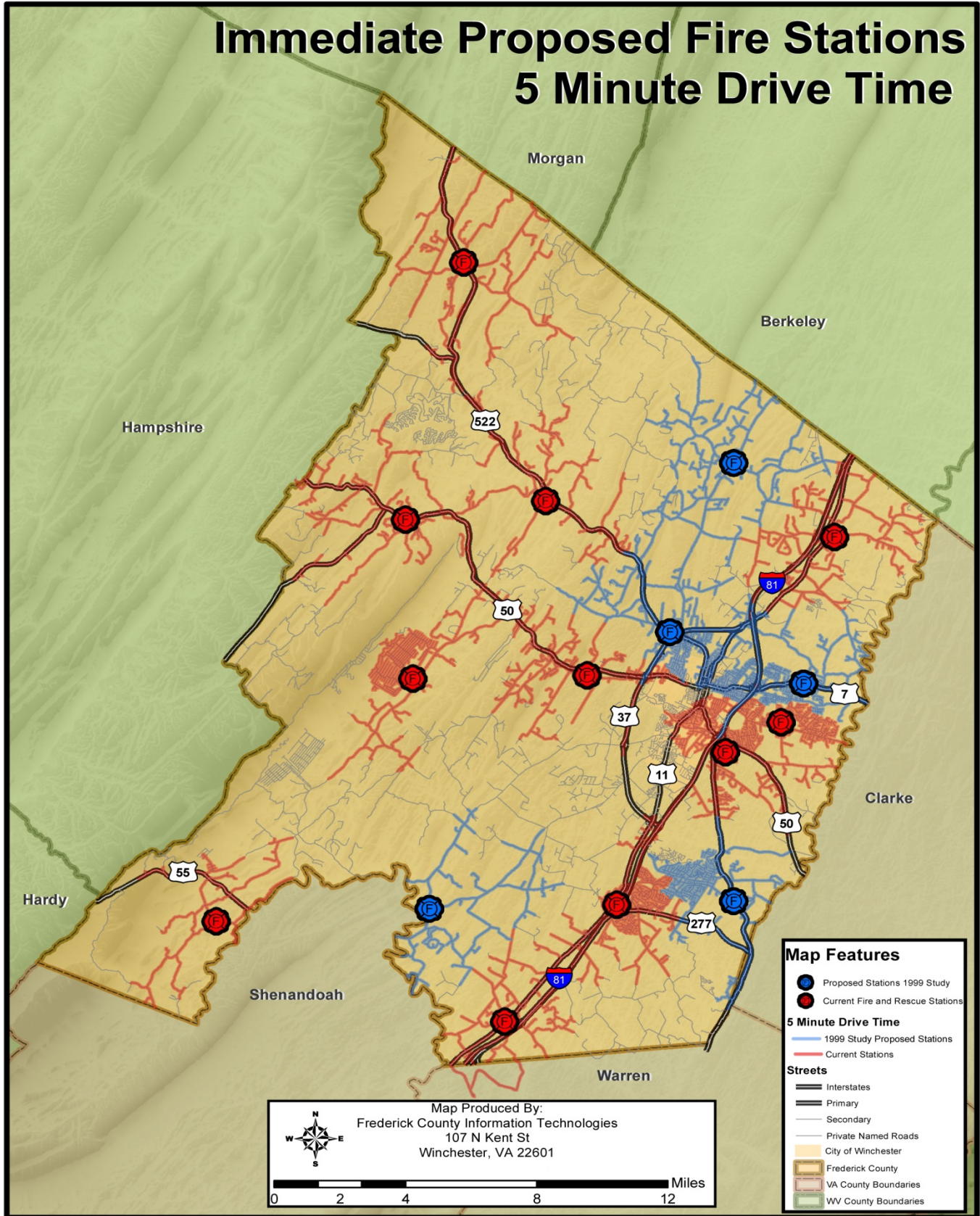


Figure 7 - Proposed Fire and Rescue Locations



Staffing

The third driver of the fire and rescue service is staffing, which has a direct link to response goals, as immediately available staffing significantly reduces turnout time, therefore reducing total response goals.

Current Staffing Levels

The combined system career staffing levels are currently established by the Department as requested by the Volunteer Companies and as appropriated by the Board of Supervisors as follows:

Table 11 – Minimum Station Career Staffing Levels

Station	A-Shift	B-Shift	C-Shift	Day Shift Only
11	Lieutenant and 1 – FF / EMT	2 – FF / EMTs	2 – FF / EMTs	0
12	3 – FF / EMTs	3 – FF / EMTs	3 – FF / EMTs	0
13	3 – FF / EMTs	Lieutenant and 2 – FF / EMTs	3 – FF / EMTs	0
14	0	0	0	2 – FF/EMTs
15	3 – FF / EMTs	Lieutenant and 2 – FF / EMTs	3 – FF / EMTs	0
16	Lieutenant and 1 – FF / EMT	1 – FF/EMT	1 – FF /EMT	1 – FF/EMT
17	2 – FF / EMTs	2 – FF / EMTs	Lieutenant and 1 – FF / EMT	0
18	3 – FF / EMTs	Lieutenant and 2 – FF / EMTs	3 – FF / EMTs	0
19	0	0	0	2 – FF/EMTs
20	0	0	0	2 – FF/EMTs
21	Lieutenant and 2 – FF / EMTs	3 – FF / EMTs	3 – FF / EMTs	0
Cpts.	1	1	1	0
Total	22	21	21	7

Currently the Department provides career firefighters to the volunteer companies; the Department does not have a minimum apparatus staffing level established, as there currently are only two (2) staff members available per station. Volunteer and career firefighters respond on a first call basis – meaning whatever type of incident is dispatched dictates the appropriate apparatus staff responds with. On any given day there are on average, only 2 to 3 staff in the station available to provide emergency services. It takes only one response to deplete a station and leave a community unprotected. The majority of Operational volunteers respond from their homes, not the station, greatly reducing Response Goals. A manpower shortage is the biggest problem faced by Frederick County Fire and Rescue.

Maintaining the service levels will require a combined effort from both the Volunteer Companies and the Career Department. In addition, a continued commitment from Frederick County Administration

and the Board of Supervisors is also required. Volunteers must be recruited and retained in order to deliver services to the community through a combined system. This will require a combination of several program areas administered by the Department to include the continuance of quality, flexible scheduled training programs, administrative assistance through record keeping, a central application / orientation process, and an aggressive recruitment program. Failure to maintain and/or increase volunteer participation will have an impact on field services, as additional career firefighters will be required.

National Standard Staffing Levels

Determining service staffing levels prescribes the ability for the combined system to deliver service to its customers. In support of the system’s mission statement, service delivery is based on the ability to place adequate numbers of personnel and equipment (companies)¹⁴ on emergency scenes within prescribed time frames (Department Response Goals / NFPA 1720).

NFPA 1720 recommends a **minimum** national standard for staffing fire suppression responses (Table 12). The primary emphasis of this staffing standard is to ensure emergency response is reliably and consistently delivered to each established demand zone, and to ensure that a sufficient number of members are available to operate safely and effectively.

Table 12 – NFPA 1720 Staffing Standard¹⁵

Demand Zone	Demographics	Staffing/Response Times	Achievement %
Special Risks	AHJ Determines	AHJ Determines	90
Urban	>1,000 people/sq. mile	Staff 15/Response Time – 9 Minutes	90
Suburban	500-1,000 people/sq. mile	Staff 10/Response Time – 10 minutes	80
Rural	<500 people/sq. mile	Staff 6/Response Time – 14 Minutes	80
Remote *	Travel Distance >8 miles	Staff 4	90

*(Remote) Upon assembling the necessary resources at the emergency scene, the fire department should have the capability to safely commence an initial attach within two minutes.

¹⁴ Companies are defined in NFPA 1720 as a group of members under the direct supervision of an officer; trained and equipped to perform assigned tasks; usually organized as engine companies, ladder companies, squad companies, rescue companies, or multi-functional companies; usually operating with one piece of fire apparatus; arriving at the incident scene on apparatus.

¹⁵ Personnel responding to fires and other emergencies shall be organized into company units or response teams and shall have required apparatus and equipment.

Table 13 – The staffing service level is comparable to:

Locality	Engine	Ladder	Tanker	Heavy Squad	EMS Unit
Henrico County, VA	3	3	No Data	3	2
Chesterfield County, VA	4 ¹⁶	3	N/A	N/A	2
Prince William, VA	3 ¹⁷	4	1	4	2
Loudoun County, VA	3	4	1	4	2

Current Operating Levels and Standards

The current service level provides an average of 28 career personnel Monday – Friday and 21 career personnel Saturday and Sunday (Table 11, page 26).

- | | |
|---|---|
| <p>Monday – Friday</p> <ul style="list-style-type: none"> • 1 Captain • 2 Lieutenants • 25 Firefighters/EMTs | <p>Saturday and Sunday</p> <ul style="list-style-type: none"> • 1 Captain • 2 Lieutenants • 18 Firefighters/EMTs |
|---|---|

Required combined system career personnel to satisfy this standard:

- 7¹⁸ total career personnel required to staff daytime hours (6am – 4pm Monday through Friday)
- 18¹⁹ total career personnel required to staff 24/7 companies (7am – 7am)
 - Ratio: 1 career firefighter to 1,000 population²⁰ .775/1,000

Impacts and Outcomes if adopted

The current standard as adopted provides career personnel through the combined system to staff each volunteer company, for the prompt initiation of fire suppression and emergency medical service delivery around the clock meeting the achievement standard established.

*There is no current volunteer personnel standards in place. However, it should be noted that the Fire and Rescue System has volunteers that respond to fire and EMS emergencies every day.

¹⁶ Eight stations staffed at 4; ten stations staffed at 3
¹⁷ Four stations staffed at 4; 16 stations staffed at 3
¹⁸ Includes FY06 enhancements
¹⁹ Includes FY06 enhancements
²⁰ Based on 80,000 population and current staffing level standard

Enhanced Operating Levels and Standards

This service level adopts minimum apparatus staffing levels within the Department for engines and transport units and includes a moderate increase in station staffing levels to accommodate implementing minimum apparatus staffing levels.

The enhanced service level is 56 personnel per day (Table 14):

- 1 Captain
- 2 Lieutenants
- 31 Firefighters
- 22 EMS Providers

Table 14 - Minimum Apparatus and Station Staffing Levels: Combined System

Apparatus Type	Minimum Staffing Level ²¹
Engine Companies	3
EMS Transport Units	2
Total Station Staffing Level	5

Definitions

- Engine Company Personnel – Three (3) firefighters meeting Minimum Staffing Standards; one (1) **must** be at least an EMT-Basic and one (1) **must** be certified as Driver/Pump Operator.
- EMS Transport Unit Personnel – Two (2) EMS providers meeting Minimum Staffing Standards; in compliance with Virginia Department of Health, Office of Emergency Medical Services (VDH-OEMS) Rules and Regulations to operate at varying levels:
 - Ambulance – Driver and EMT
 - Rescue – EMT and Enhanced
 - Medic – EMT and Intermediate or Paramedic

Required combined system personnel to satisfy this standard:

- 73 total system-wide volunteer personnel required to staff evening hours (4pm – 6am), and daytime services not staffed by career personnel²²
- 7²³ total career personnel required to staff daytime hours (6am – 4pm Monday through Friday)
- 20²⁴ total career personnel required to staff 24/7 companies (7am – 7am)
 - Ratio: Volunteer to Career (daily staffing) - 73/28
 - Ratio: Volunteer to Career (total) - 511/71
 - Ratio: 1 Career firefighter to 1,000 Population - .87/1,000
 - Ratio: 1 Volunteer firefighter to 1,000 Population - 6.2/1,000

In 2011, the number of operational volunteer personnel responding to 10% or more of their respective first-due calls totaled 113. In 2014, the number of operational volunteer personnel responding to 10%

²¹ In order to meet Minimum Apparatus Staffing, personnel must be in the station 24/7; personnel responding in personally owned vehicles (POVs) or responding by marking up on portables do not count towards the Minimum Apparatus Staffing.

²² Utilizing one (1) twelve (12) hour shift per week per volunteer, a total of 511 operational, certified and active volunteers would be required to achieve the Enhanced Standard.

²³ Includes FY06 enhancements

²⁴ Includes FY06 enhancements

or more of their respective first-due call volume totaled only 62, representing a 45% decrease in only three years. To date, volunteer companies within the combined system *with* on-call duty crews ready at the station to respond to emergency incidents continues to decline. In order to obtain this enhanced staffing standard, volunteer duty crews and/or an increase in the number of career personnel would be required.

Impacts and Outcomes if adopted

The enhanced standard if adopted will provide personnel through the combined system to staff Engine Companies and EMS Transport Units in each station where these response units are located, for the prompt initiation of fire suppression and emergency medical service delivery around the clock meeting the achievement standard established by the department.

Volunteer Staffing Value

As already noted, maintaining the service levels in the staffing standards (Current, Enhanced) will require a mutual effort from both the volunteer companies and the career department. Volunteers must be rigorously recruited and retained in order to deliver services to the community through a combined system. The recruitment of volunteer staff not only delivers fire and rescue services to the community through the combined system, but also reduces personnel costs to the Department's annual budget.

In April 2014, Independent Sector²⁵ announced that the 2013 estimate for the value of a volunteer hour is \$22.55 per hour. Based on the volunteer to career staffing ratios for each standard to staff Engine Companies, Ladder Companies, Tanker Companies, Heavy Squad Companies, and Ambulance Companies in each station where these response units are located, the following quantifies the value volunteer staffing provides:

Enhanced Standard: 511 x 12 hours per week x 52 weeks x \$22.5 per hour = \$7,190,383.20

²⁵ Independent Sector is a Washington, DC based nonprofit, nonpartisan coalition of national organizations, foundations and corporate philanthropy programs.

Insurance Services Office

The fourth and final driver of the Department is the Insurance Services Office, Inc. (ISO), which completed a countywide survey of Frederick County's fire suppression services and has assigned classifications, which could increase or reduce residential and commercial property insurance rates, dependent upon distance from fire stations and available water sources.

ISO's Public Protection Classification (PPC) Program plays an important role in the underwriting process at insurance companies. While use of the program is voluntary, most insurers in the United States use the information as part of their decision-making process when evaluating risk, coverage levels, and pricing for commercial and personal property insurance.

By classifying communities' abilities to suppress fires, ISO is able to help communities evaluate their public fire protection services through its PPC program. The program provides an objective standard that helps localities in planning and budgeting for facilities, equipment, and training. By securing lower fire insurance premiums for communities with better public protection, the PPC program provides incentives and rewards for communities that choose to improve their firefighting services.

