CHAPTER SIX
APPARATUS AND EQUIPMENT

The selection, purchase and maintenance of fire department apparatus and equipment are important aspects of any fire department’s operation and are usually second to personnel costs in budget share.

The selection and purchase process used by a fire department must meet adopted procurement code processes and should be based on community need. Careful research and planning are crucial to meeting these needs. Fire vehicles and equipment are very specialized and technical in their nature.

Fire departments must be knowledgeable about all applicable standards and laws that impact the design, performance, use and maintenance of the equipment. The selection and purchase of apparatus and equipment must take into account many factors. The foremost factor is the safety of the firefighters and the public. One of the 16 Firefighter Life Safety initiatives of the National Fallen Firefighters Foundation states: “Safety must be a primary consideration in the design of apparatus and equipment.”\(^1\) Another factor is how the vehicle or equipment fits in with previous purchases.

In addition, a fire department must provide training on the proper use of all the vehicles and equipment and must provide maintenance for the item purchased as described by the manufacturer.

COMMISSION ON FIRE ACCREDITATION INTERNATIONAL (CFAI)

The Commission on Fire Accreditation International (CFAI) emphasizes the roles fire, EMS and support apparatus and vehicle acquisition and maintenance in an efficient, safe, and effective fire department. Progressive fire departments use this criterion, and others, as a benchmark for determining the best and safest service possible. The CFAI Apparatus and Vehicles and the Apparatus Maintenance Criterion Performance Indicators, as referenced by the Study Team, are provided below.

\(^1\) Source: NFPA Handbook, 2008, Fire Department Apparatus
Criterion 6B: Apparatus and Vehicles

Apparatus resources are designed and purchased to be adequate to meet the agency’s goals and objectives.

Performance Indicators

1. Apparatus is located to accomplish the stated standards of response coverage and service level objectives.
2. Apparatus types are appropriate for the functions served, i.e., operations, staff support services, specialized services and administration.
3. There is a replacement schedule for apparatus and other tools and equipment.
4. There is a program in place for writing apparatus replacement specifications.

Criterion 6C: Apparatus Maintenance

The inspection, testing, preventive maintenance, replacement schedule and emergency repair of all apparatus are well established and meet the needs for service and reliability of emergency apparatus.

Performance Indicators

1. The apparatus maintenance program has been established. Apparatus is maintained in accordance with manufacturer’s recommendations, with activity conducted on a regular basis. Attention is given to the safety-health-security aspects of equipment operation and maintenance.
2. The maintenance and repair facility is provided with sufficient space and equipped with appropriate tools.
3. A system is in place to ensure the inspection, testing, fueling, preventive maintenance and emergency repair for all fire apparatus and equipment.
4. There are an adequate number of trained and certified maintenance personnel available to meet the objectives of the established program.
5. There is an adequate supervision to manage the program.
6. There is a management information system in place that supports the apparatus maintenance program and provides for analysis of the program.

These Criterion and Performance Indicators will be addressed in the body of the chapter and specifically in the chapter summary.
APPARATUS AND EQUIPMENT ADMINISTRATION

Fort Myers Fire Department

The FMFD Fire Chief is responsible for the design, specifications and purchase of new fire apparatus. The Fire Chief assigns a committee, made up of uniformed fire personnel from various ranks and one of the Emergency Vehicle Technicians (EVTs) from the Fleet Maintenance department, to select/design all firefighting apparatus. Once the committee has finished this process, it is sent back to the Fire Chief for final approval.

The fire apparatus and equipment maintenance program is overseen by the Deputy Chief, Operations Chief and the Interim Fleet Superintendent. During daily shift inspections of the apparatus and equipment firefighters report any deficiencies to their officers and through an email based “Repair Order” to the Public Works–Fleet Maintenance department. The repair order is then reviewed by an EVT at Fleet Maintenance and a priority is assigned. If immediate repair is warranted or the repair has been scheduled, the on-duty crew drives the apparatus to the Public Works–Fleet Maintenance facility and swaps out to a reserve apparatus piece and return to their respective station. If the repair is minor and only takes a few minutes the on-duty crew will remain at the maintenance facility while the repair is done.

FMFD experimented with a staff “Logistics Coordinator” this year, but did away with the position towards the end of July 2016. One of the many responsibilities of this position was to coordinate and physically move apparatus to and from the Public Works–Fleet Maintenance facility for scheduled maintenance and repair work. In the case that a piece of apparatus needs to be taken out of service for repairs the Logistics Coordinator would drive to the maintenance facility, pick up the reserve apparatus, drive it to the station and then return to the maintenance facility with the apparatus that needed the repair. When the repair was completed the Logistics Coordinator would provide the same service in the reverse order.

The Study Team recommends that the Fire Chief consider re-establishing the Logistics Coordinator position. There are many advantages to this type of a system. Fleet Maintenance would have one individual to coordinate all maintenance and repairs and the on-duty crew stays in service at its assigned station because the apparatus is being moved around by someone other the on-duty crew.
Public Works–Fleet Maintenance

Public Works–Fleet Maintenance is responsible for maintenance and repair of 686 city vehicles. These include service vehicles, emergency response vehicles, garbage trucks, dump trucks, etc. Specialty vehicles, such as boats, are sent to a dealer or facility that specializes in that type of repair and/or service.

Fleet Maintenance maintains a preventative maintenance schedule and tracks all repairs through the Public Works’ tracking software system. Preventive maintenance is done every three months on all fire apparatus. Every three months an “A” Service is done, which is basic oil and filter(s), etc. Every 6 months a “B” Service is done, which is more comprehensive than the “A” Service and includes service of the transmission, hydraulics, etc.

There are currently three EVTs working at Fleet Maintenance who are specially trained to work on emergency response apparatus. Having trained EVTs helps to ensure those working on emergency vehicles are competent to do so. In addition, EVTs are more knowledgeable, effective and efficient, reduce maintenance costs, increase reliability and safety and reduce downtime. Properly trained and certified technicians will also help reduce exposure to any entity that is involved in a legal case where injuries or death are alleged because of gross negligence of a technician.

The Interim Fleet Superintendent is currently one of the three EVTs at maintenance. If he were to be appointed to the Fleet Superintendent an additional mechanic should be trained to the EVT level. Additionally, the Public Works–Fleet Maintenance Superintendent should develop a long-term plan to ensure that at least three of the city’s mechanics are EVTs certified through the EVT Certification Commission, Inc.

**CURRENT APPARATUS AND VEHICLE INVENTORY**

The FMFD vehicle inventory is comprised of six engines, two rescues, one ladder, one aerial tower, one fireboat, one fire rescue boat, a small 3-horsepower boat, eight command/staff vehicles, five fire prevention vehicles, five service trucks, one technical rescue trailer, one haz-mat trailer, one decon trailer, one special operations trailer, one mitigation trailer, two tow vehicles and one special-use unit. Figure 6.1 lists the current fire and rescue apparatus and vehicle inventory for the FMFD, along with their functions, capacities and assignments.
### Figure 6.1
**FMFD Apparatus and Vehicle Fleet**

<table>
<thead>
<tr>
<th>Location</th>
<th>Unit ID#</th>
<th>Assignment</th>
<th>Year</th>
<th>Make</th>
<th>Date Acquired</th>
</tr>
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<tbody>
<tr>
<td>Fire Prevention</td>
<td>FD577</td>
<td>Ben Noell</td>
<td>2004</td>
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<td>11/12/2015</td>
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<td>Station #1-BC</td>
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<td>Pierce Impel</td>
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<td>FD619</td>
<td>Service #13</td>
<td>2006</td>
<td>Ford Ranger</td>
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<td>FD194</td>
<td>Engine #14</td>
<td>2014</td>
<td>Pierce Pumper</td>
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<td>FD439</td>
<td>Hazmat Trailer #15</td>
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<td>Wells Cargo</td>
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<td>Pierce Pumper</td>
<td>12/11/2000</td>
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<tr>
<td>Station #4</td>
<td>FD701</td>
<td>Engine #19 (Reserve)</td>
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<td>2008</td>
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<td>Yacht Basin</td>
<td>FD080</td>
<td>Marine #11-Boat</td>
<td>2008</td>
<td>Boston Whaler</td>
<td>07/30/2008</td>
</tr>
</tbody>
</table>

- Engine
- Ladder/Truck
- Rescue
- Boat
APPARATUS REPLACEMENT SCHEDULE

To maximize firefighter capabilities and minimize risk of injuries, it is important that fire apparatus be equipped with the latest safety features and operating capabilities.

Significant progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus in recent years. All frontline apparatus needs to meet the edition of the NFPA 1901, *Standard for Automotive Fire Apparatus*, when it was manufactured.

There are a number of national fire apparatus organizations that have promulgated sample replacement schedules for fire and EMS apparatus, including the National Association of Emergency Vehicle Technicians (NAEVT), Fire Department Safety Officers Association (FDSOA), the National Fire Protection Association (NFPA), the Fire Apparatus Manufacturer’s Association (FAMA) and the American Public Works Association (APWA).

FAMA developed the “Fire Apparatus Duty Cycle White Paper” in 2004 and revised it in 2007. The paper is an in-depth analysis of many aspects of apparatus replacement, including the key factors to be considered in a typical apparatus replacement schedule including:

- Type of department;
- Fire department workload;
- Population served;
- Demographics served; and
- Topography of region served

Sample FAMA Apparatus/Vehicle Replacement Consideration Guidelines are as follows:

**Excellent Condition (E)**

- Less than five years old
- Fewer than 800 engine hours
- Fewer than 25,000 miles
- No known mechanical defects
- Very short downtime and very few operating expenses
• Excellent parts availability
• Very good resale value
• Meets all present NFPA 1901 and 1911 edition safety standards

**Very Good Condition (VG)**
• More than five but less than ten years old
• More than 800 but fewer than 1600 engine hours
• More than 25,000 but fewer than 50,000 miles
• No known mechanical or suspension defects present
• Low downtime and above average operating costs
• Good parts availability
• Good resale value
• Meets NFPA 1901 and 1911 safety standards

**Good Condition (G)**
• More than 10 but less than 15 years old
• Some rust or damage to the body or cab
• More than 1,600 but less than 2,400 engine hours
• Some existing mechanical or suspension repairs necessary
• Downtime and operational costs are beginning to increase
• Parts are still available but getting difficult to find
• Resale value decreasing
• Meets all NFPA 1901 and 1911 safety standards

**Fair Condition (F)**
• More than 15 but less than 20 years old
• Rust, corrosion, or body damage apparent on body or cab
• More than 2,400 engine hours
• More than 75,000 but fewer than 100,000 miles
• Existing mechanical or suspension repairs necessary
• Downtime is increasing and operational costs are above historical average
• Parts become harder to find and/or obsolete
• Very little resale value
• Does not meet all NFPA 1901 and 1911 safety standards

Poor Condition (P)
• More than 20 years old
• Rust, corrosion, or damage to the body of cab impacting use of the apparatus
• More than 2,400 engine hours or 100,000 miles
• Existing mechanical or suspension problems affecting operation of the apparatus
• Downtime is exceeding in-service availability
• Operational costs are exceeding the resale value
• Parts are obsolete
• Does not meet all NFPA 1901 and 1911 safety standards

Average Apparatus Service Life

There are numerous resources available for reference to the average active and reserve life of emergency vehicles. The FAMA’s “Fire Apparatus Duty Cycle White Paper” (2004/2007) offers the following:

Average Expected Years of Apparatus in Active Service

<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Suburban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>15</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Aerial</td>
<td>18</td>
<td>19</td>
<td>21</td>
</tr>
</tbody>
</table>

Average Expected Years of Apparatus in Reserve Service

<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Suburban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>10</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Aerial</td>
<td>9</td>
<td>10</td>
<td>13</td>
</tr>
</tbody>
</table>

Average Expected Years of Service Life (Active Reserve)

<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Suburban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>25</td>
<td>27</td>
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</tr>
<tr>
<td>Aerial</td>
<td>27</td>
<td>29</td>
<td>34</td>
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</table>

The FAMA suggests that the average active service life of an urban engine is 15 years.
Active engines in serviceable condition could move to reserve status, as needed, when reaching their urban (15 years) life span. For purposes of this Study, the FMFD is considered an urban area due to the traffic and density.