The PPC is derived from the field analysis and other information supplied in relation to a community's fire suppression delivery system. The ISO analysis concentrates on three primary areas: the fire department (equipment, staffing, and training), emergency communications, and water supply. ISO analyzes relevant data using their Fire Suppression Rating Schedule (FSRS). Based upon the data, ISO assigns a Public Protection Classification from 1 to 10 (Class 1 generally represents superior property fire protection, and Class 10 indicates that the area's fire-suppression program doesn't meet ISO's minimum criteria).

In mid-2014, all communities within Frederick County were updated with current ISO ratings. Table 15 shows the current ISO Public Protection Classification for each of the 11 companies within the system.

Table 15 – ISO Public Protection Classification

Station	ISO Class Rating
Stephens City	5/9
Middletown	5/9
Clear Brook	6/6Y
Gore	9/10
Round Hill	6/9
Star Tannery	9/10
Greenwood	6/9
North Mountain	9/10
Reynolds Store	9/10
Millwood	6/9

The classification numbers are interpreted as follows:

- Class 1 through (and including) Class 8 represents a fire suppression system that includes an FSRS creditable dispatch center, fire department, and water supply.
- Class 8B is a special classification that recognizes a superior level of fire protection in otherwise Class 9 areas. It is designed to represent a fire protection delivery system that is superior except for a lack of a water supply system capable of the minimum FSRS fire flow criteria of 250 gpm for 2 hours.
- Class 9 is a fire suppression system that includes a creditable dispatch center, fire department but no FSRS creditable water supply.
- Class 10 does not meet minimum FSRS criteria for recognition, including areas that are beyond five road miles of a recognized fire station.

If the classification is a single class, the classification applies to properties with a Needed Fire Flow of 3,500 gpm or less in the community. If the classification is split (e.g., 6/9), as is the case with all County stations, the following applies:

- The first class (e.g., “6” in a 6/9) applies to properties within 5 road miles of a recognized fire station and within 1,000 feet of a fire hydrant or an approved alternate water supply.
- Class 8B or class 9 applies to properties beyond 1,000 feet of a fire hydrant but within 5 road miles of a recognized fire station.
- Class 10 applies to properties over 5 miles of a recognized fire station and no recognized water supply.
- Specific properties with a Needed Fire Flow in excess of 3,500 gpm (i.e., high-hazard warehouse) are evaluated separately and assigned an individual classification.

Improvements

A review of each fire department accounts for 50% of the total classification, based on meeting certain set criteria. ISO focuses on a department’s first alarm response and initial attach to minimize potential loss. The criteria is then further broken down into several categories which assigns points based on number of available apparatus, reserve apparatus, water capacity, deployment, personnel and training.

Even the best fire department will be less than fully effective if it has an inadequate water supply. Similarly, even a superior water supply will be less than fully effective if the fire department lacks the equipment or personnel to use the water. The Fire Suppression Rating Schedule score is subject to modification by a divergence factor, which recognizes disparity between the effectiveness of the fire department and the water supply. The Divergence factor mathematically reduces the score based upon the relative difference between the fire department and water supply scores.

Impacts and Outcomes if adopted

By classifying communities' ability to suppress fires, ISO helps the communities evaluate their public fire-protection services. The program provides an objective, countrywide standard that helps fire departments in planning and budgeting for facilities, equipment, and training. By securing lower fire insurance premiums for communities with better public protection, the PPC program provides

incentives and rewards for communities that choose to improve their firefighting service. One reward is potential new business and industry being attracted to the area due to better ISO ratings and lower insurance premiums.

ISO recognizes the dynamic and comprehensive duties of a community's fire service and understands complex decisions a community must make in planning and delivering emergency services. A community's investment in fire mitigation is a proven and reliable predictor of future fire losses. Statistical data on insurance losses bears out the relationship between excellent fire protection, as measured by the PPC program, and low fire losses.

ISO is the leading supplier of data and analytics for the property/casualty insurance industry. Most insurers use PPC classifications for underwriting and calculating premiums for residential, commercial, and industrial properties. Each insurance company independently determines the premiums it charges its policyholders. The way an insurer uses ISO's information on public fire protection may depend on several things; the company's fire-loss experience, ratemaking methodology, underwriting guidelines, and its marketing strategy.

Based upon a quote from a local insurance agent, a homeowner with a house valued at \$150,000 that has an annual premium of \$859 will have a potential savings of \$175 when their community's ISO rating goes from 6 to 3.

Facilities and Vehicles

This Service Plan outlines the planned architectural, engineering, and construction of eight additional stations over the next five to ten years, as well as the planning and implementation for existing station renovations. The greatest factor contributing to the need for new fire and rescue stations is the rapid population growth and increase in dwelling units within the County.

Also discussed are the vehicle and apparatus needs of new and existing stations in order to continue to meet community needs. The 2010-2015 Capital Improvement Plans (CIP) and the 2030 Comprehensive Plan outline a method for this service expansion and renovation in terms of projects and projected costs. Table 16 includes station recommendations from the 1999 Response Study, conducted as a Government Service Learning project, as well as additional station locations needed to meet the 10-minute response goal as outlined in the 2030 Comprehensive Plan *and* to meet the proposed response goals.

New Stations

Table 16– Proposed Fire and Rescue Stations

Station Location	Apparatus Needs
Tasker Road	Engine and Ambulance
Lake Holiday	Engine and Ambulance
Green Spring Road	Engine/Tanker and Ambulance
Mountain Falls	Engine and Ambulance
Route 7 / Morgan Mill Road	Rescue/Engine and Ambulance
Apple Pie Ridge Road	Engine, Ambulance and Brush Truck
Route 37 / Cross Point	Quint/Engine and Ambulance
Middle Road	Engine/Tanker, Ambulance and Brush Truck

Tasker Road

The current Stephens City Fire and Rescue station is the busiest in Frederick County. Assistance to the majority of this urban and suburban area comes from Middletown, Millwood Station, and the City of Winchester. There is a continued increase in dwelling units, population and business and industrial areas, as well as the remote area of Lake Frederick. A new fire station will bring Lake Frederick out of a remote travel distance, reduce response times from second due companies and reduce the call volume of the current Stephens City station.

This new station would be staffed and operated by Frederick County. There is potential for citizens in this response area to volunteer at the facility due to its location to residential neighborhoods. Currently, one fire engine and one transport ambulance would be necessary to serve this area.

Lake Holiday

The Summit at Lake Holiday falls into an urban and suburban area based on population density. Its entrance is greater than five miles from each of the current fire and rescue stations serving the area. This coupled with narrow roadways inside the neighborhood makes response times unmanageable. Development within the gated community continues to grow and will require increased services. This

station can serve surrounding rural areas and would shorten response times, while providing automatic aid to Gore and Reynolds Store stations.

The location of this station would be attractive to potential volunteers living in the vicinity. A fire engine and transport ambulance would be necessary for this station. Some Equipment and apparatus from Gainesboro could be relocated to this station.

Green Spring Road

Travel time to remote areas by winding roadways makes this area vulnerable to significant fire loss and decreases chances of survival from life threatening incidents. Increase in dwelling units and population continue to increase in this rural area as citizens continue to build large two-story homes in this area. A new County staffed and operated station in this area will provide a necessary increase in services to the region, decrease response and transport times, and likely provide a reduction in homeowner insurance premiums to area citizens.

While there are a few members from Clear Brook Volunteer Fire and Rescue residing in the vicinity, it is unlikely this location would attract many new volunteers to support the station. One transport ambulance and a combination engine/tanker would be needed in this area due to no available municipal water supply. The engine/tanker apparatus would allow additional water on the vehicle assisting with longer operations while assisting other companies. Possible equipment and apparatus from Clear Brook could be relocated to assist with operations.

Mountain Falls

The majority of Mountain Falls Park falls into a suburban classification due to population density. Fire incidents in this area do not typically have favorable outcomes. This is largely due to limited water supplies, response times from North Mountain and Star Tannery Fire and Rescue Companies – each travelling more than five-miles to the community entrance, and staffing limitations at North Mountain. Some areas of the community are considered remote response areas due to travel distances being more than eight miles. Currently, North Mountain is staffed by career members Monday through Friday from 6am to 4pm. This leaves the remaining hours solely on volunteer response.

Several members from North Mountain Volunteer Fire and Rescue live in the development and it is likely a new station would attract additional volunteers from the community due to its proximity to their homes. The call volume of the current stations would not be affected by movement of apparatus and response times to Mountain Falls Park would greatly improve, as well as other surrounding rural areas. Automatic aid to existing stations would also greatly improve. A transport ambulance and a Wildland Interface Pumper combination should be considered as necessary apparatus due to limited water supplies.

Route 7 / Morgan Mill Road

Greenwood Volunteer Fire and Rescue is tied with Stephens City Volunteer Fire and Rescue as the busiest station in the county. The two stations' call volume typically trade places monthly. The high density travel routes of Route 7, Route 50, and Interstate 81 surround its first due boundaries. More than 60% of the response area is urban and has the highest population density per square mile compared to all other stations. New and existing developments continue to spread across the

response are between Senseny Road and Route 7. Additional Developments north of Route 7 will continue to tax response efforts from the existing station.

A new station at the rear entrance of Millbrook High School, on Morgan Mill Road, would provide easy access to Route 7 and Interstate 81. This location would provide response coverage to rural areas north of Route 7 and assist Greenwood in their high call volume area. While this location is close to new residential developments, it is unlikely to attract many new volunteers to support the station due to its proximity to already established companies. Apparatus for this station should include a transport ambulance and one rescue engine to support the high number of motor vehicle accidents on the interstate and Route 7 corridor.

Apple Pie Ridge Road

A station in this area would provide the needed protection to an increasing population and large single-family homes. The close proximity to James Wood High School, Apple Pie Ridge Elementary School, and the Stonewall Industrial Park would assist in decreasing the response times to these high hazard locations. The increase in traffic along Route 37, North Frederick Pike, and Apple Pie Ridge Road along with the relatively high call volumes of Round Hill Community, Clear Brook, and Gainesboro fire stations would benefit from the added resources.

One transport ambulance, one engine, and a brush truck would be necessary to support services in this area. Additional volunteers from this area are unlikely, as no current volunteers live in the new protection area.

Route 37 / Cross Pointe

The Cross Pointe Master Development Plan intends to make connections from Route 37 to Warrior Drive, Front Royal Pike, and Papermill Road. This project identifies a maximum of 1-million square feet of commercial/retail space and a maximum of 1,578 additional dwelling units. Throughout this project, opportunities to access parcels for further development will continue to add an increasing number of incident responses to the already busy Stephens City Volunteer Fire and Rescue station.

A new facility in this area would allow for improved response times, reduce responses from second due companies, and reduce the call volume of the current Stephens City station. One transport ambulance and a quint/engine at the new facility would add to the capabilities provided by the existing Stephens City Volunteer Fire and Rescue station and proposed Tasker Road station.

Middle Road

Middle Road and Cedar Creek Grade traverse from the Winchester City limits to the southern portions of Frederick County. This rural area presents difficulties for fire and rescue services. This area has extremely long response times from Stephens City, Round Hill Community, and Middletown. Several secondary roads connect these travel ways with rural road conditions including gravel, dirt, and narrow, sharp turns.

The central point of the area is located at Gough Road and Cedar Creek Grade, in the middle of agricultural land and sporadic dwellings. Orchard View Elementary School, although not centrally located in this response area could provide a suitable location and increase services to Brookneil,

Stonebrook, and Jackson Woods subdivisions as well as rural areas south on Middle Road and Cedar Creek Grade. The rural area is unlikely to attract sufficient volunteer staffing to support the facility and a minimum of one transport ambulance, an engine/tanker, and a brush truck would be necessary.

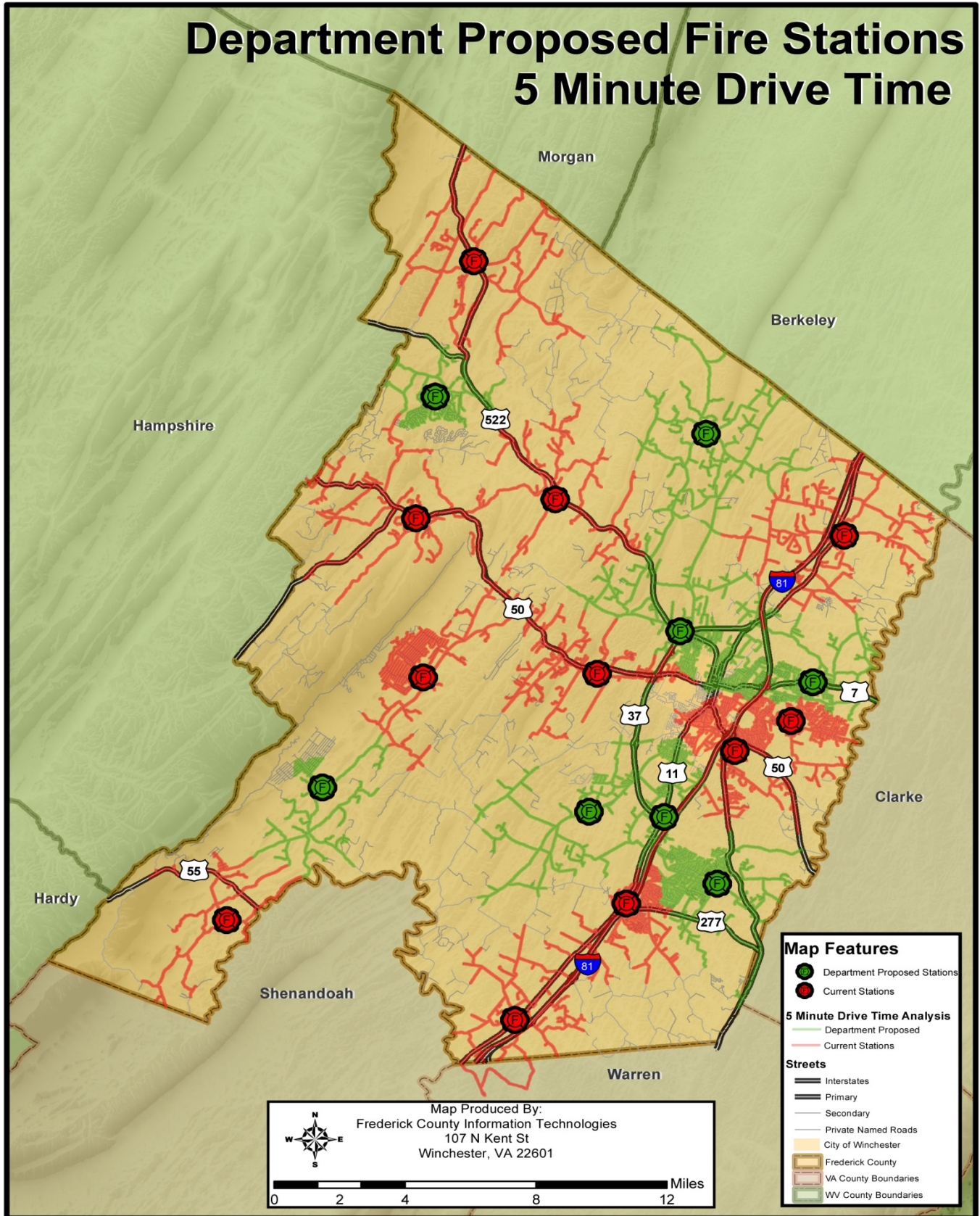
The location of each station was determined based on response area. Each of the proposed stations indicated on Figure 8 represents a 5-minute response time. They are positioned to fill gaps between existing stations, provide services where remote areas are identified and overlap so that a second due station can cover while the first due station is on an emergency. Factors to consider are the number of dwelling units, population, road conditions, and target hazards such as schools, nursing homes, daycares, and business types within the response area.

Impacts and Outcomes if adopted

By adopting the need for new station construction, fire suppression and EMS apparatus and equipment will continue to be strategically placed throughout the County for the prompt initiation of fire suppression and emergency medical service delivery around the clock, meeting nationally adopted response goals and staffing achievement standards as outlined in “Drivers of the Fire and Rescue Service”.

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Figure 8 – Proposed Fire and Rescue Station Locations



Station Renovations

There are various repairs and renovations needed in several of the volunteer-owned fire and rescue stations. Over the next five to ten years, efforts should be made to improve the life safety needs of the System's facilities.

Various projects are identified below, which will require studies to determine the scope of each project, the feasibility and cost projections. Some improvements could be included within the Capital Improvement Plan (CIP). However, there is an immediate need to increase the capabilities of the stations in order to continue to effectively house apparatus, equipment, and personnel in order to provide the County with reliable 24-hour coverage.

Station renovations could be financed through a combination of lease purchase bonds or revolving loan funds, as well as available state and federal grant programs.

Stephens City Fire and Rescue

Stephens City is in need of an outside ancillary building for storage. The current apparatus bays have been utilized for storage creating limited space for necessary apparatus. The additional storage buildings would be used for equipment and overflow.

Middletown Fire and Rescue

Renovations of the existing open space within the Middletown Fire and Rescue Station are needed for expansion of the living quarters, offices, and training rooms. This project will expand the capabilities of the fire station to house more staff 24/7, allowing for improved emergency response. Bunkrooms need to be expanded in order to continue to support the career and volunteer staff as these areas are starting to show wear and will not allow for increased staffing.

Clear Brook Fire and Rescue

The current Clear Brook Fire and Rescue Station was built in 1980 and has seen little upgrading or updating. Today, the station is no longer adequate to house the company's apparatus, equipment, and volunteer and career staff. The operating space is unsafe and cramped, and limits the services that can be provided to a growing community. The addition of new residential housing developments, commercial/retail development, and industrial developments require a facility that is capable of supporting these needed services.

It is proposed a new facility be built on the current property, and the existing building would be removed. The new building would include six apparatus bays, an administration office, eating and sleeping quarters for volunteer and career staff, as well as a banquet hall.

Gore Volunteer Fire and Rescue

Gore Volunteer Fire and Rescue currently has one small bunkroom, however it is not adequate for overnight staffing and is in poor shape. There is also no female bunkroom available at this time. The current facility allows for renovations to be made to convert existing areas into male and female bunkrooms, full bathrooms, and locker rooms.

The facility has several outdated and inefficient heating systems that are in need of upgrading to one central HVAC system. The day room, current bunkroom, and the area to be renovated for the new bunkrooms / living quarters have baseboard heat and no A/C system. The social hall is also without A/C. These extremely inefficient systems are very costly, especially during the winter months. A central HVAC system would allow the building to be better used for both the career and volunteer staff.

Gainesboro Fire and Rescue

Renovations of the existing open space within the Gainesboro Fire and Rescue Station are needed for expansion of the living quarters, offices, and training rooms. This project will expand the capabilities of the fire station to house more staff 24/7, allowing for improved emergency response. Bunkrooms need to be expanded in order to continue to support the career and volunteer staff as these areas are starting to show wear and will not allow for increased staffing.

Greenwood Volunteer Fire and Rescue

Renovations of the existing open space within the Greenwood Fire and Rescue Station are needed for expansion of the living quarters, offices, and training rooms. This project will expand the capabilities of the fire station to house more staff 24/7, allowing for improved emergency response. Bunkrooms need to be expanded in order to continue to support the career and volunteer staff.

In addition to the renovation of the bunkrooms, Greenwood is in need of a new apparatus exhaust removal system. Diesel exhaust in fire stations has been and continues to be a problem for many firefighters. A diesel-powered apparatus generates exhaust whenever it leaves or returns to a station. If not properly captured, this exhaust will enter not only the apparatus bay but also the firefighters' living quarters. As a result, firefighters can be exposed to diesel exhaust for a significant portion of their shifts. Exhaust from fire and emergency apparatus can be a firefighter's most significant health risk causing multiple types of cancer. The addition of a Diesel Exhaust Removal System will decrease members, both career and volunteer exposure to this hazardous byproduct in a safe and effective way, as outlined by National Institute for Occupational Safety and Health (NIOSH).

North Mountain Fire and Rescue

North Mountain Fire and Rescue currently is the only station within the Frederick County Fire and Rescue system without bunkroom facilities for its members and is seeking to add a 2,640 square foot addition to the current building. The station addition would include male and female sleeping quarters, male and female restrooms and showers, new day-room, new gear racks, and additional storage and office space.

The company has seen an increase in volunteer membership, and while this growth is certainly welcome, the current facility's available space has been exhausted. By improving the facility, North Mountain will be able to staff the station during the day and in the nighttime hours in more comfortable conditions thus enhancing their ability to respond to emergencies fully staffed and in less time.

10-Year Non-Station Needs Assessment

The ten-year non-station facility needs assessment includes expansion of “existing program” space to include training prop facility, SCBA maintenance, fleet maintenance, and training apparatus garaging.

Table 17 – 10-Year Estimated Non-Station Needs Assessment

PROJECT DESCRIPTION	NET SQUARE FOOT REQUIREME	ESTIMATED CONSTRUCTION COST
Regional Training Facility with Garage	20,000 – 25,000 SF	\$31,175,000 ²⁶
Fleet Maintenance Facility with SCBA expansion	10,000 – 15,000 SF	\$3,500,000 - 6,500,000

Regional Training Facility with Garage

Training is the foundation for all of the other processes of fire and rescue, which requires a reliable facility and current props to facilitate education and training for volunteer and career personnel. Several of the buildings are thirty (30) plus years old and have far exceeded their life expectancy. Replacement of the aging fire and rescue training facilities currently being used by Winchester, Frederick County, Shenandoah County, Warren County, and several businesses with fire brigades and emergency responders should also be considered. In cooperation with the Rappahannock Regional Criminal Justice Academy, Middletown Campus, construction of a Regional Public Safety Training Center potentially consisting of an administrative building, burn building, training tower, vehicle driving range, shooting range, and numerous other facilities and props outside of the City of Winchester would incorporate fire, rescue, law enforcement, industrial and educational institutions located in Clarke County, Frederick County, Shenandoah County, Warren County, Winchester, State Agencies, Federal Agencies, and potentially jurisdictions within the State of West Virginia.

This project will facilitate realistic training in today’s modern environment for emergency services and industrial personnel located throughout the Northern Shenandoah Valley and expanding into the State of West Virginia. This project will reinforce existing training programs in those respective agencies and jurisdictions as well as facilitate training that is currently not available within the Northern Shenandoah Valley, which causes students and instructors to travel into the Washington Metropolitan region. This project needs to plan for a facility and props that will have afford training opportunities for future types of events and incidents with a minimum of thirty (30) year life expectancy. The number of potential personnel trained at this Training Center is potentially in the thousands based upon training statistics provided in July 2007 by the participating agencies.

The Regional Public Safety Training Center project has been in the Capital Improvements Project since 2007 but with the economic downturn, it has not been acted upon. During the past two (2) years, local engineers have condemned the Winchester Burn Building and it is not approved by the Virginia Department of Fire Programs to be utilized for certification burns. Since this process has occurred, the Training Division has to travel to one of several different burn buildings either in Shenandoah County or in Northern Virginia. While this allows the students an excellent opportunity to burn in different facilities, it is extremely personnel dependent preparing the equipment and apparatus to travel to these facilities.

²⁶ The total cost of the Regional Training Facility is based on the 2015-2016 Capital Improvements Plan.

Impacts and Outcomes if adopted

By adopting the ten-year non-station facility needs standard, the combined fire and rescue system will have the resources available to continue training volunteer and career providers in state of the art facilities with cutting edge equipment, facilities, and training props.

In addition to meeting the training needs of the combined system, the addition of a Fleet Maintenance Facility with room for expansion will allow for a safe, central location for regular maintenance and in-house repair of apparatus and equipment.

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Vehicles and Apparatus

Primary response vehicle (Engines/Ladders/Squads/Tankers/Ambulances/Brush Trucks) location is based on several factors. The demand for service and time and distance to travel to the emergency as it relates to response goals represents the driving forces for determining the placement and deployment of primary response vehicles.

Volunteer companies traditionally equip each station with two or more Engines (pumpers), and two or more Ambulances. Ladder Trucks, Heavy Squads, Tankers, and Brush Trucks are placed in companies as a single apparatus unit when the company provides these services.

Frederick County is unique in that east side is a suburban, subdivision based area, included in the County Urban Development Plan. This side of the County has available hydrants for firefighting and the terrain is less mountainous than that of the western part of the County, making emergency responses easier to access. Due to the less developed, and more agricultural western Frederick County, stations and first responders in this area have more challenges to face during emergency responses.

The differences between the areas within Frederick County mean that the required apparatus needed at each station to operate effectively differs greatly. Table 18 outlines what apparatus is needed as first line for each of the eleven existing stations, as well as a what apparatus should be considered reserve to use during maintenance of front line apparatus and during training.

Table 18 – Front Line Apparatus Needs

Station	Standard Apparatus in Service	Standard Apparatus Needed	Specialty Apparatus In Service	Specialty Apparatus Needed	Reserve Apparatus In Service	Reserve Apparatus Needed
Stephens City	1-Pumper 2-Ambulance	1-Engine/Pumper 2-Ambulances	1-Ladder 1-Brush Truck 1-Tech. Rescue 3-Boats	1-Ladder 1-Brush Truck	None	1-Ambulance
Middletown	2-Ambulances	1-Engine/Pumper 2-Ambulances	1-Rescue Engine 1-Brush Truck 1-Tanker	1-Rescue Engine 1-Brush Truck 1-Tanker	None	
Clear Brook	2-Pumpers 2-Ambulances	1-Engine/Pumper 2-Ambulances	1-Brush Truck 1-Tanker	1-Brush Truck 1-Tanker	None	1-Rescue Engine
Gore	2-Pumpers 2-Ambulances	1-Engine/Pumper 2-Ambulances	2-Brush Trucks	1-Tankers 2-Brush Trucks	None	
Round Hill	1-Pumper 2-Ambulances	1-Engine/Pumper 2-Ambulances	1-Rescue Engine 1-Brush Truck	1-Rescue Engine 1-Brush Truck	None	
Gainesboro	2-Engines 2-Ambulances	1-Engine/Pumper 2-Ambulances	1-Ladder 2-Brush Trucks 1-Tanker 1-Boat	1-Ladder 2-Brush Trucks 1-Tanker 1-Boat	None	1-Ambulance
Star Tannery	2-Engines 2-Ambulances	1-Engine/Pumper 2-Ambulances	1-Brush Truck 1-Tanker	1-Brush Truck 1-Tanker	None	
Greenwood	1-Engine 2-Ambulances	1-Engine/Pumper 2-Ambulances	1-Ladder/Quint 1-Brush	1-Ladder/Quint 1-Brush	1-Ambulance	1-Ambulance
North Mountain	2-Engines 2-Ambulances	1-Engine/Pumper 2-Ambulances	2-Brush Trucks	2-Brush Trucks 1-Tanker	None	
Reynolds Store	1-Engine 2-Ambulances	1-Engine/Pumper 2-Ambulances	1-Rescue Engine 3-Brush Trucks 1-Tanker	1-Rescue Engine 3-Brush Trucks 1-Tanker	None	
Millwood Station	1-Engine 2-Ambulances	1-Engine/Pumper 2-Ambulances	1-Rescue Engine	1-Rescue Engine	None	1-Ladder

The fire and rescue system’s current fleet is starting to age and in some cases, fail. The list of out-of-service apparatus grows daily. In order to continue to provide safe and reliable emergency responses, the Service Plan recommends the County assist volunteer companies with the replacement of the following primary response vehicles as indicated in Table 19.

Table 19 - Apparatus Replacement Table

Apparatus Type	Location / Age
Engine / pumper	Stephens City / 23 Clear Brook / 14 Gore / 21 Gainesboro / 27 & 26 Star Tannery / 10 North Mountain / 20 & 14 Reynolds Store / 20
Ladder Truck	Stephens City / 28 Gainesboro / 32 Greenwood / 15
Heavy Squad	Round Hill / 19 Millwood / 17
Tanker	Gainesboro / 36 & 21 Star Tannery / 30
Brush Truck	Gore / 39 & 25 Gainesboro / 46 Greenwood / 31 North Mountain / 32 & 29 Reynolds Store / 37 & 23
Ambulance	Gore / 14 Gainesboro / 17 Reynolds Store / 15 Millwood / 13

Vehicle Replacement Standard

As the primary mission of fire and EMS vehicles is to deliver personnel and equipment to the customers, it is imperative these vehicles are maintained in a reliable working condition. There is no national standard governing the replacement of emergency vehicles. Volunteer fire and rescue companies in the County generally replace apparatus based on wear and tear, recurrent maintenance costs and active maintenance history, age of the apparatus, technology and safety changes, and available funding.