Applying the FAMA’s formula to FMFD urban aerial ladder trucks suggests the average expected years of active service to be 18. Rescue trucks typically align with the aerial ladder truck replacement schedule, but in the case of FMFD the rescue trucks are heavy duty pick-up trucks and will average 10 to 12 years of active service.

The Henrico County (VA) Fire Department recently implemented a different rationale for the determination of the replacement of fire department vehicles. The rationale involves the comparison of the life-to-date maintenance costs to the original vehicle acquisition costs. Its philosophy is one of not asking taxpayers to invest more money in the maintenance of a fire department vehicle than what they originally paid for it. They call it the ratio of maintenance to acquisition or M:A. They remove their front-line units from service when the M:A reaches 60 percent. This effectively means the vehicle has a 40 percent M:A equity remaining to serve as a reserve unit.

The Public Works–Fleet Maintenance has the data retention capability to initiate the retention of all maintenance cost for the life of fire department vehicles to determine M:A ratios based on the excellent fleet management reports provided to the Study Team. Policymakers could determine the M:A percentage benchmarks for movement to reserve status or replacement.\(^2\)

The American Public Works Association suggests a point system base replacement plan\(^3\) as listed below.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Age:</td>
<td>One point for every year of chronological age, based on in-service date.</td>
</tr>
<tr>
<td>Miles/Hours:</td>
<td>One point for each 10,000 miles or 1,000 engine hours of use.</td>
</tr>
</tbody>
</table>


\(^3\) Source: APWA Vehicle Replacement Guide.
Type of Service:  One, three, or five points are assigned based on the type of service the unit is exposed to. For instance, fire pumpers would be given a five because it is classified as severe duty service. In contrast, an administrative sedan would be given a one.

Reliability:  Points are assigned as one, three, or five depending on the frequency that a vehicle is in the shop for repair. A five would be assigned to a vehicle in the shop two or more times per month on average, while a one would be assigned to a vehicle in the shop an average of once every three months or less.

M&R Costs:  One to five points are assigned based on total life M&R costs (not including repair of accident damage). A five is assigned to a vehicle with life M&R costs equal to or greater than the vehicle's original purchase price, while a one is given to a vehicle with life M&R costs equal to 20 percent or less than its original purchase cost.

Condition:  This category takes into consideration body condition, rust, interior condition, accident history, antiated repairs, and so on. A scale of one to five points is used with five being poor condition.

Point Ranges

<table>
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<th>Fewer than 18 Points</th>
<th>Condition I</th>
<th>Excellent</th>
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<tbody>
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<td>18 to 22 points</td>
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<tr>
<td>23 to 27 points</td>
<td>Condition III</td>
<td>Qualifies for replacement</td>
</tr>
<tr>
<td>28 points and above</td>
<td>Condition IV</td>
<td>Needs immediate attention</td>
</tr>
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</table>

The Public Works–Fleet Maintenance could use a point-based system similar to this to evaluate every piece of apparatus on an annual basis.

These sample replacement schedules are illustrations of the apparatus capital planning considerations required of every fire department. It should be noted that planning and decision making leading to the replacement of apparatus should begin at least two years prior to the planned replacement year and based on either years of service or the condition of the unit. The intent is that the unit should, in fact, be physically replaced in the service life year. Experience has shown that it may take nearly two years to plan, obtain approval/funding, and take delivery of the new unit from the manufacturer.
FMFD has not promulgated a formal fire and rescue apparatus and vehicle replacement plan, but uses a rule of thumb of a 10- and 5-year life expectancy for a pumping engine, 10 years front line and 5 years in reserve status. This may be a true reflection of FMFD pumping apparatus, but could be viewed as somewhat arbitrary if not backed up by hard data. For example, the life expectancy for Engine 11 and Engine 15 would be different based on the high activity of Engine 11 as compared to the lower activity of Engine 15.

It seems there is a strong effort in the capital improvement program (CIP) to replace apparatus on the above 10/5 schedule, however and according to FMFD, the apparatus replacement as outlined in the CIP is very seldom followed and future purchases are just pushed out.

This year FMFD had to decommission one of their three reserves—a 1995 Pierce Pumping Engine (Engine 19) because the cost to keep it in service and the unreliability of the engine could not be overcome. Ironically, the life expectancy of this engine fell in line with the FAMA replacement schedule of 15 years as a front line piece and 10 years as a reserve because it was just over 25 years old. If a proper replacement plan had been in place and followed it would have been replaced this year, allowing FMFD to still have three reserve engines in service.

FMFD also has two aerials (a ladder and a tower) in service as part of its normal daily complement; however, it does not have a reserve aerial to replace either of these when they are out of service for maintenance or service. As part of the replacement schedule the Study Team recommends a reserve aerial be maintained for this purpose. A listing of the FMFD CIP for apparatus, equipment and infrastructure (2012 to 2025) can be found in Figure 6.2.
The Study Team recommends that the FMFD develop and implement a 25-year formal apparatus and equipment replacement schedule for guidance during budgeting. This schedule should reflect the true service life and be based on past history, maintenance records and one or a combination of the nationally recognized replacement planning systems listed above. A 25-year replacement schedule makes sense based on the FAMA “Fire Apparatus Duty Cycle White Paper” that shows an urban fire engine with a front line life of 15 years and a reserve status life of 10 years.

**APPARATUS AND EQUIPMENT MAINTENANCE**

“A properly maintained and tested emergency response vehicle will provide the agency with a safe, ready-to-use vehicle with a minimum of unscheduled down time.” Compliance with the NFPA, 1911, *Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Automotive Fire Apparatus* will provide the FMFD with a comprehensive emergency response vehicle maintenance, inspection, testing and replacement program.

The need to have fully inspected, tested and maintained emergency response vehicles (and equipment) is mission critical. Recent emergency response vehicle accidents in the industry and lawsuits have brought to the forefront the need for a professionally maintained fleet. A poor preventative maintenance (PM) program, no PM program at
all, and/or unqualified technicians is a recipe for disaster. Any of these issues may lead to unsafe vehicles, increased maintenance costs and reduced apparatus life.

Along with these negative aspects, come the risk of accidents, lawsuits, lower morale and public distrust. Firefighter safety is of the utmost concern, and poorly maintained emergency response vehicles put everyone at risk. An accident caused by loss of brakes or broken components would be devastating.

The heartache of a line of duty death (LODD) is followed by board of inquiries, legal investigations and NIOSH investigation into the cause of the accidents. Every aspect of the vehicle and agency will be looked at including, but not limited to, records, documentation, qualifications of technicians, fleet department operations, testing, operator training and department policies.

The publicity following an accident is negative for the department and personnel. No one wants to see a picture of a ladder truck driven into a building or have to answer in court why NFPA 1911 (a national accepted ANSI standard) was not used to ensure the apparatus was maintained properly, tested and safe to operate.  

**In-Station Maintenance and Equipment Checks**

On-duty FMFD personnel provide the daily and routine checks and inspections of the FMFD’s vehicles, tools, appliances and equipment under their respective company officers. A “Repair Order” is filled out and emailed to Public Works–Fleet Maintenance for maintenance matters that cannot be addressed at the station level. Repairs are then scheduled by Public Works–Fleet Maintenance.

Public Works–Fleet Maintenance will make the determination to take the apparatus completely out of service or whether it is of a minor nature where the vehicle or equipment may remain safely in-service.

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4 Source: IAFC, White Paper, Apparatus Maintenance
Public Works–Fleet Maintenance

The Public Works–Fleet Maintenance operates a maintenance facility in the city that is staffed with two Supervisors and eight mechanics. There are three certified EVTs, one is the recently promoted Interim Fleet Superintendent and the other two are mechanics.

Routine scheduled maintenance of the fire department fleet is accomplished to meet and/or exceed the manufacturer’s requirements. Routine maintenance is done at the City garage facility and maintenance under warranty or requiring special equipment of expertise is sent to an outside vendor.

All boat maintenance is coordinated by the Public Works–Fleet Maintenance, but is done by a local outside vendor that specializes in watercraft. The routine checks and inspections of the fireboat, boats, tools and appliances are accomplished by on-duty FMFD personnel.

TOOLS, APPLIANCES AND EQUIPMENT ACQUISITION & MAINTENANCE

“Best practices” as well as the Insurance Services Office (ISO) require that all automotive fire apparatus be equipped commensurate with NFPA Standard 1901, Standard for Automotive Fire Apparatus. This requirement pertains to reserve apparatus as well.

FMFD should confirm that all automotive fire apparatus meets the NFPA 1901 equipment inventory requirement.

The on-duty FMFD personnel, as supervised by their company officers, initially accomplish routine maintenance of the Department’s tools, appliances and small equipment. Routine maintenance needs are usually determined during daily apparatus and equipment checks or when returning from incidents. Maintenance of tools, appliances and small equipment that is beyond the company level is referred to Public Works–Fleet Maintenance.

Figure 6.3 illustrates how required tests for apparatus, tools and hose are accomplished by FMFD.
Figure 6.3

Required Apparatus, Tools and Hose Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Frequency</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumper Test</td>
<td>Annual</td>
<td>Certified Contractor</td>
</tr>
<tr>
<td>Aerial Test</td>
<td>Annual</td>
<td>Certified Contractor</td>
</tr>
<tr>
<td>Ground Ladders</td>
<td>Annual</td>
<td>Certified Contractor</td>
</tr>
<tr>
<td>SCBA Flow Test</td>
<td>Annual</td>
<td>Certified Contractor</td>
</tr>
<tr>
<td>SCBA Facepiece Fit Test</td>
<td>Annual</td>
<td>FMFD Personnel</td>
</tr>
<tr>
<td>Hose Testing</td>
<td>Annual</td>
<td>Certified Contractor</td>
</tr>
</tbody>
</table>

APPARATUS AND EQUIPMENT POLICIES AND PROCEDURES

The Study Team was provided with the FMFD 2016 SOPs. A number of important apparatus and equipment SOPs need to be developed. The Study Team suggests that the FMFD, as soon as practical, conduct an analysis of its current SOPs as they relate to apparatus and equipment acquisition and maintenance and associated safety considerations.

As a result of this analysis, the FMFD should assign the appropriate staff to identify those SOPs that have been omitted or are missing and initiate the process, in priority, to promulgate a complete and updated library of procedures.