NFPA 1901, Annex D, recommends apparatus greater than 15 years of age be placed in a reserve status, if proper maintenance of the apparatus has been received, with the possibility of being refurbished in accordance with NFPA 1912.

This Service Plan recommends the following replacement standard for emergency response fire and rescue apparatus (Table 20). The driving force in making these determinations is the time period the emergency vehicle is in service, and the advancement in Fire/EMS apparatus safety elements that occurs over this time period. Additionally as the County continues to grow, requests for service will continue to increase, adversely influencing the wear and tear factor on these vehicles.

Table 20 – Vehicle Replacement Standard (Years of Service)

Apparatus Type	Front Line Service ²⁷	Reserve Service
Engine / Pumper	12	3
Ladder Truck	15	5
Heavy Squad	12	5
Tanker	15	5
Brush Truck	15	15
Ambulance	7	3

Table 21 – Vehicle Replacement Standard Comparison

Locality	Engine	Ladder	Tanker	Heavy Squad	Ambulance
Henrico County, Virginia	Front Line: 12 Reserve: 3	Front Line: 15 Reserve: 5	20 years total	Front Line: 12 Reserve: 3	Front Line: 7 Reserve: 1
Chesterfield County, Virginia	Front Line: 20 Reserve: 5	Front Line: 20 Reserve: 5	Front Line: 20 Reserve: 5	Front Line: 20 Reserve: 5	Front Line: 7 Reserve: 5
Spotsylvania County, Virginia	Front Line: 12-18 or 170,000 miles	Front Line: 12-18 or 170,000 miles	Front Line: 12-18 or 170,000 miles	N/A	Front Line: 8-10 or 200,000 miles
Loudoun County, Virginia	Front Line: 10 Reserve: 5	Front Line: 12 Reserve: 5	Front Line: 15 Reserve: 5	Front Line: 12 Reserve: 5	Front Line: 4 Reserve: 3

Impacts and Outcomes if adopted

By adopting the vehicle replacement standard, emergency response apparatus and vehicles will be replaced utilizing a defined plan. By adopting a plan, the companies and the County will avoid the potential accumulation of an unreliable emergency vehicle fleet.

²⁷ Vehicle age is the initial trigger for considering replacement. However, items such as wear and tear, increasing maintenance costs, safety discrepancies, unit activity level, and response area travel and road conditions may be cause for earlier replacement of a unit than that outlined in Table 21.

Fire and Rescue Needs Assessment

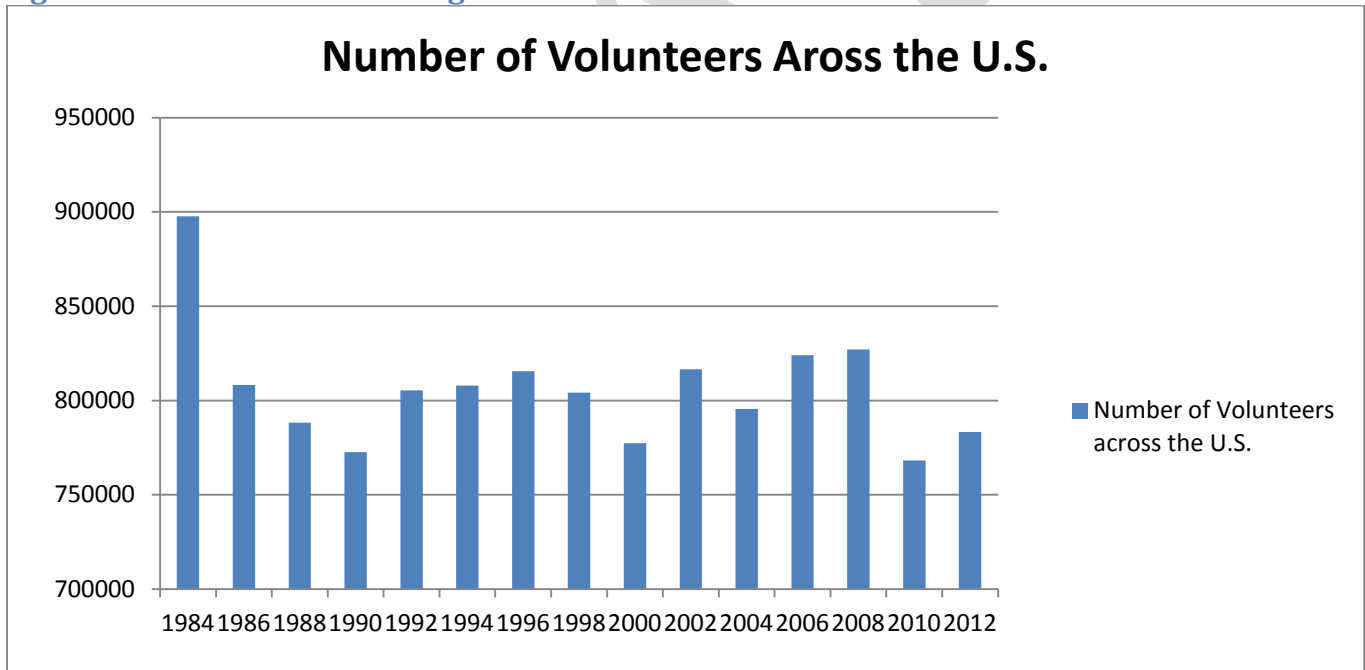
Recruitment & Retention

According to the National Volunteer Fire Council (NVFC), volunteers make up 69% of the firefighters in the United States. Of the estimated 1,129,250 firefighters across the country, 783,300 are volunteers. Furthermore, the majority of fire departments in the United States are volunteer. Of the total 30,100 fire departments in the country, 20,050 are all volunteer; 5,445 are mostly volunteer; 1,995 are mostly career, and 2,610 are all career²⁸. Although these numbers are quite impressive, statistics indicate that since 1984 there has been a 13% decrease in the number of volunteer firefighters across the nation (Figure 9).

Several factors contribute to the decline, including:

- Increased time demands to be a firefighter due to increased training requirements, increased call volumes, and a wider variety of services expected of fire departments;
- Less time available for individuals to volunteer due to the need for two-income families, longer commuting distances and family obligations;
- Change in attitudes among public, loss of community pride, and employers less willing to allow employees off to run calls²⁹

Figure 9 – U.S. Volunteer Firefighter Statistics



Since 2007³⁰ the Frederick County Volunteer Fire and Rescue System has remained relatively stagnant in the recruitment of new volunteer members. There was a slight increase in membership in 2010 and

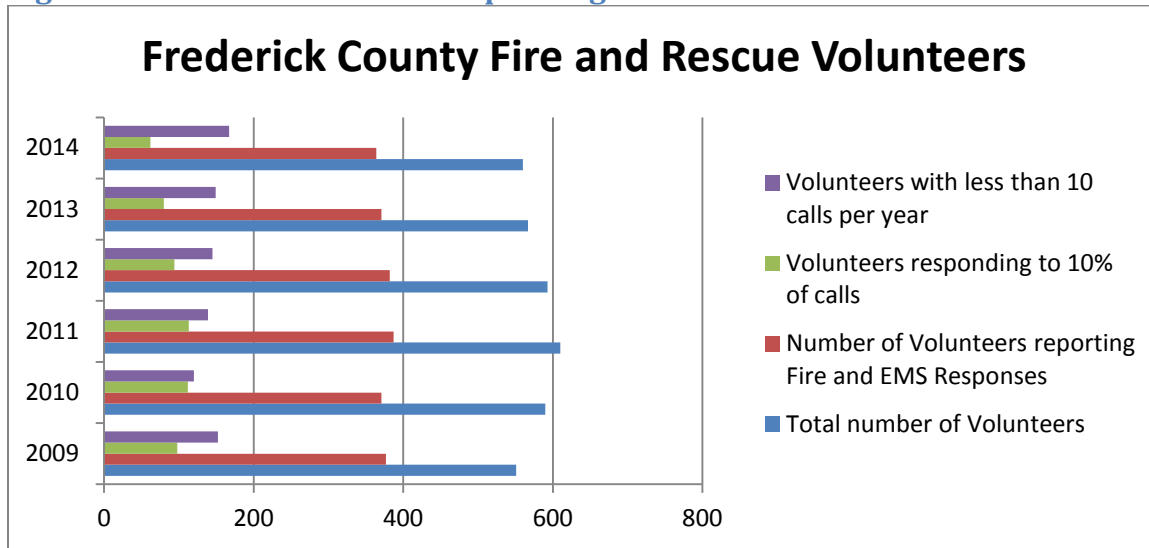
²⁸ Information obtained from NFPA, US Fire Department Profile through 2012.

²⁹ NVFC, Retention and Recruitment in the Volunteer Emergency Services: Challenges and Solutions

³⁰ In 2007, Frederick County started to obtain more reliable information regarding the system's volunteer members.

2011; however, a decline in membership has been noted in recent years. With the increase in population expected to continue, the number of volunteers per 1,000 County residents will also start to decline. This trend will have a substantial impact upon the combination system. As the number of volunteers per capita decreases, the number of career members needs to increase.

Figure 10 - Total Volunteers Responding vs. Total Volunteers



As indicated in Figure 10, the number of available volunteers to respond to calls for service declines each year. In 2009, the combined system responded to 9,101 calls for service, with 150 volunteer members responding to 5% or more of their first due area’s request for service. In 2014, with an increase in calls by 10% (10,017 incidents), 110 volunteer members responded to 5% or more of their station’s incidents, representing a 26% decrease in volunteer responses. Nearly half of all operational volunteer members responded to less than 10 calls in 2014.

To enhance and develop the volunteer system, the Frederick County Fire and Rescue system implemented a variety of programs including a Length of Service program (LSOP) for volunteers, seminars and recruitment videos, posters, brochures, the implementation of the personal property tax reduction program, and several Local Hero discount benefits. Each was done in an effort to enhance recruitment and retention efforts. Annual recruitment efforts, although beneficial, have not increased the number of volunteers. Now the system is finding that for every one member recruited, an almost equal number are leaving the system. As the number of new members continues to decline, the total number of volunteers leaving the system will exceed the total number of new volunteers recruited into the system.

Impacts and Outcomes if adopted

This adopted service level would allow the Department to expand recruitment. In an effort to recruit and retain both volunteer and career members of the combination system, it is imperative to expand the original scope of work of the Volunteer Coordinator to include the career aspect of the system. Through expansion, the Department will be better served and will have a larger area to recruit both volunteers and career members into the Department.

Planning and Administration

EMS Coordination and Support

EMS supervisory personnel are critical components of the EMS system, as they not only provide patient-care oversight, but also serve as day-to-day liaisons with hospital staff and the Operational Medical Director (OMD), system administrative and operational officers, and integrate into the Incident Management System on incidents involving multiple medical patients, technical rescue components, and as needed on other emergency incidents. Additionally, the EMS Supervisor will ensure a day-to-day quality assurance/quality improvement program can be implemented.

EMS Coordination and Support Drivers

- Patient care protocol compliance: the need for EMS-trained personnel to operate and perform according to established protocols for patient care is a critical element for positive system delivery. Compliance with established patient care protocols is intuitively related to the quality of the care delivered in the EMS system. The quality of care then relates to the overall quality of the system.
- Ensuring positive patient outcome: the resultant patient status following pre-hospital treatment and/or care relative to the patient's signs and symptoms are measured by the effects of the EMS system encounter. Patient outcome (patient status) can be a byproduct of the overall quality and effectiveness of an EMS system, and therefore should be measured as an indicator of quality within the system.
- Quality Improvement/Quality Assurance: the need to operate a complete quality program that includes total quality management, continuous quality improvement, and quality assessment. The program includes direct field observation by a designated medical quality officer. The observer should be of equal or higher level of training. An established "quality" program is an indicator of the system's attention to quality. An established program indicates the Department's effort toward establishing and maintaining quality within the EMS system.

The EMS Supervisor will be responsible for the day-to-day supervision and support of EMS operations in the County. The position is intended to be a supportive one in that the EMS Supervisor should endeavor to monitor and mentor the active EMS providers as well as provide guidance and structure to on-going EMS operations countywide. While a member of the command rank, the EMS Supervisor will not be disposed to assuming command unless that action is required to stabilize an evolving incident. The EMS Supervisor is more appropriately oriented to assuming specific roles inside the Incident Command System (ICS) such as Medical Branch (Patient Care), Medical Control, Triage, Treatment, Transport, Rehabilitation, etc., while working with the Incident Commander to ensure a seamless ICS is maintained resulting in multiple outcomes.

The EMS Supervisor will be an on-duty point of contact for numerous groups whose operations closely interact with EMS, including local hospitals, regional ALS coordinators, Staff Duty Officer, Communications, other command rank officers, and the OMD.

The EMS Supervisor will assist/promote appropriate training in the fire and rescue stations to address deficiencies in the system. The EMS Supervisor will be a component of the Operational Medical

Directors' quality assurance system, and should provide direct observation data to the OMD and the operations chiefs.

The Service Plan recommends the implementation of the EMS Supervisor position through day staffing (8:00 am – 4:00 pm) with the potential to increase this position to one per shift.

Impacts and Outcomes if adopted

This adopted service level would allow the Department to implement a day-to-day EMS supervisory component into the combined system. EMS incidents account for 73% of the total emergency responses for the system. This supervisory component would act as the initial contact regarding EMS operational system issues, as well as provide leadership and supervision to new system EMS providers, assist duty crews with equipment and supply issues, liaison with the Department's Senior Staff and the OMD, and provide direction and control regarding patient care on emergency incidents to ensure a successful pre-hospital patient outcome.

1 – EMS Supervisor (New FTE)

Health and Safety

Safety is paramount to employee wellbeing and mitigation of liability for the County. Currently, the Department does not have a position to oversee the health and safety of our operational personnel.

The Health and Safety Officer would primarily be responsible for responding to any incident in which he/she is requested or deems appropriate for a safety officer to be present. This Health and Safety Officer would also be responsible for the following functions: Occupational Medical Program, Worker's Compensation Program, Respiratory Protection (Fit-Testing) Program, Vehicle Accidents and Personal Injury Investigation, Safety and Health Training, Risk Management Program, Facility Safety Program and Infection Control Program.

- Occupational Medical Program - 29 CFR (Code of Federal Regulations) 1910.134 OSHA (Occupational Safety and Health Administration) Respiratory Protection mandates any employee that is required to wear a respirator have a yearly medical evaluation. Furthermore, National Fire Protection Association (NFPA) 1500, Fire Department Occupational Safety and Health Program, establishes medical and physical requirements for candidates and members of the system as defined in NFPA 1582, Comprehensive Occupational Medical Programs for Fire Departments. This Health and Safety Officer is responsible for the administration of the program as well as the scheduling of pre-placement, annual and periodic physicals for all candidates and members. This position works closely with the fire department physician in cases of fitness and return to duty.
- Incident Scene Safety – The Health and Safety Officer is an integral part of the Incident Commander's Command Staff. This position is responsible for overall scene safety as well other areas as defined in NFPA 1521, Standard for Fire Department Safety Officer. In addition, CFR 1910.120, Hazardous Waste Operations and Emergency Response, (q)(2)(vii) states "The individual in charge of the ICS shall designate a safety officer, who is knowledgeable in the operations being implemented at the emergency response site, with responsibility to identify

and evaluate hazards and to provide direction with respect to the safety of operations for the emergency at hand.”

- Worker’s Compensation Program – This Health and Safety Officer is responsible for the reporting of all personal injuries in the system in accord with Title 65.2 of the Code of Virginia. Moreover, this position looks at trends and frequency and develops training programs to reduce such trends.
- Fit-Testing Program – CFR 1910.134, Respiratory Protection (f)(2), states “The employer shall ensure that an employee using a tight-fitting face piece respirator is fit tested prior to initial use of the respirator, whenever a different respirator face piece (size, style, model, or make) is used, and at least annually thereafter.”
- Vehicle Accidents and Personal Injury Investigation, Safety and Health Training, Risk Management Program, Facility Safety Program and Infection Control Program – These programs fall under the purview of two (2) NFPA standards, NFPA 1500, Fire Department Occupational Safety and Health Program and specifically NFPA 1521, Fire Department Safety Officer. This position is responsible for administering and managing these programs.

Figure 11 – Health and Safety Responsibilities



The Service Plan recommends the implementation of the Health and Safety Officer position through day staffing (8:00 am – 4:00 pm) with the potential to increase this position to one per shift.

Impacts and Outcomes if adopted

This adopted service level would allow the Department to implement a day-to-day Health and Safety component into the combined system. Focusing on Firefighter and EMS Provider health, safety, and wellness is critical to the success of any fire department. This supervisory component would act as the

initial contact regarding employee injuries, accidents, occupational health, and scene safety. It would also provide leadership and supervision to new system firefighters and EMS providers, assist duty crews with equipment and supply safety issues, and act as a liaison with the Department's Senior Staff and the County's Risk Manager.

1 – Health and Safety Officer (New FTE)

Resource Management

Within the Operations Division is the Department's Resource Management Services. The mission is to provide service to the members of Frederick County Fire and Rescue, the Volunteer Fire and Rescue Association, and Frederick County. Resource Management Services receives and distributes a variety of property and equipment used by the Department in the delivery of routine and emergency fire and EMS services. Services also provided include:

- Uniform Issue
- Personal Protective Equipment (PPE) Issue
- Equipment and Supply Issue
- Radio Maintenance Support
- Breathing Apparatus Services (Fit testing, maintenance and repair of Self-Containing Breathing Apparatus)
- Warehouse Storage
- Receiving / Distribution

The Resource Management Services purchases and issues all personal protective equipment, and insures the proper fit for all Department members. This includes providing the care, maintenance, cleaning and testing of 200 sets of personal protective turnout gear. This section regularly conducts field evaluations of new equipment and gives input to NFPA guidelines on firefighter turnout gear, and stays abreast of all Federal, State, OSHA and NFPA standards as they apply to personnel protective equipment and clothing. This section also maintains required databases on protective equipment to ensure required standards are met.

Currently, one member supports the Department's Resource Management Services and is responsible for the above items and the planning and projection of the Department's future needs. In addition to this position there is one part-time member supporting the Self Contained Breathing Apparatus (SCBA) Services. The SCBA Program is responsible for the maintenance and testing of approximately 350 self-contained breathing apparatus in Frederick County. These devices enable firefighters to breathe and work in smoke filled and hazardous environments.

When the Resource Manager position was created in 1998, it was considered a part-time position, and was managed by the Fire Marshal's Secretary. At that time, the position was accountable for 22 uniformed personnel and 2 office staff. Now, sixteen years later, we have 80 uniformed personnel, seven (7) administrative staff positions, and almost 200 sets of PPE in service. This is a significant increase in personal protective equipment, uniforms, and personnel alone. The Resource Management position was responsible for ordering office supplies, basic uniform items and handling of Personal

Protective Equipment. As time went on, more duties were added such as ordering all items relating to a newly hired employee, books for the Training Division, and a broader range of equipment.

In 2007, the position of Resource Manager was officially made a full-time position. Again, more responsibilities were added, to include EMS supply and equipment orders, supply orders for the eleven Fire and Rescue Stations, and department vehicles and apparatus. The Resource Manager also handled several of the items purchased for the new Public Safety Building, also in 2007.

As the Department continues to change and grow, and as standards are updated, the Resource Management Services will have difficulty managing these changes with its current staffing levels. The Resource Management Technician would support the growing Department and would assist with improved inventory, distribution, and tracking of fire and EMS equipment and supplies.

Impacts and Outcomes if adopted

This adopted service level would allow the Department to expand its Resource Management Services to the career and volunteer members of the Frederick County Fire and Rescue combination system. Expansion of these services would allow for improved record keeping and inventory, increased evaluations of equipment and personal protective equipment, which assists with the safety and wellbeing of the Department's members.

1 – Resource Management Technician (New FTE)

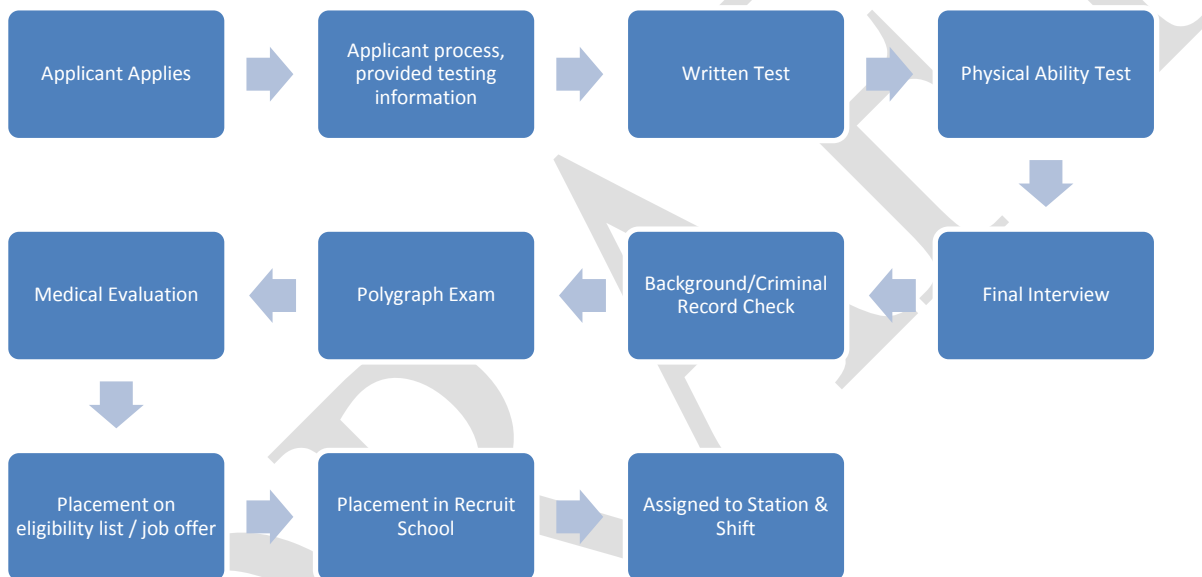
Hiring

Applications for the position of firefighter average 50 per process. Candidate attrition throughout the comprehensive multi-faceted hiring process employed typically requires the Department to conduct two (2) hiring processes per year. Figure 12 illustrates the process in which every candidate must go through in order to be considered for employment. This practice is the foundation for the Department to hire qualified applicants.

Currently our hiring process requires applicants to meet the following qualifications:

- Virginia Department of Fire Programs or Pro-Board certified Firefighter I
- Virginia or National Registry EMT (ALS preferred)

Figure 12 – Firefighter Application Process



Challenges

Based on our current hiring practices, we are faced with several challenges when it comes to hiring qualified and quality employees. We currently have no full-recruit training program, therefore we are faced with hiring only individuals with existing certifications and experience. Due to the increased competition with the Northern Virginia jurisdictions who offer full-recruit training programs, we are finding it extremely difficult to compete.

With each hiring process, we receive approximately 50 applications. Unfortunately, this number decreases quickly due to testing and certification requirements. At the time of the interview section of the process, we typically are left with less than 25% of the original applicants who have met the required criteria to meet employment. After completing the interview, background checks and polygraph exam, we are left with approximately 20% of the original applicants.

Promotions

The position of Technician and Specialist are obtained through the Career Development Program, which outlines requirements for promotion. An employee is eligible for the next rank on their anniversary date, pending all requirements are met.

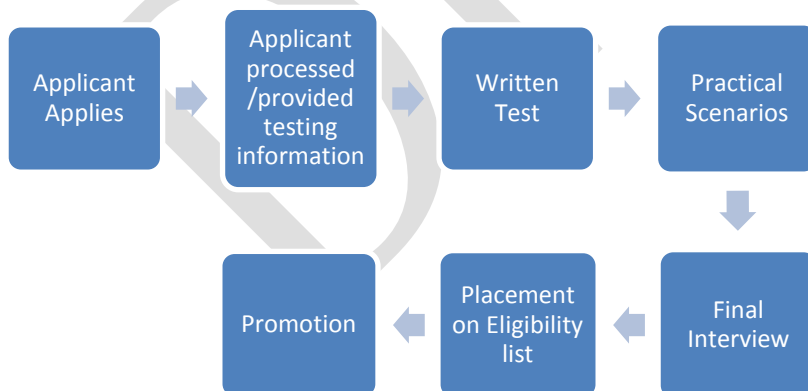
- Probationary Firefighter – First year of employment.
- Firefighter – An employee is eligible for the rank of Firefighter after completing the probationary period of one year.
- Technician – An employee is eligible for the rank of Technician after two years of employment and obtaining the requirements outlined in the Department’s Career Development Program.
- Specialist - An employee is eligible for the rank of Specialist after two years at the rank of Technician and obtaining the requirements outlined in the Department’s Career Development Program.

Currently, within our Department, promotional processes run annually. The rank of Lieutenant and Captain are achieved after completing a testing process and available positions within the Department. Promotional processes are laid out in the following order:

- Lieutenant – An employee is eligible for the rank of Lieutenant after two years at the rank of Specialist and obtaining the requirements outlined in the Department’s Career Development Program.
- Captain – An employee is eligible for the rank of Specialist after two years at the rank of Lieutenant and obtaining the requirements outlined in the Department’s Career Development Program.

Each promotional process is unique to the position it will fill and every promotional process requires a special set of standards to be applied to ensure the most qualified applicant is promoted. Figure 13 illustrates a typical promotional process.

Figure 13 – Promotional Process



Administrative Support

The Fire and Rescue Department is committed to providing organizational infrastructure necessary to maintain effective delivery of emergency services, to include administrative support and procurement. Program duties include timely and fiscally responsible procurement of goods and services, effective assignment of administrative support personnel, assurance of departmental information/records management and automation. The importance of sound administrative support services is paramount to the success of field emergency operations.

The recommended structure as published in ICMA's text entitled Managing Fire and Rescue Services suggests that dedicated administrative assistants be assigned to each Departmental Division, as well as to the Department's Chief. Currently, the Deputy Chief of Training is without dedicated administrative support. Implementing such a "best practices" approach would necessitate the hiring of one (1) additional administrative support staff member, while maintaining one (1) part-time receptionist.

Impacts and Outcomes if adopted

This service level if adopted will provide an expanded scope and improved timeliness and sophistication of all services, to include departmental strategic and service community analysis, enhanced recruitment, retention, and safety/wellness of personnel, and program-wide leadership. Current secretarial positions would be adjusted to reflect their current level of services at the Administrative Assistant positions. This would allow for upward movement within the Department. Additionally, increased support will be provided to the Training Division, which will allow for better support to the system as a whole.

- 1 – Training Division Administrative Assistant (New FTE)
- 1 – Operations Division Administrative Assistant (Promotion)
- 1 – Life Safety Administrative Assistant (Promotion)

Fire and Rescue Training

In support of Frederick County's combination system, the Training Division serves the dynamic nature of the organizational structure of the Department and the Volunteer Fire and Rescue community through continuous training activities.

Training Division Drivers

- Anticipated growth in career staffing
- New volunteer members
- "Turnover" of career and volunteer personnel
- Service delivery environment changes
- Advances in Fire and Rescue disciplines
- Student interests and participation levels in training
- New mandated requirements
- Ancillary duties in support of training delivery

Training Standards

Currently, there are no commonly adopted standards for minimum training qualifications within the Frederick County Fire and Rescue combination system. This leads to different levels of training for fire and EMS providers and officers within the entire combination system. Having different standards for members within the same system will cause a rift between the career and volunteer members. This conflict will work against the teamwork necessary to perform fire and EMS duties in a safe and effective manner. If volunteer and career personnel are required to meet the same standards, they will have a mutual respect and trust in each other's abilities.

Minimum Requirements for EMT Providers

- In order to provide emergency medical services in the Commonwealth of Virginia, individuals must be certified through the Virginia Office of Emergency Medical Services. Certification requirements include a minimum of 144 hours of classroom and skills instruction and 10 hours of clinical rotations. Virginia certification also requires successful completion of a standardized written and psychomotor examination. EMTs shall also possess certification in Hazardous Materials Awareness, Incident Command Systems 100, 200, 700, and 800. In addition to these requirements, in order to operate emergency apparatus, Emergency Vehicle Operator's Course for Vehicle Classes I and II must be completed.
- Enhanced (Advanced EMT) Providers
Enhanced providers must meet the requirements outlined in the EMT Providers, and shall also obtain an additional 80 hours of classroom instruction and 48 hours of clinical rotations in Pre-Hospital Patient Care.
- Intermediate Providers
The Intermediate program is designed to educate the technician in the following areas of pre-hospital care: preparatory skills, airway management and ventilation, patient assessment, trauma, medical, special considerations, and assessment based management. To obtain this level of certification, the Intermediate candidate must obtain a minimum of 272 hours of classroom instruction and 48 hours of clinical rotations.