A comprehensive outline of subjects for apparatus and equipment guidelines to be considered for inclusion in the FMFD SOPs can be found in Chapter 8 – Operations and in Appendix A. Examples of subjects for inclusion in policy manual include:

- Self-Contained Breathing Apparatus
- P.A.S.S. Devices
- Protective Equipment and Safety Equipment
- Service Requests and Work Orders
- Supplies Request
- Equipment Safety Inspections
- Lost/Destroyed/Damaged/Stolen Equipment
- Private Use of Fire Department Property
- Fueling of Apparatus
- Use and Operation of Washer/Extractor
• Apparatus Inventory
• Defibrillators
• Testing of Air and Oxygen Cylinders
• Hose Test Procedures
• Life Rope Inspections
• Labeling Contaminated EMS Equipment
• Check Sheets and Worksheets
• Apparatus Standards
• Tools and Equipment
• Ladder Tests
• Fit Tests
• Pump Tests
• Aerial Tests

SUMMARY

Fire apparatus is a community asset. An emergency vehicle must be relied on to transport firefighters safely to and from an incident and to operate reliably and properly to support the mission of the fire department. Tools, appliances and equipment must be ready to use when needed. While expensive, the mission critical nature of fire apparatus and equipment requires redundant apparatus and equipment to be readily available to ensure operational readiness.

Apparatus and equipment that break down at any time during an emergency operation not only compromises the success of the operation, but also jeopardizes the safety of the firefighters relying on that resource to support their role in the operation. Old, worn-out, or poorly maintained fire apparatus and equipment should have no role in providing emergency services to a community.

The Commission on Fire Accreditation International (CFAI) provides criteria and a number of performance measures relating to apparatus and equipment and their maintenance. With minor exceptions, as addressed in the chapter recommendations below, the FMFD meets or exceeds the apparatus and equipment criteria and performance indicators promulgated by the CFAI.
OPTIONS AND RECOMMENDATIONS

6-1 The Public Works–Fleet Maintenance Superintendent should develop a plan to ensure that at least three of the city’s mechanics are certified Emergency Vehicle Technician’s (EVTs) certified through the EVT Certification Commission, Inc.

6-2 The Fire Chief and the Public Works–Fleet Maintenance Supervisor should develop a formal vehicle life cycle plan based on industry standards. Fleet Maintenance should evaluate every piece of FMFD apparatus and equipment on an annual basis on the adopted standards and report out to the Fire Chief annually.

6-3 The Fire Chief should develop and implement a 25-year formal apparatus and equipment replacement schedule for guidance during budgeting.

6-4 As part of the replacement schedule, the Study Team recommends a reserve aerial be added.

6-5 The Fire Chief should assign the appropriate staff to identify those SOPs that have been omitted or are missing and initiate the process, in priority, to promulgate a complete and updated set of SOPs.

6-6 The Department should to continue to conduct annual pump testing, aerial ladder testing, ground ladder testing, hose testing and SCBA testing in compliance with NFPA standards and ISO guidelines.

6-7 The Fire Chief should confirm that all automotive fire apparatus equipment inventory is in compliance with NFPA 1901, Standard for Automotive Fire Apparatus.

6-8 The Fire Chief should consider changing the Special Service Division to the Planning and Logistics Division. This division would be responsible for the planning and logistical functions of the FMFD. (See Chapter 2 for details.)

6-9 The city and the Fire Chief should consider creating a Logistics Coordinator position that reports directly to the commander of the Planning/Logistics Division. (See Chapter 2 for details.)
CHAPTER SEVEN
EMERGENCY MEDICAL SERVICES

This chapter includes review and recommendations for Emergency Medical Services (EMS) provided by the Fort Myers Department (FMFD) as they relate to best practices in emergency care, evaluation of the fire department’s response for medical calls, EMS training, and service recommendations.

OVERVIEW

The delivery of quality emergency medical care is one of the most basic services that a local government must ensure is available to its citizens. The actual delivery of such service is just one component of an EMS system. An EMS system consists of those organizations, resources, and individuals from whom some action is required in order to ensure a timely and medically appropriate response to medical emergencies.

The basic goal of an EMS system in the past was to transport the patient to a definitive care facility in a timely manner so that no further harm occurs to the patient. With the focus on curbing overall healthcare costs in the United States, this has been expanded to include focus on treat and release or treat and refer to a provider or facility other than the traditional emergency room.

Traditionally, there are 13 recognized essential elements of the pre-hospital component of an EMS system.

1. Prevention and early recognition;
2. Bystander action and system access;
3. Call taking and dispatching function;
4. Telephone protocols and pre-arrival instructions;
5. First responder dispatch;
6. Ambulance dispatch;
7. First responder services;
8. Ambulance services—basic and advanced life support;
9. Direct on-line medical control;
10. Transport;
11. Receiving facility interface;
12. Off-line medical control; and
13. Record keeping and evaluation.

Emergency medical care can be delivered through a variety of methods, which include: contracting the service through a private ambulance company; delegating the service to a volunteer agency in the community; providing direct service through government employees; or any combination of the above.

As EMS in the United States has evolved, so have the different models or profiles of organizational structures for the delivery of the service. In the early 1980s, the United States Fire Administration published *Fire Service/EMS, A Program Management Guide*. This publication identified 28 different profiles for the delivery of EMS. Twenty-six of the profiles included participation of the fire department in some aspect of the pre-hospital EMS system. Each profile has its own particular strengths and weaknesses. The profiles, identified over 30 years ago, still accurately portray fire-service-based EMS today. The original profiles identified in the *Management Guide* are built around five primary variables:

1. Dual-role vs. cross-trained vs. “civilian” providers;
2. Career only vs. career and volunteer vs. volunteer-only organizations;
3. First responder vs. EMT vs. paramedic certifications;
4. Transporting units vs. non-transporting units; and
5. Engine or truck company first response vs. no engine or truck company first response.

These variables can be combined into 52 different ways of EMS delivery; it is most likely that every variable has been tried and is probably in service today somewhere in the United States. The variables also can be pieced together as necessary to meet the needs and resources of a particular community. Many jurisdictions have started out with one profile and transitioned to another as their communities have changed and EMS systems have grown and resources shifted.
The combination of these variables can be classified into one of four main categories of pre-hospital emergency medical service delivery:

1. **Third-Party Service.** EMS services are delivered by a separate public safety agency that usually holds equal status with other agencies in the community, such as the fire department and police department. Career, volunteer, or a combination of career and volunteer personnel may provide these third-party services.

2. **Hospital-based Service.** EMS services are delivered from a medical facility, normally a local or regional hospital. Personnel delivering the services are usually hospital or health care system employees and hospital funding commonly supports the services.

3. **Private Service.** EMS services are delivered by a privately owned company for a fee, on a for-profit basis. A local government would most likely enter into a written agreement with the private ambulance company identifying the level of services provided and cost of said services.

4. **Fire Department-based Service.** EMS services are delivered by fire department personnel (career, volunteer, or combination). Fire department personnel are trained as EMS care providers and are equipped to provide care and transport for sick and injured patients.

By far, the majority of pre-hospital emergency care in the United States is provided by the fire service. FMFD provides fire-based emergency first responder and advanced life support (ALS) treatment services with a third service EMS agency - Lee County EMS - providing ALS treatment services and transport. The uniformed staff of the FMFD are cross trained (fire and EMS) with a large number of the staff being paramedic trained and certified.

**COMMISSION ON FIRE ACCREDITATION INTERNATIONAL**

The Commission on Fire Accreditation International (CFAI) emphasizes the importance of emergency medical services delivery in today’s fire department operations. Progressive fire departments use this criterion, and others, as a benchmark for determining the best practices for EMS delivery. The CFAI Emergency Medical Service Criterion Performance Indicators are provided below:
5G.1. Given the agency’s standards of response coverage and emergency deployment objectives, the agency meets its staffing, response time, apparatus and equipment deployment objectives for each type and magnitude of emergency medical incidents.

5G.2. The agency defines and provides appropriate and adequate equipment to accomplish the stated level of response for EMS incidents and to be compliant with applicable local, state/provincial and national standards and mandates.

5G.3. Supplies and materials allocation is based on established objectives, is appropriate to meet EMS operational needs, and is compliant with local, state/provincial and national standards.

5G.4. Standard operating procedures or general guidelines, and standing orders/protocols, are in place to direct EMS response activities and to meet the stated level of EMS response.

5G.5. Online and offline medical control is available to the agency.

5G.6. A patient care record is created and maintained for each patient encountered by the EMS system. This report contains patient history, incident history, data regarding treatment rendered, and the patient disposition recorded. The agency must make reasonable efforts to protect reports from public access and maintain them as per local and state/provincial records retention requirements.

5G.7. The agency has a HIPAA compliance program in place for the EMS program that meets with federal guidelines and all personnel have been properly trained in HIPAA regulations and procedures.

5G.8. Patient care records receive an independent review and the agency has a quality assurance program in place.

5G.9. The agency’s information system allows for documentation and analysis of the EMS program.

5G.10. An appraisal is conducted, at least annually, to determine the effectiveness of the EMS program.

The Study Team considered the CFAI criteria that addressed items in the scope of the Study during its assessment of FMFD’s delivery of EMS. Even though FMFD does not transport patients, these criteria are applicable.
HISTORY OF EMS IN THE FIRE SERVICE

There is a long history of fire department involvement in the delivery of EMS services in the United States. As early as 1928, a few fire departments began providing first aid services to citizens suffering from heart attack symptoms or having trouble breathing. These services were provided with equipment that the firefighters carried to treat other firefighters who would be overcome with smoke at fire incidents. Later in the 1930s, fire departments began developing special vehicles that they used to provide assistance to citizens in their communities who became ill or injured. These specialized units included vehicles used for heavy rescue and extrication operations.

During the 1940s and 1950s, many fire departments continued to provide ambulance service, consisting primarily of basic first aid and transport operations. As new techniques were developed for the care of the ill or injured outside of the hospital setting, fire departments in major cities such as Baltimore, Seattle, Los Angeles, Milwaukee, and Columbus were the first to implement the techniques.

In 1966, the National Traffic and Motor Vehicle Safety Act was passed authorizing the U.S. Department of Transportation to set EMS guidelines and establish the National Highway Traffic Safety Administration, which was charged with improving emergency medical services. As pre-hospital care started to become more sophisticated with the introduction of national standards for training of Emergency Medical Technicians (EMT) and Paramedics, fire department involvement in EMS grew throughout the United States.

In 2004, it was estimated that more than 60 percent of all fire departments in the United States were involved in providing some level of emergency medical service. Those fire departments that provided EMS services to their communities found that at least 50 percent (and up to as high as 80 percent) of their total emergency incidents handled each year were EMS related.

In 2015, FMFD responded to approximately 14,626 total calls, of which 8,521 were medical and rescue incidents (58% of total calls). This is within the range observed in departments which offer non-transport EMS.

For a fire department to deliver quality EMS service, local government officials, fire department leadership, and EMS care providers must all embrace the importance of the
service and must all understand the demands that a quality EMS program places on
departmental resources. They must all appreciate the importance of prehospital EMS to
the overall health and welfare of the community and ensure resources are appropriately
allocated. The fire department EMS services are so vital to the community’s welfare that
the medical community needs to recognize that they are part of the community
continuum of care and should be considered more than just a “treat and transport”
service.

In Fort Myers, EMS is provided by a combination of the services from two agencies—the
FMFD and Lee County EMS (LCEMS). Coordination between the two agencies is
paramount to ensure seamless EMS operations as if the service is provided by one
agency.

The FMFD must be an active participant in future health care planning, especially in
response to changes occurring due to the Affordable Care Act (ACA). At times, the Study
Team got the impression that the staff of the FMFD felt that the Fire Administration
didn’t value their roles in the EMS system and lacked a progressive partnership with
LCEMS. Several comments were made to the Study Team regarding a focus on fire
suppression at the expense of EMS – which is the majority of the calls for service (58%).
The Fire Chief must address these issue since the FMFD’s EMS role in the community is
vital, and has a positive impact on patient care outcomes and the quality of life in the
community. Additionally, FMFD personnel offered that the FMFD has the resources and
expertise to provide a higher level of EMS service to positively affect the health and
safety of the community beyond the services currently provided.