In Virginia, all initial Intermediate programs are required to satisfy the testing guidelines established by the National Registry of Emergency Medical Technicians. Upon successful course completion of the course and National Registry EMT – Intermediate 99 written and psychomotor examinations, successful certification at the NREMT – Intermediate 99 level will automatically lead to a Virginia Intermediate certification. NREMT – Intermediate 99 certified technicians trained outside of the Commonwealth of Virginia must apply for Virginia reciprocity (certification) before being allowed to practice at this level. After receiving Virginia credentials, the Intermediate has the option to maintain National Registry Intermediate certification without affecting their Virginia certification; however, Virginia certification must be maintained in order to provide patient care at this level.

- Paramedic Providers

The Paramedic program expands on the skills and subjects contained in the Enhanced and Intermediate courses with a minimum of 781 hours of instruction. Of these hours, a minimum of 136 hours is devoted to extensive clinical rotations in specialty critical care units. Additional hours may be required to complete all the required competencies. Clinical rotations of this type are not usually available for lower level providers to attend. These additional clinical rotations include time spent in OR/Recovery Units, Critical Care Units, Labor and Delivery Units, Pediatrics, Emergency Department, Family Practice, Mental Health Clinics, Dialysis Clinics, Neurovascular Rehabilitation Clinics, Detoxification Units, and Extended Care Facilities.

The Paramedic program is designed to educate the technician in all areas of pre-hospital patient care. These areas include instruction in pre-hospital environments, preparatory skills, airway management and ventilation, patient assessment, trauma care, medical patient management, obstetrical/gynecological conditions, pediatric patients, neonatal care, psychiatric and behavioral emergencies, special considerations, and assessment based management.

For Virginia trained Paramedics, successful certification at the NREMT – Paramedic (NRP) level will automatically lead to a Virginia Paramedic certification. National Registry NRP certified technicians trained outside of Virginia must apply for Virginia certification before being allowed to practice at this level. After receiving Virginia credentials, the Paramedic has the option to maintain National Registry Paramedic certification without affecting their Virginia certification; however, Virginia certification must be maintained in order to provide patient care at this level.

Minimum Requirements for Firefighters

- Firefighter I – Shall consist of a minimum of 69 hours of classroom instruction, 75 hours of practical evolutions, as set forth by NFPA 1001-13, “Standards for Fire Fighter Professional Qualifications,” and the National Board on Fire Service Professional Qualifications. The Firefighter I must possess a valid Healthcare Provider CPR certification, Hazardous Materials Operations, and certification in Incident Command Systems 100, 200, 700, and 800. In addition to these requirements, in order to operate emergency apparatus, Emergency Vehicle Operator’s Course for Vehicle Classes I and II must be completed.
- Firefighter II – Shall meet the requirements of Firefighter I and continue training, consisting of a minimum of 21 hours of classroom instruction and 23 hours of practical evaluation, as set forth by NFPA 1001-13, “Standards for Fire Fighter Professional Qualifications.”

Minimum Requirements for Volunteer Officers

The minimum requirements outlined below were developed in conjunction with the eleven volunteer companies. Requirements for EMS Officers and Fire Officers differ slightly. EMS Officers are not required to have training that carries a fire service prerequisite, such as Firefighter II. EMS Officers that do not meet the requirements of a Fire Officer would not be involved in the fire aspect of the combination system, as is the case with Fire Officers who do not meet the requirements of an EMS Officer.

- **Safety Officer:** The Safety Officer must have a working knowledge of the incident command system and understand the role of the Safety Officer within it. The Safety Officer must possess the knowledge, skills, and experience to be able to identify unsafe operations and must have solid knowledge of building construction in order to understand fire behavior and the reactions of a building when exposed to fire. The Safety Officer must be able to anticipate fire and building behavior and must possess the experience and leadership skills necessary to modify or suspend unsafe operations.
 - Requirements: Firefighter Level II, NIMS 100, 200, 700, 800, National Fire Academy Incident Safety Officer, FCFRD Building Construction and Fire Behavior Review Course or NFA Principles of Building Construction, 5 Years of Service within FCFRD system or other locality.

- **Fire Sergeant:** Sergeants are the entry-level officers first in a company's chain of command. Fire Sergeants should have a working knowledge of fire ground operations and building construction along with 2 years of service time at the Firefighter II level to gain experience to support the system. They are often the first-line Officers who are asked to resolve issues before moving to mid-level Officer. These officers will need the knowledge and skills to address the issue or take it to a higher-level officer.
 - Requirements: Firefighter II, NIMS 100, 200, 700, 800, National Fire Academy Leadership I, National Fire Academy Preparation for Initial Company Operations (PICO), FCFRD Building Construction and Fire Behavior Review Course or National Fire Academy Principles of Building Construction, Cleared Operator for all Company Apparatus, 2 Years of Service within FCFRD system or other locality. It is recommended to also have Virginia Crew Leader.

- **Fire Lieutenant:** Lieutenants are one of the mid-level supervisors in the fire service. They must possess the skills to steer the direction of their subordinates to help them reach their full potential and must be able to mitigate personnel issues professionally and effectively. Lieutenants are often responsible for operational and administrative duties and effectively operate in both roles. Lieutenants often operate as the officer in charge of a single resource unit or an operational crew and are required to make decisions that will influence how an incident unfolds.
 - Requirements: Fire Sergeant Requirements, National Fire Academy Leadership II, National Fire Academy Decision Making For Initial, Company Operations (DMICO), National Fire Academy Fire Service Supervision, minimum of EMT-B, 2 Years of Service within FCFRD system or other locality. It is recommended to also have Fire Instructor I and Fire Officer I

- **Fire Captain:** Captains are at the top of the mid-level management ladder. They must be able to delegate assignments to subordinates and ensure that those assignments are completed (both operational and administrative). The Captains often assist Chief Officers with development of strategic goals and objectives for the Company and may be asked to communicate information to company members via memorandums and general orders. Captains are often responsible for leading or assisting with company drills and training development. The Fire Captain should have

solid knowledge of the Company and FCFR operational SOP's. Captains coordinate and execute work assignments delegated by Chief Officers (both operational and administrative). Fire Captains may be required to act as the Incident Commander and direct overall incident operations in the absence of a Chief Officer and must have a solid working knowledge of the incident command system.

- Requirements: Fire Lieutenant Requirements, National Fire Academy Leadership III, Instructor I, Officer I, National Fire Academy Incident Safety Officer, National Fire Academy Strategy and Tactics for Initial Company Operations (STICO), 3 Years of Service within FCFRD system or other locality. It is recommended to also have Instructor II, Officer II, and ICS 300.
- **Rescue Sergeant:** Sergeants are the entry-level officers first in a company's chain of command. Rescue Sergeants should have a working knowledge of EMS operations along with 2 years of service time as an EMT to gain experience to support the system. They must be a cleared AIC in order to act effectively as an independent patient care provider. They are often the first-line Officers who are asked to resolve issues before moving to mid-level Officer. These officers will need the knowledge and skills to address the issue or take it to a higher-level officer.
 - Requirements: EMT-B or higher certification, NIMS 100, 200, 700, 800, National Fire Academy Leadership I, Cleared Attendant in Charge, Operator for all Company EMS Apparatus, 2 Years as EMT-B within FCFRD system or other locality.
- **Rescue Lieutenant:** Lieutenants are one of the mid-level supervisors in the fire service. They must possess the skills to steer the direction of their subordinates to help them reach their full potential and must be able to mitigate personnel issues professionally and effectively. Rescue Lieutenants are often responsible for operational and administrative duties and must effectively operate in both roles. Rescue Lieutenants may be responsible for the in-house field precepting of new EMT's. Rescue Lieutenants often work closely with the Rescue Captain to address EMS specific training needs and operational plans. Rescue Lieutenants often operate as the officer in charge of a single resource unit or an operational EMS crew and are required to make decisions that will influence how an EMS incident unfolds.
 - Requirements: Rescue Sergeant Requirements, National Fire Academy Leadership II, National Fire Academy Fire Service Supervision, 2 Years of Service within FCFRD or other locality. It is recommended to also have National Fire Academy EMS Operations within the Incident Command System, Instructor I and Officer II.
- **Rescue Captain:** Rescue Captains often assist Chief Officers with development of EMS specific strategic goals and objectives for the Company and may be asked to communicate information to company members via memorandums and general orders. Rescue Captains are often responsible for leading or assisting with EMS company drills and EMS training development. The Rescue Captain should have solid knowledge of the Company and FCFR operational SOP's. Captains coordinate and execute work assignments delegated by Chief Officers (both operational and administrative). Rescue Captains are often responsible for being the company liaison with VAOEMS and may be responsible for EMS fleet readiness and inspections or even the entire EMS operation at the Company level. Rescue Captains must have the ability to adapt

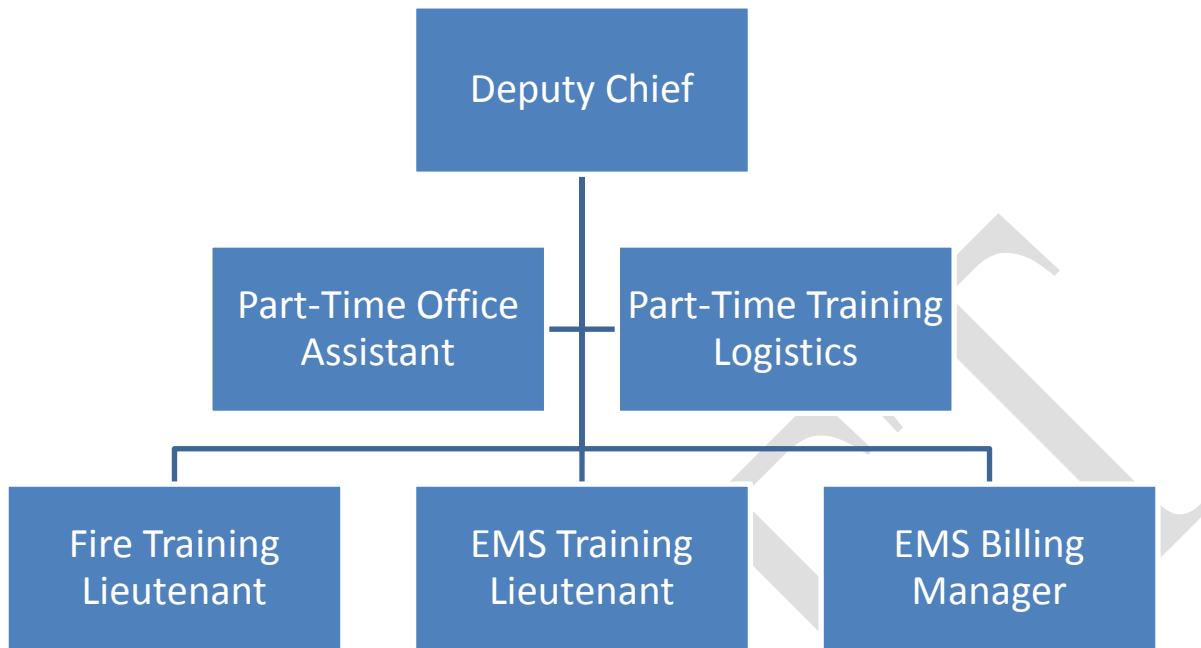
to a changing incident scene, change tactics if needed, and communicate suggestions and changes to the operational plan.

- Requirements: Rescue Lieutenant Requirements, National Fire Academy Leadership III, National Fire Academy Health and Safety Officer, 3 Years of Service within FCFRD or other locality. It is recommended to also have National Fire Academy EMS Operations within the Incident Command System, Instructor I, Officer I.
- Volunteer Chief Officers: Chief Officers are at the top of the management ladder. These officers must have a grasp of the roles and responsibilities of the officers below them so that they can effectively lead and delegate assignments when necessary. Chief Officers must be able to teach junior officers and subordinates within their company so that they can function as part of the team. Chiefs must have sufficient experience and training in order to fill the role of the Incident Commander and must possess strong decision-making skills to be applied both on the scene and within their station as they apply to incident and personnel management. Chief Officers must possess the appropriate leadership skills to develop junior officers and other personnel and prepare them for future advancement.
 - Deputy Fire Chief Requirements: Fire Captain Requirements, Instructor II, Officer II, NIMS IS-240 Leadership and Influence, 4 Years of Service as an Officer within the FCFRD system or other locality. It is recommended to also have ICS 300 and 400.
 - Assistant Fire Chief Requirements: Deputy Chief Requirements, NIMS ICS 300, National Fire Academy Awareness of Command and Control At Multiple Alarm Incidents, NIMS IS-241 Decision Making and Problem Solving, 4 Years of Service as an Officer within the FCFRD system or other locality. It is recommended to also have Officer III and ICS 400.
 - Fire Chief Requirements: Assistant Chief Requirements, Officer III, NIMS ICS 400, Years of Service as an Officer within the FCFRD system or other locality. It is recommended to also have Officer III and National Fire Academy Politics and the White Helmet.

Impacts and Outcomes if adopted

Creating a minimum training standard for volunteer officers will allow both volunteer and career officers within the combination system to be equal. Having a minimum standard for all system officers, will improve communication and teamwork efforts and assist in a common goal of saving life and property.

Figure 14 – Current Staffing Level: Training Division



As the Department continues to grow, the needs for additional career staffing and projected volunteer membership numbers, it is imperative that we provide the highest level of training possible locally. The dynamics of today’s incidents have changed dramatically and the need for realistic, functional education and training has never been higher. In addition to providing the basic entry-level fire and EMS courses, the division supports training of driver/operators, company officers, and chief officers on the new technologies and leadership required to facilitate a combination career and volunteer fire and rescue system.

Additional Training Officers with assist the existing Training Division Staff will facilitation of the annual training plan adopted by the Frederick County Fire and Rescue Department and the Frederick County Volunteer Fire and Rescue Association. This training plan is reviewed every two years by Departmental Officers (career and volunteer), to ensure that it meets the needs of our fire and rescue system in an effort to prepare our emergency responders to respond to emergent and non-emergent incidents within Frederick County and the surrounding jurisdictions. During the past two years, the Training Division has conducted two Career Recruit Schools in addition to the training programs offered during the annual training plan, which has created an excessive workload for the existing staff. The need to conduct the Career Recruit Schools is becoming more prevalent since the potential candidates are young with very limited certifications and experience, which causes the training programs be provided to them just to bring them up to current standards required by the Department. The Department has always attempted to utilize volunteer instructors and part-time personnel to provide instruction during the Volunteer Fire and EMS Academies as well as the Career Recruit School, but the number of personnel available to assist with these training programs is becoming less and less.