The International Association of Fire Fighters (IAFF), one of the largest unions of the
AFL-CIO, has taken a pro-active position on fire-based EMS delivery. To quote Harold
A. Schaitberger, General President of the IAFF, “Fire department based EMS systems
are—and will continue to be—the frontline responders for medical emergencies in the
pre-hospital environment and the safety net for all citizens without access to primary
care.” In fact, in some U.S. communities, the delivery of EMS services is being returned
to the local fire department after struggling with various models of private sector
involvement.

Many leaders in the fire service at the national level believe the fire departments that
have been involved in the direct delivery of EMS services have also been the fire
departments that have remained the most stable through the difficult up-and-down economic times of the last 20 years. The fire service has truly taken on an “all-hazards” approach to its response capabilities in recent years, and those fire departments that only respond to the report of fire are the fire departments that will continue to have their futures in jeopardy.

A well-staffed, well-trained, and well-equipped fire engine can mean so much more to a community than just a fire response vehicle. If that vehicle is staffed with trained and equipped medical providers, it becomes the neighborhood first-aid unit that helps people with cut hands, broken bones, asthma attacks, and life threatening emergencies.

The staff of these units can also participate in providing preventative and follow up care in the community they serve. In many areas the personnel at local fire stations provide blood pressure screening, install and check child car seats, check for residential pool safety, and engage in other similar programs. Going on an EMS run should not be an inconvenience to the FMFD; it should be an opportunity to aid and interact with the citizens that the department serves. In most communities, the fire department is the community’s safety net, especially when a situation arises that exceeds a citizen’s resources or knowledge of what to do.

Every fire apparatus in the FMFD is much more than a fire response vehicle; it delivers trained EMS providers – quickly – to the doorsteps of individuals in the community with medical or trauma situations requiring care. There are additional opportunities for other health and wellness programs that could be provided by the fire department.

FMFD personnel at the stations mentioned that they take blood pressure readings when someone comes by the station, but that no formal program exists. And, while the department offers the “Vial of Life” program, a review of the 2015 public relations/education report found little concerted effort to offer public EMS education. It is recommended that the Fire Chief explore, with his staff, further opportunities for FMFD EMS trained personnel to formalize an EMS outreach program and to provide these additional services and education opportunities to the community.
THE IDEAL CHAIN OF SURVIVAL EVENTS

In the “ideal” EMS system, the public is educated and aware of when to appropriately call and activate the EMS system. They would also have taken training in what to do before an ambulance arrives. When someone is threatened with a life-threatening medical emergency, such as a heart attack, they would first encounter a family member or bystander who is CPR trained and who also recognizes the signs and symptoms of the medical emergency. The bystander or family member would activate the local EMS system through a 911 call and would initiate basic first aid and CPR care if indicated.

If needed, the Emergency Medical Dispatch (EMD) trained 911 call taker or dispatcher would provide nationally recognized pre-arrival care instructions via telephone while emergency responders were being dispatched. These pre-arrival instructions would continue until the arrival of the trained emergency responders at the emergency scene. The EMD uses a system of priority dispatching that includes call screening so that the closest most appropriate emergency unit(s) is dispatched. Sometimes the closest unit is a piece of fire apparatus staffed with trained emergency care personnel.

Some 911 centers around the country have implemented nurse triage programs to offer an alternative for individuals who call with non-emergent health concerns. They are afforded the opportunity to speak to an Emergency Communications Nurse who can assess their condition and offer alternative solutions for care and transport if it is determined that activation of the EMS system isn’t medically warranted.

In recent years new technology has made it possible to incorporate CPR trained citizens into the chain of survival. A smart phone app called PulsePoint can connect this trained citizen with the victim of sudden cardiac arrest. The app, which is available for free from iTunes and Google Play, can be integrated into the 911 services in a jurisdiction. When the emergency dispatchers receive a call that someone is possibly experiencing a cardiac arrest, they activate an alert via the PulsePoint app to users at the same time they dispatch the appropriate emergency units. PulsePoint, which is in use in 23 Florida communities, is one of several subscription services available to enhance the delivery of the emergency services to the victim’s side.

The alert notifies the app user of emergencies in public places within a quarter mile of their location. They are directed to the patient’s location and the nearest automated...
external defibrillator. They can administer a shock to the heart and hopefully convert the fatal heart rhythm to a rhythm compatible with life prior to arrival of paramedics. There are other similar programs, like AED Link that has been implemented in Louisville KY, that provide for getting AEDs and help to victims of sudden death concurrent with ambulance dispatch.

With Priority Dispatch, the closest first due emergency unit capable of providing the care needed for the situation is dispatched. This could be a fire apparatus, basic life support unit, advanced life support unit or quick response vehicle (QRV) depending on the nature of the call and the system resources.

It is not unusual for citizens to question why fire apparatus is dispatched to medical calls especially when sent at the same time with a basic or advanced life support unit. Fire apparatus dispatch has been the “standard” in most EMS systems dating back to the late 1970s. Many dispatch protocols call for fire apparatus to be dispatched when the incident is:

- Determined to be potentially critical as determined by dispatch screening,
- When the fire unit is the closet emergency unit to an incident,
- When determined that additional personnel may be required for lifting or to expedite care and transport,
- Located in an area where an emergency care unit is not available, and
- When requested by the responding emergency care unit.

Staffing of emergency care units will vary according to the state licensing agency’s requirements for the number of BLS and ALS requirements. NFPA 1710, Standard on Fire Department Deployment and Operations recognizes this and also provides direction for ALS response. The standard in addition to American Heart Association recommendation is that a minimum of two ALS responders and two BLS responders arrive on the scene within the response times established for ALS delivery (within 480 seconds [90% of the time] if BLS with AED arrives within 240 seconds).

The first emergency response personnel to arrive on the scene would be trained at least to the EMT-B (Basic) level and equipped with a first-aid bag, oxygen delivery equipment, and an AED. If the incident is a critical care situation concurrently or within a few minutes, trained paramedics would arrive with advanced life support equipment capable
of providing cardiac monitoring, intravenous medication therapy, and advanced airway management techniques. Using standing medical protocols, the patient would receive a 12-lead electrocardiogram, lifesaving medications, and other cardiac therapies in order to diagnose and treat the medical emergency.

The patient would be stabilized, loaded into a transport unit, and begin a short trip to a definitive care facility capable of handling cardiac emergencies. While enroute to the care facility, if possible, the crew would consult via radio or telephone with emergency care physicians to obtain orders for further pre-hospital interventions. The patient would be transported to the closest hospital that can best manage the specific condition such as heart attack, stroke and trauma. The patient would arrive at the care facility having received appropriate advanced life support care (ALS) within the delivery time criteria established by the American Heart Association and other national specialty organizations.

Patient care would be transferred to the emergency room staff and an accurate and clearly written or electronic transfer report would be provided. The patient care report should have captured the assessment and care provided by any and all providers on the scene. The transfer would be seamless and timely and the care providers would ready their equipment for the next response with minimal delay.

In the emergency department or back at their station, the care providers would finalize any reports and file them using a computer-based data collection system. If more than one patient care report was completed by providers there must be a mechanism to link the reports or consolidate information. The data would be used for billing, state reporting, departmental analysis of service delivery, patient quality assurance and EMS system master planning— in addition to simply documenting the incident.

Finally, a Quality Assurance staff member, following Medical Director Guidelines, would review the care provider’s written report for accuracy and protocol compliance and then send a customer service survey to the patient within 30 days of the incident. Any variances in treatment from established protocols would be referred to the system Medical Director to determine remedial actions.

As stated previously, how all these system components arrive in the time required is really a complex process that varies from community to community throughout the United States. When multiple agencies are required to provide the system components
listed above, inter-agency cooperation and coordination are paramount to successful patient outcome. Should one component fail, then the system fails to provide the best care.

The Seattle/King County EMS system is one of the most recognized, effective fire based EMS programs in the United States. It has the best lifesaving rates among large jurisdictions. It provides first responder services via BLS trained firefighter/EMTs and firefighter paramedic ALS units. Success of the system is credited to the blended fire department ambulance service, strict policy of measuring the performance of the system and strong leadership. It also has to be noted that the area has one of the strongest citizen CPR training programs in the country with a large percent of the population being trained to implement lifesaving CPR in witnessed cardiac arrest situations. Data showed that from 2001 through 2008 the survival from a witnessed cardiac arrest due to heart disease increased from 36% to 49%. The 2014 EMS Annual Report to the Seattle/King County Council reported that the cardiac arrest survival rate reached 62.3%. This is the highest “save” rate documented for pre-hospital EMS. Seattle/King County EMS system is a regional multijurisdictional program. What makes it distinctive from other systems is that it is (a) medically based, (b) regional, and (c) uses tiered out of hospital response.

EMS IN FORT MYERS

The FMFD has been proving some level of EMS since the 1970s and implemented non-transport ALS in 2000. Since the FMFD has ALS firefighter/paramedics, it is considered a first response, basic life support/advanced life support treatment service. Further ALS treatment and transportation of sick or injured patients is provided by the county-wide third-service EMS, Lee County EMS. There is a unique arrangement in which the FMFD provides housing and apparatus space for LCEMS units and personnel in facilities at four FMFD stations.

The Division Chief of Training has responsibility for overseeing the EMS training and first response ALS services provided by FMFD. As mentioned in the chapter on training, this position has the responsibility for a large and significant work load. The Study Team recommends that the Fire Chief request an additional full-time, EMS dedicated staff, to assist the Division Chief of Training with EMS duties and responsibilities. The Division name should also be changed to reflect that one of its major responsibilities is EMS. All
personnel assigned to this Division should be paramedic certified to add credibility to their position in dealing with the medical community and ALS providers.

**COMPARISON OF EMS IN FORT MYERS TO THE “IDEAL CHAIN OF SURVIVAL”**

The first elements of an ideal EMS system are “early recognition, bystander action and system access.” These elements are dependent on effective public education programs targeted at various population groups. In the FMFD, the Community Education–Public Fire Education program provides the Vial of Life program, some CPR training and general information about access and when to use 9-1-1.

It is recommended that the FMFD work more closely with the ongoing efforts in Lee County to participate in community education and prevention programs. This would include the programs for fall and drowning prevention, child care seat safety and even blood pressure monitoring. It is further recommended that the FMFD assess the need for more CPR and AED training in the community. The FMFD must work with the other public safety and health care agencies to develop a culture of action through public awareness and training as recommended in the recently released Institute of Medicine publication on *Strategies to Improve Cardiac Arrest and Survival*.

In Fort Myers, automatic external defibrillators (AED) are available in some public buildings for use by AED trained staff members or security personnel. Fort Myers or Lee County does not utilize PulsePoint or any other program for enhanced utilization of public AEDs. It is recommended that the FMFD take a lead role with the Lee County EMS and Lee County Medical Care Council to research the various programs available to enhance AED utilization in Fort Myers and consider implementing one of the programs outlined above.