The Department applied for accreditation through the Virginia Office of Emergency Medical Services for the levels of Emergency Medical Technician and Advanced Emergency Medical Technician in March 2014. Our site visit by the accreditation team is scheduled for February 2015 with the plan on conducting our first Advanced Emergency Medical Technician course at the beginning of 2016. These positions are critical to facilitating the other training programs as to allow the EMS Training Officer to concentrate on development of the curriculum and completing all of the other components that will be required through the accreditation process. Both of these positions will also assist with the coordination/instruction of the Emergency Medical Services Academy, Basic Fire Academy, Career Recruit School(s), and other training programs offered by the Training Division. The other Training Division Staff will then be able to incorporate mandated specialized training programs into the Training Program Plan and facilitate them based upon nationally accepted best practices.

With our existing Training Division Staff, we are offering over **60,000 student contact hours per calendar and/or fiscal year** for our career and volunteer fire and rescue personnel as well as personnel from surrounding jurisdictions. The existing Training Division Staff are attempting to adjust their work schedules to maintain a 40-hr work week to keep overtime to a minimum but due to increased workload and demands, lack of availability by part-time and volunteer instructors, minimum numbers of instructors per class session, curriculum revisions by state and federal agencies, and numerous other local projects, this has not happened during the past two fiscal years. These work schedule adjustments are also necessary due to the minimum number of instructors available from the Winchester Fire and Rescue Department based upon recent mandates from them, lack of instructor availability from the Frederick County/Winchester volunteer fire and rescue companies, and limited availability of full-time career staff of the Fire and Rescue Department based on current shortages of field personnel.

Delivery of initial certification training represents the “core” of the Division’s annual training calendar. However, advanced training, continuing education, and recertification programs merge with both initial certification training, and necessary specialty training, to include strategic and tactical incident management training of career and volunteer officers to collectively drive a truly comprehensive annual calendar of training programs.

Given the County’s commitment to a high performance combination system, the requirements of scheduling and conducting a comprehensive training program that ensures seamless operational capability among both career and volunteer personnel, delivered at times each of these stakeholder groups is available to participate, necessitates training 7-days a week, with weekday career training typically beginning at 8 am, and concluding with volunteer training adjournment as late as 11 pm. Such an aggressive schedule requires robust staffing resources.

In understanding the composite role of the Training Division’s staff, it is important to understand that while, in comparison to traditional public school teachers, they do “teach” – but also serve as “guidance counselors” and “tutors” to students, serve as “principals” as they schedule, supervise, and advise part-time and volunteer faculty, “librarians” and “audiovisual technicians” that maintain a comprehensive library of text and AV resources, “curriculum specialists” that develop lesson plans and associated teaching materials for new courses, “custodians” and “support technicians” that configure classrooms, clean/maintain training equipment and facilities to include the burn building and associated training

props, and perform minor repairs on AV equipment and fire- rescue hardware, and “administrative assistants” that perform their own word processing and data entry, filing, and photocopying. It is the need to balance this composite role that sees each Training Division non-supervisory staff member available to “teach” roughly 300 hours annually, with Division supervisors available to “teaching assignments” of only 250 hours per year.

Organizational Structure and Challenges

The Division derives much of its internal system mandate from the Department Chief and the Volunteer Fire and Rescue Association Training Committee. As part of their responsibility they provide input and direction to the Training Division to address issues or concerns in terms of service delivery, attempt to forecast the training needs of the volunteer companies within the county and evaluate current programs to ensure they meet the high level of quality desired. These initiatives reflect themselves in directing the Training Division to create new programs, increase the number of opportunities for attendance to specific programs and modify established courses in terms of content. This is done so that the capabilities of those who provide direct assistance to the community are developed to a level that is acceptable in a high performance organization.

As the County and fire-rescue system continues to grow, more demands are being placed upon our volunteer contingent. Training requirements are always scrutinized for effectiveness, efficiency, and safety. This process often leads to increasing the amount of training required in order to maintain new levels of skill and ability. While the Training Division works in conjunction with the leadership of the organization, cognizance that the average service career of the system’s volunteer members is approximately 2 years must be maintained. Accordingly, as alluded to within this plan, the Training Division must accommodate for both the continuing education of experienced volunteers and also take into account the constant influx of new volunteer personnel who require both basic and advanced training. The net effect is that although our quantity of active volunteer members remains constant, their make-up is undergoing substantial changes on a regular basis.

Commonwealth and National Standards

In order to satisfy the training needs, the Division conducts a considerable amount of actual course instruction throughout the year. These courses range from newly created curriculums, to refresher training sessions. This is accomplished in concurrence with already established programs that are regularly scheduled in order to meet the demands of both career and volunteer availability. Each course delivered meets the appropriate standard as it relates to that specific area of operation. For example, in our basic firefighting training, we abide by the National Fire Protection Association (NFPA) consensus standards.

The Code of Virginia provides regulatory authority to the Commonwealth’s Fire Services Board and Department of Health for governance of each locality’s training delivery:

§ 9.1-203. Powers and duties of Virginia Fire Services Board;

- The Board shall have the responsibility for promoting the coordination of the efforts of fire service organizations at the state and local levels. To these ends, it shall have the following powers and duties to develop and recommend personnel standards for fire services personnel and conduct training schools for fire service personnel in various areas of the Commonwealth;

§ 32.1-111.4. Regulations; emergency medical services personnel and vehicles.

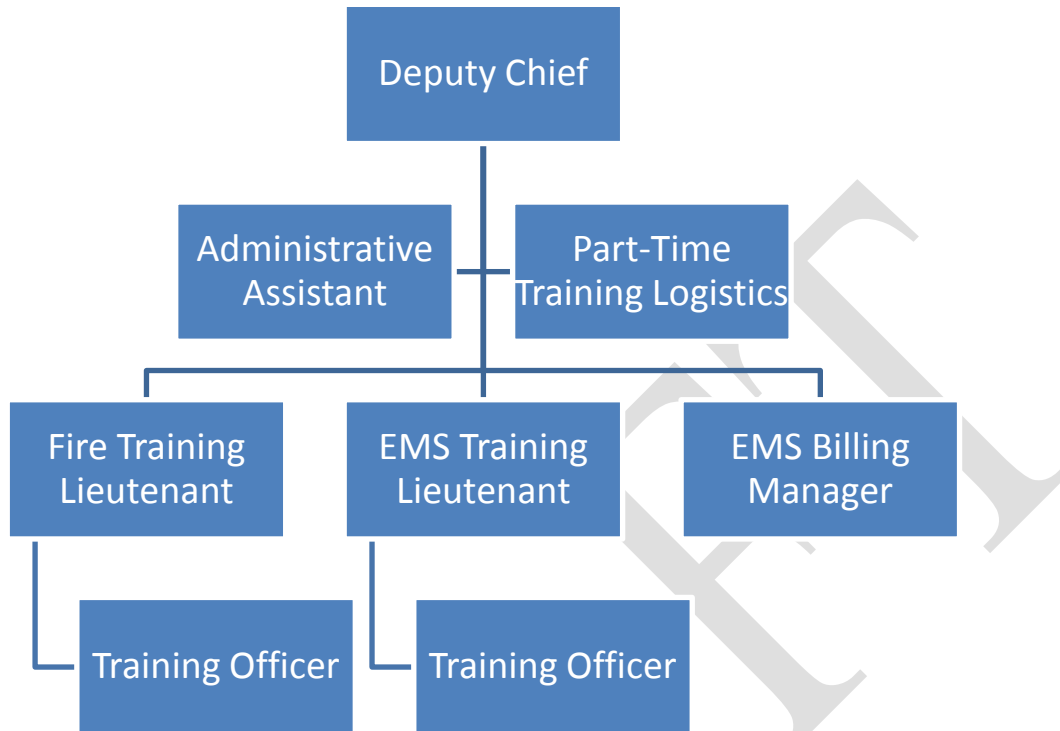
- The State Board of Health shall prescribe by regulation: Requirements for record keeping,

supplies, operating procedures and other agency operations; Requirements, developed in consultation with the Emergency Medical Services Advisory Board, governing the certification and recertification of emergency medical services personnel.

The rules and regulations that we are required to adhere to are subject to modification at any time during the year. Recently, the Department of Homeland Security has issued a Presidential Directive (HSPD-5) that stipulates specific activities that must be undertaken by local governmental agencies in order to receive any future federal financial assistance for emergency preparedness issues. One of the activities outlined was to make certain that personnel receive specified training in National Incident Management Systems. This places a large burden on the Training Division in the sense that while we are expected to accomplish this objective, we are still held accountable to maintain our current level of internal training course deliverables. It should also be understood that as our Department grows and greater demands are placed upon the Division, we will have to accommodate changes in requirements from organizations such as the NFPA, DHS, OSHA, Virginia Department of Fire Programs, Virginia Department of Emergency Management (VDEM), Virginia Department of Health (VDH), Virginia Department of Labor and others who have jurisdictional oversight authority to implement policies as they deem prudent.

Another facet commonly overlooked in program development is maintenance. The above-mentioned agencies not only require certain parameters be met for initial certification but also have specific procedures that must be complied with in order to maintain the initial certification. This is especially true when we examine our EMS component. Whether the certification is at the basic or the more difficult advanced level, each has a required number of continuing education hours attached. These include not only didactic classes but practical skill evaluations as well. These requirements will continue and most probably be enhanced as we continue to improve upon our service delivery and extend our capabilities.

Figure 15 – Enhanced Staffing Level: Training Division



Impacts and Outcomes if adopted

This service level, if adopted, will allow the Department to expand and improve training delivery to the combination system. These two positions will assist the existing Training Division Staff will facilitation of the annual training plan adopted by the Frederick County Fire and Rescue Department and the Frederick County Volunteer Fire and Rescue Association.

2 – Training Officers (New FTE)

Fire and EMS Academies

The Training Division has conducted 13 Basic Fire Academy’s since 2002 plus an additional three (3) Firefighter Level I courses and three (3) Firefighter Level II courses graduating a total of 488 firefighters since its inception. The Academy runs from September through April of each fiscal year with students attending class sessions on Monday and Wednesday nights, Saturdays, and some Sundays. The Basic Fire Academy provides the following certifications to personnel that complete the Academy: Basic Life Support for Healthcare Providers, Firefighter Level I, Firefighter Level II, Mayday! Firefighter Down! Awareness and Operations, Rapid Intervention Team (RIT) Training, Hazardous Materials First Responder: Operations, Vehicle Rescue Awareness and Operations Course, National Incident Management System (NIMS)-An Introduction, National Response Framework (NRF)-An Introduction, and Basic Incident Command System for the First Responder. These certifications and other ancillary

education/training provide the framework to allow the new firefighters to be functional during emergency responses.

The Training Division has conducted six (6) Emergency Medical Service Academy's since 2009 graduating a total of 155 emergency medical technicians since its inception. The Academy runs from September through April of each fiscal year with students attending class sessions on Monday and Wednesday nights, Saturdays, and occasional Sundays. The Emergency Medical Services Academy provides the following certifications to personnel that complete the Academy: Basic Life Support for Healthcare Providers, Emergency Medical Technician, Hazardous Materials First Responder: Awareness, Pediatric Education for Pre-Hospital Professionals – BLS, Geriatric Education for Emergency Medical Services – BLS, Mass Casualty Incident Management Levels I and II, Vehicle Rescue Awareness and Operations, National Incident Management System (NIMS)-An Introduction, National Response Framework (NRF)-An Introduction, and Basic Incident Command System for the First Responder. These certifications and other ancillary education/training provide the framework to allow the new EMS providers to be functional during emergency responses.

Both of these academies also provide the students with the knowledge, skills, and abilities related to the fire and rescue service as well as give them a historical perspective of the national, regional, and local fire and rescue services. These academies also provide foundational life experiences for these individuals that will also assist them in their personal lives as well. Some of these experiences include: learning how to treat people, learning how to address officers and members of the fire and rescue service, the importance of time management, preparing for educational experiences in various learning environments, cooperation and collaboration, actively participate in all aspects of the educational experiences, learn about yourself, learn about other personnel on your team, and learn the foundation components of the fire and rescue service. The Training Division's motto is "Live to Train . . . Train to Live!"

Recruit School

Another aspect of the organizational influence upon training deals with our capabilities to effectively train the career firefighter/EMTs. As more and more volunteer stations ask for staffing assistance, we will need to meet this request with trained personnel. This increase can be seen in recent Board requests, which have authorized additional hiring's, as a means to meet both community and system demands. The Training Division has conducted four (4) Recruit Schools since 2004 to educate and train new employees for the Department. These Recruit Schools ranged from 10 to 14 weeks based upon identified needs of the Department as well as previous experience of the recruits. Based on feedback from staff, instructors, and recruits from Recruit School #4, the need to conduct a full twenty two (22) week Recruit School for new employees is necessary for future Recruit School programs. The amount of education, experience, and certifications that potential new employees have today is greatly decreased from previous hiring times for the Department. This full Recruit School will provide each recruit with essential basic training in emergency medical care, fire suppression operations, hazardous materials mitigation, and specialized rescue incidents. In conjunction, several additional classes are held to enhance the recruit's capabilities to better serve the community with training in areas such as hazardous material operations and car safety seat installations.

Impacts and Outcomes if adopted

This service level, if adopted, would allow the Department to expand the current recruit school to an entry-level training program, allowing more interested individuals to qualify for positions within the Department. Currently, new employees must already possess fire and EMS certifications and experience, greatly decreasing the number of individuals who can apply for the position of Firefighter/EMT within the Department. A full recruit program would allow the Department to expand and improve emergency training and delivery to the combination system.

Operational Training

The Training Division is still charged with the responsibility to see to it that training continues out in the field. In order to accomplish this, the Division develops and oversees the Shift Training Program that allows each of our career personnel and any interested volunteer personnel to attend scheduled training eight (8) hours per month over a period of three (3) days. The purpose of this program is to ensure that personnel receive all of the mandated training (OSHA Hazardous Materials and Respiratory Protection), Virginia Office of Emergency Medical Services continuing education for EMS Providers required to maintain their EMS certification, annual "live fire" training, annual Rapid Intervention Team (RIT) drills, and identified needs of the Department. In addition to the Shift Training Program, the Training Division assists the Operations Division with structured educational deliveries to assist the station officers with their planning activities and to make certain that a standard variety of topics are addressed and trained upon in each of the battalions. The program helps with not only administering a consistent level of training but ensuring that all stations receive the same training opportunities. This method also encourages the various companies to work together in a training environment to improve their efficiency and team building skills.