EMS calls via 9-1-1 originating in the city go to the Fort Myers Police Communications and are routed to the Lee County Emergency Dispatch Center, also known as "Lee Control". Lee Control dispatches the FMFD and LCEMS units. The call takers utilize the International Academies of Emergency Dispatch (IAED) protocols and process to provide lifesaving instructions to callers on EMS reported incidents.
Fire apparatus is sent when it is the closest unit to the incident, when the closest LCEMS unit is committed and a unit is being dispatched from a more distant location and in critical care situations when it is felt that the additional personnel are needed on the incident to provide effective care. If the fire apparatus is first to arrive on the scene, FMFD personnel are trained and equipped with the resources to begin initial assessment and stabilization of the most critical of patients.

In keeping with national trends and practice, the fire apparatus in FMFD have Emergency Medical Technicians (EMTs) on board and at least one Paramedic is on board any apparatus capable of providing advanced life support treatment until the arrival of the LCEMS unit with additional Paramedic personnel.

Often times, the public and elected officials will question the dispatch and response of the fire apparatus with the ambulances as in the case of FMFD with LCEMS. This is a nationally accepted practice that has been utilized since the inception of modern EMS in the 1960s. This practice has proven beneficial especially in situations when the fire apparatus is closest to the incident, when emergency care units are staffed with only two responders and in critical care situations when time on the scene needs to be minimized. Data should be maintained to continuously evaluate this practice especially to determine which types of calls need additional personnel.

Once LCEMS is on the scene, care of the patient is transferred to their staff with the Paramedics and EMTs from FMFD providing support to the LCEMS unit in accordance to county Medical Protocols. If the patient’s condition is critical or unstable a FMFD paramedic will accompany the LCEMS crew to the hospital. The FMFD apparatus will follow in order to pick up their crew member and go back in service.

Once at the hospital, patient care is transferred to the emergency department staff. The staff from the LCEMS unit completes a patient care report (PCR) to accompany the patient.

To ensure proper transfer of care and documentation of care given, the Medical Directors policy regarding transfer of care from a non-transport to the transporting service, in order to make the transfer of care consistent, effective and timely, requires the following interagency/intra-department measures be followed:
• The non-transport EMT/Paramedic, if first on-scene, should:
  o ensure scene safety,
  o make patient contact,
  o obtain a history of present illness and SAMPLE history,
  o perform a physical exam,
  o provide life and limb saving interventions while preparing the patient for transport, and
  o provide the transport service with a hand-off report.

• When the transport service arrives on-scene, the transporting EMT/Paramedic should:
  o confirm or ensure scene safety,
  o receive a verbal report from the non-transport service while simultaneously making patient contact,
  o confirm or obtain a history of present illness and SAMPLE history,
  o perform a physical exam,
  o continue and/or provide life and limb saving interventions, in concert with the non-transport EMT/Paramedic, while orchestrating and preparing the patient for transport,
  o execute transport while continuing/providing interventions as necessary and indicated, and
  o provide a hand-off report to the Emergency Department staff.

QUALITY ASSURANCE AND MEDICAL DIRECTION

The success of any fire-based EMS program is directly related to strong oversight and participation of the physician (Medical Director) overseeing the program. The Medical Director serves as the medical practitioner who extends the ability to “practice” medicine to the EMTs and Paramedics under his/her direction. The Handbook for Medical Directors states that “One of the most important functions the medical director can perform is to have frequent quality interaction with the agency’s EMS providers.” This is important so that the medical director knows the organization well, is familiar with the performance of the providers, and is able to identify what is needed to ensure optimum performance of all of the providers.
The FMFD ALS practice of their paramedics falls under the Medical Direction of Dr. Joseph Lemmons, D.O. Dr. Lemmons serves as the Physician Medical Director for the Lee County Department of Public Safety, in accordance with Florida Statute 401. He supervises and assumes direct responsibility for the medical performance of the emergency medical technicians and paramedics employed by Lee County Emergency Medical Service, and the non-transport agencies serving under Lee County Public Safety's Certificate of Public Convenience and Necessity (COPCN), which includes the FMFD.

EMS agencies must have a quality improvement component of their quality assurance program. The program should actively involve providers as well as the management and leadership of the agency. With provider involvement there is buy-in to the program. Quality Improvement (QI) programs also need to be focused on how the program can continuously evolve and improve. If there are issues with individual performance the first analysis needs to be how the system needs to be improved to insure high level performance. QI programs should never be punitive unless actions are deliberately negligent. The Study Team noted that LCEMS and FMFD have a defined process of QI.

It was noted that two patient care reports (PCR) are completed for EMS incidents when a LCEMS unit responds with a FMFD unit – one by LCEMS and one by FMFD. LCEMS staff leaves the PCR for the hospital, while the FMFD firefighter/paramedic completes a report when returning to the station. The reports are paired up electronically through the use of Image Trend, which is the records management system (RMS) used by both FMFD and LCEMS.

As a more defined quality assurance program is developed and implemented it is important to build in an annual appraisal of the effectiveness of the EMS program. Data need to be identified that are necessary to perform this analysis. A piece of information that currently is not being captured is “customer satisfaction.” Some jurisdictions, where there is a multi-agency response, have implemented a practice of providing the patient’s family a feedback card. The card generally has the department logo and information on how they could provide feedback; some also contain a public education message. Of course, there must be a phone number or email address where feedback can be provided.

Another way of gathering customer feedback is to mail a short survey (or survey site information) to the patient or family. While skeptics will say that only complaints will be
received, many places where this has been implemented have been pleasantly surprised with the positive feedback they receive and even good suggestions for improving the patient and family experience. The Fire Chief should assign staff to research ways of soliciting customer feedback and develop a process for the FD and especially their EMS to follow. While this provides for continuous improvement of the service, it is also a good marketing practice for the fire department.

**RESPONSE TIME CAPABILITY CRITERIA**

Time is one of the most important factors relating to patient outcomes in emergency medical situations. Rapid delivery of EMS is essential in the acute situation of cardiorespiratory arrest; a measurable factor is the time from heart stoppage and cessation of breathing (clinical death) to when irreversible brain damage begins (biological death). Although the time varies with patients and conditions, the generally recognized intervention time to prevent biological death is four to six minutes. Time is also critical in heart attacks, stroke, and major trauma where time to hospital interval recommendations for emergency crews have been established by the American Heart and Stroke Associations and by trauma surgeons.

**NFPA 1710 Standard**

NFPA 1710 also applies to the provision of EMS services. This Standard includes the following benchmarks related to medical emergencies in regard to call receipt and processing time, turnout time, and response (travel) time:

- Turnout time (time from dispatch to being enroute to an assignment) of 60 seconds for EMS calls;
- The fire department’s EMS basic life support (BLS) resources with automatic defibrillator equipment deployed to provide for the arrival of a BLS unit (EMS first responder or transport unit) within a four-minute travel time; and
- The fire department’s EMS resources providing advanced life support (ALS) service deployed to provide for the arrival of an ALS company within an eight-minute travel time to 90 percent of the incidents.

The LCEMS maintains data on response and on-scene times. The Fire Chief should assign staff to work with LCEMS to capture and maintain response data specific to the
city and city first responder units so that response data can be analyzed to ensure compliance with recognized standards.

The FMFD has not adopted a response time objective for medical emergencies and should consider doing so based upon a protocol that determines the criticality of a dispatched assignment.

CURRENT SERVICE DEMAND ANALYSIS

The EMS units of the FMFD are responding to an ever increasing complexity of medical requests. The continuing education required for EMS providers is ever expanding as medical technologies improve.

Figure 7.1
EMS Incidents (2009-2015)

The reduction in calls from 2011 to 2012 is attributed to the FMFD ceasing response to Alpha and Omega level calls, the most basic of BLS level calls, inter-facility transports, etc.
FUTURE OF EMS

Affordable Care Act – Community Paramedicine

In the current health care economy, the future of EMS is changing. While many felt that physician reluctance to having paramedics treat a patient and release them or refer them to another level of care other than an emergency room was the driving force behind transporting every patient treated, the truth of the matter is that reimbursement models often drove the traditional model of treat and transport. In other words, if paramedics responded to an asthmatic and were able to administer care that negated the need to be transported, EMS had no means of charging and collecting for the services provided.

Discussions have gone on for some time now on the need for changes in paramedic scope of practice to allow for treat and release/refer and subsequent reimbursement. Enter the Patient Protection and Affordable Care Act (ACA) signed into law March 23, 2010, by President Obama.

The ACA created the Accountable Care Organizations (ACOs). ACOs are groups of doctors, hospitals, and other health care providers that coordinate to decrease costs and increase the quality of health care they provided to patients. To accomplish decreased costs, the ACO receives a bundled payment for all services provided for a patient. This includes the ER treatment, diagnostic/radiographic tests, physician payments, hospitalization (if required), and surgical procedures.

This bundle can now include services provided by EMS, as well. If the ACO can provide care for less than the bundled payment amount for that patient, they make a profit. If they do not, they absorb the cost and must seek more efficient ways in which to manage patients.

In addition, under the ACA, hospitals now receive performance-based bonuses or penalties based on two main measures: (1) value-based purchasing (VBP) and (2) readmission rates for specific diagnostic related groups (DRGs), like myocardial infarction, heart failure and pneumonia.
These cost-curbing measures become an opportunity for EMS as it stands today and open the door for mobile integrated health care options that can easily be provided by EMS. Many have termed this service “Community Paramedicine.”

Community Paramedicine is an evolving model of community-based health care in which paramedics function outside their customary emergency response and transport roles in ways that facilitate more appropriate use of emergency care resources and/or enhance access to primary care for medically underserved populations. Community Paramedicine programs typically are designed to address specific local problems and take advantage of locally developed linkages and collaborations between and among EMS and other health care and social service providers and, thus, are varied in nature.

As noted above, interest in Community Paramedicine has substantially grown in recent years based on the belief that it may improve access to and quality of care while also reducing costs. Some of the delivery system problems targeted by Community Paramedicine programs include overuse of the 911 system for social or psychological problems; the need for alternative means to manage patients who do not require transport to a general acute care hospital emergency department; repeat ED visits or hospital readmissions due to gaps in care between hospital and outpatient primary care or specialty management; limited or no capacity for short-notice home visits, especially during off hours; and supplementing primary care shortages in underserved areas.

How can Community Paramedicine add value to the citizens of Fort Myers and have a positive impact on the potentially overburdened EMS system in Fort Myers and the region? The FMFD should be open and explore potential opportunities to become involved with Community Paramedicine projects. For example, specifically assigned paramedics could shift from a sole focus on emergency response to: (1) providing follow-up care for people recently discharged from the hospital to prevent unnecessary readmissions; (2) providing community-based support for people with diabetes, asthma, congestive heart failure, or multiple chronic conditions; and/or (3) partnering with community health workers and primary care providers to address mounting numbers of behavioral-health calls related to substance abuse, psychiatric issues and anxiety.
These three areas could serve to:

1. Generate additional revenue;
2. Reduce health care costs for both the provider and patient and the impact of costly and time-consuming trips to the hospital; and
3. Reduce overall responses to unnecessary EMS calls saving valuable EMS resources for true emergencies.

There are numerous versions of Community Paramedicine being implemented and evaluated in jurisdictions throughout the U.S. Two years ago, in Reno, NV, the Reno Regional EMS Authority (REMSA) received a grant from the Centers for Medicare and Medicaid Services (CMS) to fund three programs: (1) a 24-hour nurse health line, (2) ambulance transport alternatives, and (3) the Community Paramedicine program where community health paramedics focused on reducing frequent non-medically indicated 911 calls, as well as post hospital discharge readmissions. The first year of operations has shown a positive impact by preventing readmission and emergency department visits in significant numbers, which contributed to cost saving in medical payment.

Additionally, partnering with the health care community and ACOs in Fort Myers can serve as a presently untapped revenue resource that could fund these types of units. The exact revenue to be realized, including fee structures and methodologies, are regionally specific. Each ACO and/or healthcare provider establishes their own criteria. Since implementing any form of Community Paramedicine has to be a medical and emergency response community-wide effort, the FMFD cannot develop or pursue a program on its own. The FMFD should actively participate with the health care community and LCEMS to identify health care needs in the community that it can address with fire department resources. In a county where the provision of EMS is managed by numerous independent agencies this will be more challenging, but doable.

Community Paramedicine is the next trending phase of pre-hospital care, similar to the introduction of advanced life support care. The FMFD and the medical community should continue to observe what is going on in other communities and be prepared to take their system to the next level based on identified needs in the Fort Myers community.
EMS TRAINING

Unlike fire, rescue and specialty training, Emergency Medical Services training is clearly defined on a national basis. The National Highway Transportation Safety Administration (NHTSA), Office of EMS for decades has developed and provided resources for the standardization of EMS training across the country. Some of the documents that they have published and disseminated include:

- Education Agenda for the Future: A Systems Approach
- National EMS Core Curriculum
- National EMS Scope of Practice Model
- National EMS Education Standards

To facilitate the development and presentation of standard training programs by the states and training institutions they have also published National EMS Education Standards and Instructional Guidelines. These are available for all defined levels of care from First Responder to Emergency Medical Technician to Paramedic.

The state of Florida has two levels of certification for pre-hospital EMS providers: Emergency Medical Technician (EMT) and Paramedic. To be eligible for Florida certification, an individual must submit an application and show proof of education in one of three ways:

1. Successful completion of training from a course approved by the Florida Department of Health,
2. Certification from another state, territory, or from a military service, or
3. Registration from the National Registry of EMTs.

EMTs and Paramedics have to recertify every two years. In order to be eligible for recertification they have to complete a 30-hour refresher course that includes two hours of pediatric emergencies. The Health Department will accept affirmation from the EMS providers Medical Director or a certificate of refresher training from an approved continuing education provider as proof of meeting the requirements for renewal. An EMT also has to maintain CPR certification, and a Paramedic has to have Advanced Cardiac Life Support (ACLS) certification.
Certification as an EMT is required for hiring in the FMFD. The Fire Chief expressed his interest in hiring additional paramedic certified personnel to allow for more flexibility in staffing units since their goal is to have a paramedic on each piece of apparatus. Hiring individuals who have completed the intensive paramedic training have normally developed learning and communication skills that add to their success in completion of other types of fire and emergency service training. This is an observation not supported by any data. The Study Team feels that an all-paramedic trained uniformed staff is not necessary in a first responder, advanced life support, non-transporting service. Paramedic certification should be considered as a “preference” when hiring, but not an elimination factor.

In order to ensure EMT and Paramedic recertification every two years the Training Division should ensure that they meet the Florida state requirements to be a department approved as a continuing education provider. This will require having the appropriate EMS trainers, as well as record keeping. By having an approved continuing education program in the department, the department eliminates the need for firefighters and officers to have to seek courses outside of the department, possibly incurring an overtime situation for the department.

**SUMMARY**

Fort Myers introduced EMS into its fire department in the 1970s as fire-based EMS was starting to evolve. Today, the FMFD provides fire-based emergency first responder and advanced life support treatment services in cooperation with a third-service EMS agency, Lee County EMS, who provides both treatment and transport. The uniformed staff of the FMFD are cross-trained as EMS providers, with a large number being paramedic trained and certified.

As the FMFD looks at the future, there is room for taking EMS to the next level of performance. When EMS in Fort Myers is compared to what is considered an “ideal” chain of survival, the department has most of the vital components necessary to provide appropriate care in a timely manner when working with the other components of EMS in Lee County. When compared to successful systems like Seattle/King County, they have many similarities. The most glaring differences are in the areas of aggressive citizen CPR training and maintenance of data and measuring of sudden cardiac arrest survival,
considered one of the truest measures of an emergency medical service’s success. These areas need to be addressed to enhance an already good system.

The day-to-day responsibility for EMS in the FMFD is assigned to the Training Division and the Division Chief in that position. The Division Chief of Training handles a large and significant workload. It is recommended that additional staff be secured to help with the many EMS oversight responsibilities associated with response, quality assurance and training for the maintenance of EMS certifications. The name of the Training Division should also be changed to reflect the role the staff has in supervising the EMS program.

The health care system in the United States is going through an evolutionary change and the fire department must poise itself to adjust and adapt to the changes. The Fire Chief must ensure that FMFD is well represented in any discussions at the county level so that FMFD personnel can be more involved with any programs addressing health care issues in the city. The FMFD can take a leading role by researching other programs offered in fire departments in the United States and introducing these concepts in the county. There are several fire-based EMS programs in the United States that can be studied to determine the effectiveness of their programs and what programs may add value to EMS in the Fort Myers community.

**OPTIONS AND RECOMMENDATIONS**

7-1 It is recommended that the Fire Chief explore with his staff further opportunities for FMFD EMS trained personnel to formalize an EMS outreach program and to provide these additional services and education opportunities to the community.

7-2 The FMFD leadership and staff need to work with the other public safety and health care agencies to develop a culture of action through public awareness and training as recommended in the recently released Institute of Medicine publication on *Strategies to Improve Cardiac Arrest and Survival*.

7-3 It is recommended that the FMFD work more closely with the ongoing efforts in Lee County to participate in community education and prevention programs. This would include the programs for fall and drowning prevention, child care seat safety and even blood pressure monitoring. It is further recommended that the FMFD assess the need for more CPR and AED training in the community.
The FMFD should research the various programs available to enhance AED utilization in Fort Myers and consider implementing one of the new smartphone applications to take advantage of the AEDs placed in public buildings in the response area. Utilizing early defibrillation as part of the EMS system can improve the survival rates for out-of-hospital cardiac arrests.

The FMFD staff needs to work with the components of the public health system to develop a mechanism for collecting and monitoring data regarding out-of-hospital cardiac arrests and to work further with LCEMS to establish a process for assessing data on successful resuscitation rates as a measure of determining effectiveness of system and to identify any weaknesses in the chain of survival.

The Fire Chief should assure that data are maintained to continuously evaluate this practice, especially in regards to which types of calls need additional personnel.

The Fire Chief should assign staff to work with LCEMS to capture and maintain response data specific to the city and city first responder units so that response data can be analyzed to ensure compliance with recognized standards.

The Fire Chief should have the requirement for Paramedic certification for hires as a “preferred” prerequisite, but not mandatory.

The Study Team recommends that the Fire Chief request an additional full-time, EMS dedicated staff, to assist the Division Chief of Training with EMS duties and responsibilities.

The Fire Chief should consider a more appropriate name for the Training Division to reflect that of its major responsibilities in EMS.

The Fire Chief should continue to assure that the Training Division meets the Florida State requirements to be a department-approved, continuing education provider by having the appropriate EMS trainers, as well as record keeping.
7-12 The FMFD and medical community should continue to observe what is going on in other communities and be prepared to take their system to the next level based on identified needs in the Fort Myers community.

7-13 The Fire Chief should assign staff to research soliciting customer feedback and develop a process for the FMFD to survey customers of its EMS service.

7-14 The FMFD needs to use the data available from the Image Trend RMS to track EMS deployment, performance and outcomes. Data dashboards should be implemented to monitor ongoing performance to ensure benchmarks and critical task completion.
CHAPTER EIGHT
OPERATIONS AND ISO

This chapter addresses the operational aspects of fire protection and rescue services delivery in the City of Fort Myers. The chapter is divided into several sections that define the fire problem; command and control; standard operating procedures, pre-incident planning; and special operations response services. Several aspects directly related to operations (i.e., Emergency Medical Services [EMS], training, and staffing) are examined in-depth in other chapters of this report.

INTRODUCTION

Rapid decision making on the scene of a fire or rescue emergency is mission critical. Often, there is no time for deliberation or research. Decisions made at the emergency scene may be irreversible, and the consequences of error can be disastrous. Such errors can lead to further property loss, as well as injury or death to civilians and firefighters. As such, command and control; pre-incident planning; training and operating doctrines; and progressive building and fire codes are essential in eliminating failure points. The combinations of all of these elements are essential to fire officers who must make decisions based on limited and rapidly changing information. The fact is all emergency situations are different. In fires involving structures, these differences include:

- The type of fire and its location in the building;
- The building type, its construction and the building code used;
- The interior contents and furnishings of the building;
- The presence of hazardous materials;
- The presence of built-in fire protection and life safety systems; and
- The time of day and weather conditions.

All fire officers and firefighters must be well trained and prepared in order to be successful in handling emergency incidents. If training and preparation is left up to “on-the-job experience,” the cost in property and life loss has the potential to be significant.

There are several key factors needed to ensure that emergency scene operations occur as efficiently, effectively and safely as possible. First, fire and rescue stations must be sufficient in number and geographic distribution in order to allow for the timely arrival of emergency equipment. Second, emergency response apparatus must be adequately staffed
to allow basic tasks to be completed in a timely and effective manner. Third, emergency responders must be properly trained and equipped to handle a wide variety of emergency incident scenarios. Finally, standardized operating procedures are needed to help guide emergency scene decision making in the deployment of basic levels of service.

**THE FIRE PROBLEM**

The term “working fire” is a common term used throughout the United States by fire service personnel to describe a structure fire where fire department resources are expected to engage in some type of fire attack operation in order to mitigate the incident. Unfortunately, the standard definition of a “working fire” is not agreed upon;” the term varies from region to region and, therefore, fire incident data vary as well.

For the purpose of this report, the Study Team defines a “working fire” as any fire incident where fire department personnel must don their personal protective equipment (PPE) and deploy at least one hose line to control and extinguish a structure fire.

Fire stations are strategically located throughout the community to ensure arrival at the scene of a fire during the incipient stages of a structure fire and before flashover occurs. Flashover, the near-simultaneous ignition of all of the directly exposed combustible material in an enclosed area, propels the fire beyond the resources of a single fire company.

Today, fire departments are “all-hazards” response agencies. This country’s domestic first responders are called upon to handle a wide variety of incidents ranging from all types of fires, public assists, heart attacks and car accidents to hazardous material incidents, highly technical rescues, natural disasters and terrorism. In the City of Fort Myers, the fire department has become the lead emergency management agency, as is the case in most local communities. With that said, of all the incidents that fire departments respond to, while less frequent, the working structure fire carries with it perhaps the greatest immediate threat to life and property.

The majority of incidents handled by today’s fire departments are handled with one or two pieces of apparatus and, with the exception of an emergency medical incident, these incidents are handled with a decreased level of urgency. A working structure fire on the
other hand presents a series of urgent matters that must be quickly addressed by responding forces if lives and property are to be saved.

A structure fire requires the response of an adequate number of personnel and equipment; it requires quick and accurate decision making and requires discipline. Missing any of these three key elements, the structure fire may very well be extinguished, but not without significant property loss and risk to the lives of emergency responders and civilians.

Therefore, the Study Team believes that a fire department must be sufficiently staffed, equipped, and prepared for the response to structure fires. Being ready for the structure fire response also ensures that the fire department’s response readiness for all other call types is maintained in a high state of operational readiness.

NATIONAL FIRE DATA

Fire continues to be a serious problem throughout the United States and has been for many years. In general, persons and communities of lower socioeconomic status generally tend to suffer greater occurrences of fire and its related losses. Thus, the workloads of fire departments are generally greater in the lower economic neighborhoods of the United States.