Regional Public Safety Training Center

This project will facilitate realistic training in today's modern environment for emergency services and industrial personnel located throughout the Northern Shenandoah Valley and expanding into the State of West Virginia. This project will reinforce existing training programs in those respective agencies and jurisdictions as well as facilitate training that is currently not available within the Northern Shenandoah Valley which causes students and instructors to travel into the Washington Metropolitan region. This project needs to plan for facilities and props that will afford training opportunities for future types of events and incidents with a minimum 30-year life expectancy. The number of potential personnel being trained at this Training Center is potentially in the thousands based upon training statistics provided in July 2007 by the participating agencies.

The Regional Public Safety Training Center project has been in the Capital Improvements Project since 2007 but with the economic downturn it has not been acted upon. During the past two (2) years, the Winchester Burn Building has been condemned by local engineers and it is not approved by the Virginia Department of Fire Programs to be utilized for certification burns. Since this occurred, the Training Division now travels to one of several different burn buildings either in Shenandoah County or in Northern Virginia. While this allows the students an excellent opportunity to burn in different facilities, it is extremely personnel dependent preparing the equipment and apparatus to travel to these facilities.

The Regional Public Safety Training Center is proposed to be located in the area central to the region which is the Middletown area of Frederick County. This area will facilitate necessary access by all participating agencies and jurisdictions as well as be incorporated into the existing facilities of the Lord Fairfax Community College and the Rappahannock Regional Criminal Justice Academy – Middletown Campus. The Training Center will require between 80 to 100 acres to facilitate the required buildings, associated props, and ancillary training areas. The exact size, square footage, and capacity of the buildings, associated props, and training areas will be determined by a training needs assessment based upon today's fire and rescue educational needs as well as projected needs for the next 10 to 30 years, but is expected to be between 20,000 and 25,000 square feet. The design features will also be based upon best practices utilized by other public safety training centers across the Commonwealth of Virginia and United States. This project will take several years to complete due to the various identified needs and is expected to be implemented in three (3) phases.

The needs and suggestions for the Training Center building, facilities, and props include: an administration building capable of eight (8) classrooms, auditorium for large class sessions, offices for staff and instructors, reference library, media duplication editing and storage, training storage, physical training facility, locker rooms and shower facilities; a high bay area to facilitate storage of training materials and props, simulation areas related to different residential complexes, and numerous other usages; a Class "A" burn building with capabilities of residential and commercial type occupancies up to four (4) stories in height, capabilities of firefighting operations in single and multi-family dwellings; a training tower up to six (6) stories in height designed for interior and exterior operations, capabilities of sprinkler and standpipe operations, search and rescue operations, stairwell operations, law enforcement tactical operations, and low-angle/high-angle technical rescue operations; candidate physical ability test building to conduct pre-employment physical agility testing; emergency vehicle operator's course driving range for Class 1 through Class 3 vehicles; driving range and skid pad for law enforcement driving exercises; shooting range for initial certification, requalification, and specialized operations for law enforcement operations; and many, many additional training props to facilitate educational processes for emergency responders.

Impacts and Outcomes if adopted

This service level, if adopted, would allow the Department to offer modern facilities and props to train emergency responders and industrial personnel for response to incidents. It is becoming more apparent every day, with the increased diversified population, number and type of residential and commercial buildings, and the mandated requirements for fire and rescue services, that a regional training facility is necessary to provide the citizens of Frederick County the best protection possible.

Life Safety-Fire Marshal's Office

The Fire Marshal's Office is dedicated to protecting the lives and property of residents, businesses, visitors and first responders from the devastating consequences of fire, explosions, and hazardous materials throughout Frederick County. The cumulative efforts of inspections, investigations, and innovation by the Fire Marshal's Office helps prevent emergency incidents, foster sustainable economic development, reduce firefighter injuries, and increase the quality of life in Frederick County.

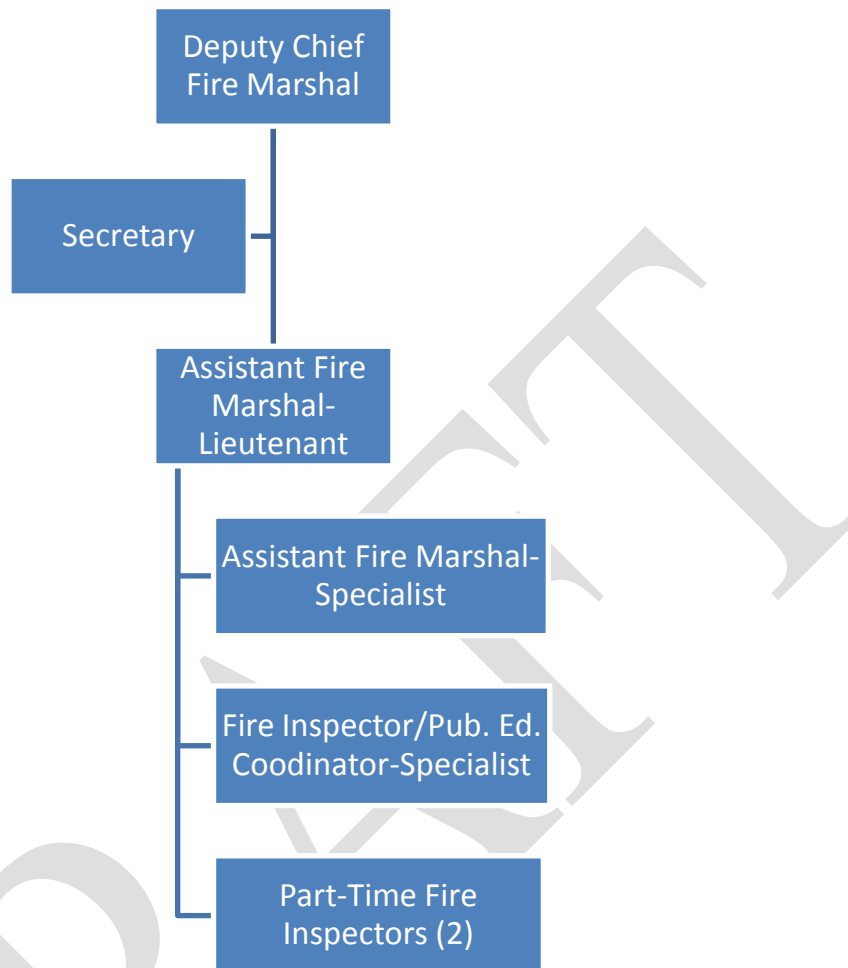
It is the objective of the Fire Marshal's Office (FMO) to inspect all commercial and retail space located in Frederick County at least annually, as recommended by the Virginia Statewide Fire Prevention Code. Currently, approximately 5,400 retail, commercial, and home-based properties are by Code subject to regular fire prevention inspections. Of those annual inspections, 75% will generate at least one re-inspection. According to the Winchester-Frederick County Economic Development Commission, 40% of our businesses are high quality manufacturers or heavy industrial operations, which pose a high fire risk.

As the County continues to add residential development, commercial, and business growth is projected to grow as well. Staffing levels in the Fire Marshal's Office has not changed since 2005; however, the county's population has continued to grow at an average rate of 30% every 10 years according to the Frederick County Planning Department.

Fire Marshal's Office Drivers

- Virginia Statewide Fire Prevention Code
- Frederick County Fire Prevention Code
- National Fire Protection Agency (NFPA) Standards
- Inspections: annuals and new construction
- Code of Virginia: Section §27-31 requires the fire marshal or his designee to conduct an origin and cause investigation into every fire and explosion in the jurisdiction of authority.
- Explosives/Accelerant Canine Program
- Public Education
- Plans Review
- Permits
- FOIA Requests and records management

Figure 16 – Current Staffing Level: Life Safety/Fire Marshal



Restructure of the Life Safety Division

The proposed enhanced staffing levels would allow the Fire Marshal’s Office to meet the requirements of the Virginia Statewide Fire Prevention Code, Frederick County Fire Prevention Code, and the NFPA Standards and thus would allow for the restructuring of the Division to have a Code Enforcement Branch and an Investigations Branch. Each branch can concentrate on their specific responsibilities and provide a more customer service orientated approach to completing the tasks required of the office and our commitment to ensure the daily life safety of our residents and visitors of Frederick County will be the forefront of our future endeavors and goals.

Impacts and Outcomes if adopted

An additional supervisory role within the Life Safety Division will allow for better coordination and support between the two branches. This additional position will allow for increased span of control and would serve as the Deputy Fire Marshal, and in the absence of the Deputy Chief Fire Marshal, this position would serve at the Division supervisor.

1 – Deputy Fire Marshal (New FTE)

Inspections and Permits

With the adoption of the Virginia Statewide Fire Prevention Code in 2012, one of the objectives within the code is to have 100% of all commercial and retail properties inspected annually. There are approximately 5,400 retail and commercial/home-based properties that are, by code, subject to fire prevention inspections. The current staffing levels afford us the ability to complete approximately 20% of the required inspections. In the last five years, nearly 1,700 inspections have been completed. At present, our Full-Time Inspector also reviews plans and acts as the Public Education Coordinator. With increased staffing levels, our goal would be to increase the number by an additional 60%.

Annual inspections are done on existing occupancies ensuring that sprinkler and fire alarm systems, fire extinguishers, paths of egress, exit signs, and emergency lighting are in place and able to operate as they are intended. New construction inspections include hydrostatic testing, sprinkler, fire alarm, fire suppression systems (mechanical hood systems), and fire lanes. In addition, we also inspect tents, commercial burn sites, blasting sites, trucks carrying explosives, explosive storage, fireworks sales and display and final occupancy inspections. Currently, annual inspections are scheduled and prioritized to include high life hazard, schools, daycares, nursing homes, places of assembly; significant dollar loss potential, retail, large industrialized facilities, etc.

Currently the Fire Marshal's Office requires a permit for the use of explosives/blasting, storage of explosives/blasting agents, fireworks display, firework stand and for non-agricultural burning. The Virginia Statewide Fire Prevention Code authorizes the Office of the Fire Marshal to require an operating permit (i.e., Fire Prevention/Life Safety Code Permits) for activities, processes, and occupancies regulated by the Fire Prevention Code. Once issued, Fire Prevention/Life Safety Code Permits allow the permit applicant to (i) conduct activities involving the handling, storage, or use of substances, materials or devices regulated by the Fire Prevention Code, (ii) conduct processes regulated by the Fire Prevention Code which produce conditions hazardous to life or property, (iii) and/or to establish a place of assembly. Operational permits would also be issued for the closure of fuel storage tanks (i.e., remove or abandon in place).

Impacts and Outcomes if adopted

Our proposed Life Safety/Fire Prevention Permit Fee Schedule will generate revenue, which will offset the costs of additional staffing. By expanding our inspection services to include life safety/fire prevention operational permits, that many area jurisdictions already require, we will improve the overall fire and life safety to our county citizens, visitors, firefighters, and provide additional education to the business owners. The addition of one Permit Technician to support plans review and inspections will assist staff with the division permitting process, billing and information management of inspections.

It is important for the safety of Frederick County citizens, businesses, and first responders that these locations are inspected and found to be in compliance with the specific requirements set forth by the Fire Prevention Code. The collection of Fire Prevention/Life Safety Code Permit fees would generate revenue to offset operational costs associated with the Fire Marshal's Office.

This service level will increase fire inspection rates to approximately 75% of properties. Additionally, inspection and investigative staff will continue to assist customers processing FOIA and due-diligence requests, as well as manage time between enforcement, investigative and hazardous device inspections and responses.

- 2 – Assistant Fire Marshal/Fire Inspector (New FTE)
- 1 – Permit Technician (New FTE)
- 1 – Civilian Fire Inspector (New PTE)

Investigations

The Code of Virginia §27-31 through §27-31.1 requires the Fire Marshal to investigate all reported fires and explosions. Some of the investigative requirements include fire origin and cause determination, scene documentation, witness interviews, investigation of explosive incidents, hazardous materials incidents, executing searches, and providing expert testimony in the criminal court system. Determining and understanding the cause of these fires is vital to the safety of the community so that preventive measures may be strengthened and unlawful acts prosecuted. Due to current staffing, inspections are often interrupted by investigations causing the need to prioritize workload.

Investigators will conduct investigations on all fires and/or explosion incidents and will pursue criminal investigations on all incidents involving suspicious or illegal fire or explosive-related activities. As population, housing, and commercial business increases, the investigation of fires, improvised explosive devices, and environmental offenses will also increase.

The maintenance of certifications for all of the professional staff within the Fire Marshal's Office is significant. In addition to maintaining Firefighter/EMT certification, additional training in Fire Inspection, Plans Review and Code Updates, Investigations, Interviews, and Report Writing are required. This additional training must be maintained and annual updates are required to continue with law enforcement certification.

Impacts and Outcomes if adopted

Increased staffing will allow the Fire Marshal's Office to respond to and investigate a larger number of fires, explosive, and environmental incidents within Frederick County. It would also allow for better expansion of the Canine Program. The additional staffing will assist with the required after-hours on call time for any life safety issues that may arise within the jurisdiction.

Additionally, inspection and investigative staff will continue to assist customers processing FOIA and due-diligence requests, as well as manage time between enforcement, investigative and hazardous device inspections and responses.

- 1 – Assistant Fire Marshal/Investigator (New FTE)

Public Education

The delivery of public education must remain a priority for the Department. Currently our full-time Inspector splits his time between inspections, plans review, and public education, which involves the development, coordination, and delivery of life safety presentations. As the population of the County

increases, the demand for public education also will increase. Programs are directed at specific audiences such as children, senior citizens, community groups, and commercial businesses. Each group has special needs and thus must be evaluated appropriately in future plans for public education programs. It will be imperative for the Department to continue to deliver this proactive means of fire and accident prevention. This function will become more critical as residents will demand to know more about safety and emergency procedures for all types of threats, including terrorism.

In the past, our Public Education Program was able to rely on assistance with program delivery from the Operational members of the Department. Unfortunately, the increase in fire and EMS responses, and the decrease in the number of active volunteers has made it virtually impossible to make direct program delivery to all citizens.

Impacts and Outcomes if adopted

The Public Education Coordinator will address the desire for increased opportunities to engage with the community and raise public awareness of fire prevention programs. The number of requests for life safety education from civic organizations, private businesses, public and private schools are steadily increasing. At present, we are reaching approximately 5% of our population, with additional staffing we would be able to increase the number of people we are able to educate.

1 – Public Education Coordinator (New FTE)

Figure 17 – Enhanced Staffing Level: Life Safety/Fire Marshal