A review of national data indicates the magnitude of the fire problem on a national basis. The following fire data and statistics present a “snapshot” of fire’s impact on the United States in 2014. The National Fire Protection Association reported:

Number of Fires

- Public fire departments responded to 1,298,000 fires in 2014, a 4.7 percent increase from the previous year.
- Of these, 494,000 fires occurred in structures, a slight increase of 1.3 percent.
- Of the structure fires that occurred in 2014, 367,500, or 74 percent, occurred in home structures, which include one- and two-family homes, manufactured homes, and apartments.
- Every 24 seconds, a U.S. fire department responded to a fire somewhere in the nation. A fire occurred in a structure every 64 seconds, and a home fire occurred
every 86 seconds. Fires occurred in highway vehicles at the rate of one every 188 seconds, and an outside-and-other-property fire occurred every 52 seconds.

Civilian Fire Deaths

- In 2014, 3,275 civilians died in fires, an increase of 1.1 percent from the previous year.
- Of these, 2,745, or 84 percent of all fire deaths, occurred in the home, a decrease of 10 deaths from 2013.
- Nationwide, a civilian died in a fire every 2 hours and 41 minutes and a civilian died in a home fire every 3 hours and 12 minutes.
- According to USFA, 91 firefighter-related deaths occurred in 2014.

Civilian Fire Injuries

- Last year, 15,775 civilian fire injuries occurred, a decrease of 0.9 percent from the previous year. Many civilian injuries are not reported to the fire service, and the estimate for civilian injuries may be low.
- Of these, 13,425, or 85 percent of all civilian injuries, occurred in structure fires.
- Home fires were responsible for 11,825 civilian injuries or 75 percent of all civilian injuries in 2014.
- Nationwide, there was a civilian fire injury every 33 minutes and a civilian fire injury in a home fire every 44 minutes.

Property Damage

- An estimated $11.6 billion in property damage occurred as a result of fires in 2014, an increase of 0.7 percent from the previous year.
- Of this, $9.8 billion occurred in structure fires, including $6.8 billion in property loss in home fires.
FLORIDA FIRE PROBLEM

In 2014, the Florida State Fire Marshal reported:
- Florida fire departments responded to a total of 2,639,940 incidents, of which 49,107 were fires.
- Total fire response incidents decreased by 1.08%. However, total dollar loss increased by 14.7%.
- Total non-fire incident response accounted for 2,590,833 calls (2,009,823 were for EMS/rescue).
- The 22,943 residential structure fires accounted for $233,631,934 in property loss.
- One structure fire occurred every 32 minutes and 2 seconds.
- 139 fire deaths were reported, people ages 41 and older account for 74% of Florida’s reported deaths.
- 1016 civilians were injured by fire; residential properties continue to have the greatest number of fire injuries among structure fires.
- 221 structure fire incidents were in high-rise structures.

FORT MYERS FIRE PROBLEM

In 2015, the FMFD reported:
- The department responded to a total of 14,632 incidents.
- Total fire response incidents were 267, a 14% increase over 2104. Total structure fires (Code 111) were 47, a 42% increase over 2014.
- Rescue and EMS incidents accounted for 8,488 calls.
- Fire incidents accounted for an estimated $1,421,219 in property loss.

Figure 8.1 shows the FMFD total annual emergency calls from 2006 through 2015. Figure 8.2 shows the total annual property loss from fires in the City of Fort Myers during the same period.
Figure 8.1
FMFD Total Emergency Calls for Service (2006 to 2015)

Figure 8.2
City of Fort Myers Total Property Loss from Fires (2006 – 2015)
As indicated in Figures 8.1 and 8.2, over the last 10 years, FMFD averages 15,000 calls for service and has an estimated fire loss of $1,500,000 annually. Although both calls for service and property loss fluctuate over the years, the numbers for 2015 show a typical (average) year for FMFD.

**INSURANCE SERVICES OFFICE (ISO) RATING**

The Insurance Services Office (ISO) is a private organization that provides a variety of services to the insurance industry in the United States. One of ISO’s services involves the assessment and rating of fire department performance, a service that is well-known among fire chiefs and municipal officials. Representatives from ISO use their agency’s Fire Suppression Rating Schedule to evaluate the performance of a fire department in an effort to help establish a basic guideline for insurance firms underwriting fire insurance policies in the community that a fire department protects.

**ISO Fire Suppression Rating Schedule**

The ISO Fire Protection Rating Schedule (Schedule) “rates” a community’s fire department based on three major fire protection factors: (1) how well the fire department receives alarms and dispatches its firefighting resources; (2) the number of engine and ladder companies and trained personnel the community needs to fight a fire; and (3) the community’s available water supply and distribution system.

Once an assessment is completed, the measurement results are converted into a Public Protection Classification (PPC) number on a relative scale from 1 to 10, with Class 10 representing less than the minimum recognized level of protection and Class 1 representing the highest level. Few fire departments achieve a Class 1 rating and a Class 10 rating is treated as if no fire department exists. Figure 8.3 illustrates the ISO classifications for fire departments across the country.
It is important to note that the Schedule is a fire insurance rating tool and is not intended to analyze all aspects of a comprehensive public fire protection program. ISO advises that the Schedule should not be used for anything other than insurance rating. In addition, an ISO rating is not something that is done on a frequent basis. Once a fire department is evaluated and assigned a classification that rating will remain in place until the next evaluation.

FMFD completed its last ISO rating process in April 2016 and was upgraded from a Class 4 to a Class 2, a significant upgrade and something FMFD should be very proud of. However, FMFD must realize it was on the lower end of the Class 2 rating scale (80.00 – 89.99) with a rating of 83.36 and changes in staffing or deployment of resources could easily drop FMFD into a Class 3 or even back to a Class 4.

Although the Schedule is not intended to analyze all aspects of a comprehensive public fire protection program, it still can be a valuable tool to evaluate department operations, Emergency Dispatch/Communications, and the water supply/distribution for the city.
FMFD ISO 2016 Assessment

The Schedule is divided into numerous areas of assessment. While only ISO representatives can conduct an assessment and provide a rating, the Study Team reviewed the results of the April 2016 survey and classification rating in order to identify possible areas of improvement.

Emergency Communications

The ISO Schedule reviews a fire department’s ability to receive notification of a fire emergency and alert its personnel so that a timely response can be made. Items surveyed include the telephone facilities provided for the general public to report fires, the operators on duty at the communications center and the facilities used to dispatch fire department companies to the fire.

For the April 2016 ISO grading assessment, FMFD received 10.00 out of total possible 10.00 points credit. Although full credit was received in the emergency communications area, it is important to maintain this level of operation in the future.

Fire Department Operations

The ISO Schedule evaluates a fire department’s operations in terms of apparatus staffing, engine and ladder companies, the equipment carried on those vehicles, and their response to fires. In addition, this section assesses firefighter training and record keeping.

The Study Team found the greatest area of demerit was in the staffing levels or “Credit for Company Personnel (CCP)”. CCP reviews the average number of existing firefighters and company officers available to respond to a reported first alarm fire in the city. FMFD received only 7.54 of the possible 15 points (roughly 50%) for staffing.

ISO awarded 7.21 out of a possible 10.00 (roughly 72%) for deployment of apparatus. This area examines the number and adequacy of existing engines and ladder-service companies to cover built-up areas of the city. In addition, a full .50 points was deducted for not having a reserve aerial to replace a front line aerial when one is out of service.

Training received 7.4 out of a possible 9 (roughly 83%). On the surface this looks like an acceptable score, but training is synonymous with firefighter safety and FMFD should always strive to meet the maximum score in this area. Pre-fire planning inspections
received the largest deficiency (.12 out of 12 within the training area). The other areas in training were minor (however still important) and included “Facilities and Use”, a minimum of 18 hours per year in structural fire related subject (NFPA 1001), “Company Training”, 16 hours per month in structural fire related subject (NFPA 1001), “Existing Driver and Operator Training”, 12 hours of driver/operator training per year (NFPA 1002 and NFPA 1451), and “Training for Hazardous Materials”, 6 hours per year (NFPA 472). Training in these areas is currently being address to some extent and with a little modification in the current training curriculum could meet or exceed ISO requirements.

**Water Supply**

The final section of the ISO Schedule reviews the water supply system that is available for fire suppression in the community. In the April 2016 report, FMFD received 39.13 out of a possible 40 points, which is an excellent score. Although almost full credit was received in the Water Supply area, it is important to maintain this high standard and current practices moving forward.

**Summary of ISO**

An ISO assessment can be a stressful time for a fire department and a city. However, it is important to remember that the sole purpose of the assessment is for insurance underwriters, not for fire department critics. A Class 2 classification shows a successful fire department that is involved in fire prevention, and is very effective in keeping fire loss to a minimum. Insurance underwriters use the ISO information to determine their risk of loss and, in part, base the rates they charge for property insurance on that risk. A Class 2 rating means a savings over the Class 4 rating to all those that have fire insurance in the city.

The Study Team urges the City of Fort Myers and the FMFD to use the results of ISO’s April 2016 report as an assessment tool, in conjunction with the findings of the Study Team’s report, as a basis from which to begin making additional operational improvements in the department moving forward. As stated before, FMFD must remember they were on the lower end of the Class 2 rating scale, and changes in staffing and/or deployment of resources could easily drop FMFD into a Class 3 or even back to a Class 4.
Furthermore, without an increase to fire department staffing and fire company deployment the Study Team feels that it will be impossible for the city to move up to the Class 1 rating for their next ISO rating evaluation.

**COMMAND AND CONTROL**

Command and Control at emergency and planned events is essential to operational efficiency and effectiveness. Command and Control is the cornerstone for the safety of those on the incident scene, both responders and victims, and assures that incident objectives are planned, thought out, executed and achieved, often times in rapid fashion. To achieve Command and Control, the FMFD uses the Incident Command System (ICS), which is a standardized approach to the command, control, and coordination of emergency response providing a common hierarchy within which responders from multiple agencies can work together effectively.

The Incident Command System (ICS) was initially developed to address problems of inter-agency responses to wildfires in California and Arizona, but is now a component of the National Incident Management System (NIMS). FMFD has adopted ICS in its daily operations and has met the federally mandated training requirements to become NIMS compliant. NIMS compliance is determined by state, territory, tribal nation and local government responses to performance-based “metrics.”

Like ICS, the National Incident Management System (NIMS) is a systematic, proactive approach to guide departments and agencies at all levels of government, non-governmental organizations, and the private sector to work together seamlessly and manage incidents involving all threats and hazards, regardless of cause, size, location, or complexity, in order to reduce loss of life, property and harm to the environment. The NIMS is the essential foundation to the National Preparedness System (NPS) and provides the template for the management of incidents and operations in support of all five National Planning Frameworks, which is vital to the City of Fort Myers during a natural disaster, such as a hurricane strike.

Incidents typically begin and end locally and are managed daily at the lowest possible geographical, organizational, and jurisdictional level. Through the adoption of NIMS by the City of Fort Myers, the city is part of a comprehensive national approach that improves the effectiveness of emergency management and response personnel across the
full spectrum of potential threats and hazards (including natural hazards, terrorist
activities, and other human-caused disasters) regardless of size or complexity.

The FMFD is commended for its use of ICS and the adoption and training certification
that has brought the department into NIMS compliance.

Essential to Command and Control are standard operating procedures (SOPs). According
to the National Fire Protection Association (NFPA), a SOP is “an organizational directive
that establishes a standard course of action.” A comprehensive set of SOPs defines in
significant detail how the department intends to operate.

SOPs are not intended to duplicate technical information or provide step-by-step
instructions for doing the job. The knowledge and skills that personnel need to perform
specific job tasks, manage programs, fight fires, provide medical care, etc., are addressed
in technical protocols and professional training. SOPs, conversely, describe related
considerations: safety, use of supplies, equipment maintenance, duties and rights of
personnel, command structures, coordination with other organizations, reporting
requirements, and so forth. Stated differently, SOPs do not describe how to do the job
(technical skills), they describe the department’s rules for doing the job (procedural
guidance). An example might help to clarify this point:

Operating an emergency vehicle requires both technical skills and procedural guidance.
Some possible components of each are listed below:

**Technical Skills**
- Location of vehicle controls
- How to activate warning systems
- Operation of communications equipment
- Vehicle driving skills—accelerating, braking, turning, etc.
- Parking skills

**Procedural Guidance**
- Use of seat belts
- Official uses of warning system
- Communications protocols
- Procedures at intersections, permissible speeds
- Vehicle placement, traffic cones
SOPs are a vital component of fire service administrative and emergency response operations. Departments cannot operate safely or effectively in modern society without a comprehensive set of SOPs and a management system to develop and maintain them.

According to FEMA FA-197, there are eight steps that are critical in developing SOPs that are effective and relevant:

**Step One:** Develop organizational support for conducting a needs assessment. Support can take many forms, from providing appropriate resources (personnel, time, meeting space, etc.) to demonstrating the commitment of fire and EMS managers to make changes based on the results of the study. The purpose of the needs assessment should be clearly stated and understood by all members of the department.

**Step Two:** Develop a plan of action. Assign responsibilities, divide tasks, and create a realistic schedule. Conducting a thorough needs assessment can be an intense and time-consuming process. Creating a plan of action helps maintain interest, promote accountability, and helps the group stay focused.

**Step Three:** Review current SOPs. Develop familiarity with existing SOPs. Look for previously identified problem areas and inconsistencies among SOPs. Consider potential impacts of the department’s operating environment on existing SOPs.

**Step Four:** Gather information on internal factors affecting SOPs. Examples include other department documents, post-incident analyses, exercises, drills, surveys, and interviews.

**Step Five:** Consider external factors affecting SOPs. The impact of laws, regulations, and standards should be considered here. Information sources may include literature reviews, professional and trade organizations, Federal and state agencies, other departments, accreditation manuals, and the Internet.

**Step Six:** Develop a list of required SOPs based on the needs identified in Steps 4 and 5. Consider the impact of internal and external factors, as well as the operating environment and standard of practice.

**Step Seven:** Analyze existing SOPs based on the information gathered in prior steps. Compare existing SOPs to the list developed in Step 6. Identify areas where new SOPs are needed, or existing ones should be modified or deleted. Realistically prioritize the results in light of department resources. SOPs required by laws or
regulations must receive a high priority, as should those addressing critical health and safety issues.

**Step Eight:** Create a formal needs assessment document. Summarize findings and provide recommendations. Explain priorities and provide a specific rationale for adding, modifying, or deleting SOPs. (e.g., SOP is needed to comply with Federal regulation 29 CFR §1910.120; SOP is needed to address the emerging trend of domestic terrorism, etc.)

Figure 8.4 illustrates a process for SOP assessment, development, implementation and evaluation.
NOTE: SOPs should not be confused with pre-incident plans or “pre-plans,” which describe strategies for emergency response at a specific facility. Pre-plans allow the department to gather information on designated locations, identify potential hazards, and assess site-specific factors discussed later in this chapter. SOPs address general functions like equipment placement and tactical operations, and they are applicable to all emergency incidents, or at least to a specific category or type of emergency situation.

The United States Fire Administration (USFA) (in FA-197) suggests the following areas, at a minimum, be addressed when developing a comprehensive set of SOPs.

OVERVIEW OF SOP TOPIC AREAS
MANAGEMENT AND ADMINISTRATION

General Administration
- Organization
- Facilities
- Emergency Vehicle and Specialized Apparatus
- Equipment and Supplies
- Finance
- Fundraising
- Training, Education and Exercises
- Information Management

Member Health and Assistance Programs
- Medical Screening/Health Assessment
- Health and Wellness Promotion
- Performance Evaluation
- Post-Injury Rehabilitation
- Employee/Member Assistance
- Facility Safety
- Hazard Communication

Organizational Planning and Preparedness
- Strategic/Master Planning
- SOP Development
- Risk Management
- Emergency Operations Planning
- Mutual/Automatic Aid
PREVENTION AND SPECIAL PROGRAMS

Public Information and Education
- Working with the Public
- Working with the Media
- Emergency Public Information
- Public Education
- Public Relations

Building Inspections and Codes Enforcement
- Authorities and Codes
- Design and Plans Review
- Residential Inspections
- Commercial Inspections
- Industrial Inspections
- Code Enforcement
- Record Keeping

Special Programs
- Fire Cause and Arson Investigation
- Hydrant Maintenance
- Other Special Programs

EMERGENCY OPERATIONS

General Emergency Operations
- Operating Emergency Vehicles
- Safety at Emergency Incidents
- Communications
- Command and Control
- Special Operations
- Post-Incident Operations
Fire Suppression
- Fire Suppression Risk Management
- Company Operations
- Tactical/Strategic Guidelines
- Special Facilities/Target Hazards
- Special Fire Suppression Operations

Emergency Medical Response
- EMS Response Risk Management
- Pre-hospital EMS First Response
- Patient Disposition and Transportation
- Management of EMS Operations
- Special EMS Operations

Hazardous Materials Response
- Hazmat Response Risk Management
- First Responder Operations
- Special Hazmat Operations

Technical Rescue
- Technical Rescue Risk Management
- Rescue Operations
- Special Rescue Operations

Disaster Operations
- Organizing for Disaster Operations
- Disaster Operations Risk Management
- Disaster Operations
- Disaster-Specific Guidelines

A full and detailed description of the SOPs suggested in FA-197 can be found in Appendix 8-A at the end of this chapter.

Some fire departments have never developed a formal set of SOPs. In other departments, operating procedures are incomplete, out of date, badly written, poorly understood, or inadequately enforced. The Study Team finds that within the last year FMFD has reviewed and updated all its SOPs dating back to 1987 when the first set of SOPs were
developed. The process included reviewing all the SOPs, updating as needed, eliminating those that were no longer necessary, standardizing the format of the SOPs and adding new SOPs that were deemed necessary and immediate. This project was assigned to the Deputy Chief. When the set of SOPs were completed, they were sent to the FMFD Labor Union for review and comment. The comments (if any) were reviewed and the SOPs were updated, if warranted. Finally, the SOPs were signed off by the Chief of Department and issued.

Once the SOPs met final approval, they were issued to the rank and file. Each member was tasked to read the SOPs and record, in “Target Solutions”, that the SOP was in fact read.

The constantly changing environment in which fire and EMS agencies operate requires that organizations regularly analyze and update their SOPs to meet current needs. To manage this ongoing requirement, managers may find it helpful to appoint a standing group or committee to oversee SOP-related work. This team is given authority and responsibility for gathering information from department members and other sources in identifying, analyzing and writing SOPs that address the department’s needs. Then the draft materials are distributed for peer review and testing. After this is completed and put in final format, it is submitted to the Fire Chief or designee for final approval.

The approach used to implement new or to revise SOPs is critical to their success in helping agencies manage operational risks and enhance the actions of employees. Effective implementation generally involves preparation of a strategy and a plan that is tailored to the requirement as necessary. Elements of the plan should address:

- Notification of members and others with a need to know
- Distribution of copies to potential users
- Placement and maintenance of reference copies
- Methods to identify and quantify training needs
- Training delivery and administration
- Competency testing and certification
- Ongoing performance monitoring and employee support
Without proper implementation, new SOPs may be ineffective, unused or unsafe. Therefore, implementation planning should be a key component in any agency’s approach when creating new SOPs or revising existing ones.

Evaluation, the feedback loop in the SOP management process, is designed to help fire service managers assess the adequacy of new or existing SOPs. The basic methodology is a comparison of operational actions and results with accepted standards or other measurable performance criteria and program objectives. Periodic evaluations provide a structured and ongoing mechanism to manage change in the fire service and community at large. Special evaluations, on the other hand, are studies intended to address a specific change, trends, operational deficiency or opportunity identified by management.

SOPs’ evaluation teams should represent the viewpoints of all affected groups, including individual members and emergency service customers. In addition, mechanisms should be established to gather input from other members of these groups as part of background research. Many different analytical and group decision-making techniques can be used, depending on the requirements of the study.

Given the obvious advantages of well-designed SOPs, the Study Team recommends that the FMFD should evaluate existing SOPs on a regular basis by performing a needs assessment. The evaluation should accurately reflect the department’s mission, organizational environment and regulatory requirements and include a review of the current operating environment, the standard of practice, and specific local needs. Based on the results of this, existing SOPs can be modified or deleted, and new ones added, as necessary.

The study Team also recommends a more formal implementation plan when new and/or revised SOPs are issued to include: notification of members and others with a need to know; distribution of copies to potential users; placement and maintenance of reference copies; methods to identify and quantify training needs; training delivery and administration; competency testing and certification, ongoing performance monitoring and employee support.
PRE-INCIDENT PLANNING

Firefighters must make swift and accurate decisions with little or no time for deliberation or research. Decisions made at the emergency scene may be irreversible and the consequences of error can be disastrous. Pre-incident planning can assist firefighters in making better and more informed decisions, thus helping to eliminate or minimize errors during an emergency.

Traditionally, one major job responsibility for station personnel is to conduct pre-fire planning programs for “target hazards” within their first-due response area. Chief William Clark, in his textbook entitled *Firefighting Principles and Practice*, discusses pre-fire planning in the following manner:

“When a fire department is acquainted with the potential of a fire before it occurs, that department has an advantage over the fire, provided that it makes preparation in keeping with the need shown by the advanced study. It is of little use to identify and isolate firefighting problems if nothing is done to offset them. The elements of a pre-fire plan should not only pinpoint needs but also provide for meeting them. Target hazards and their peculiar features should be identified. The requirements for combating a fire in any of them should be studied and plans should be prepared.”

In the April 2016 ISO report, it was noted that FMFD was lacking in the area of pre-fire planning. Since the report came out, FMFD has made an effort to begin conducting pre-fire plans. The Study Team recommends that FMFD makes it a high priority to integrate a comprehensive pre-fire planning program into its everyday operations.

FMFD has identified 160 target hazards in the city. Each of these target hazards should be given top priority and a pre-fire plan developed for each. It was difficult for the Study Team to determine if these were already completed because the list of the pre-fire plans already conducted were in a different format than the target hazards and were very difficult to cross reference. Moving forward, the two working lists (spreadsheets) should be formatted in a manner to allow easy cross referencing.

The Study Team further recommends that a complete hazard-risk analysis be done for the city regarding “all-hazards” and that the current target hazard pre-planning program be
expanded to include and address all commercial structures, residential properties (as allowed), residential developments, mass gathering venues, marine facilities, beaches, hazardous materials threats and critical infrastructure that pose significant risk and/or are vital to the social, economic or safety of the community.

The pre-planning documents should be kept electronically and readily available on mobile data computers (MDC) for officers to refer to while enroute to the incident and for incident commanders to refer to during the course of incidents. In addition, officers should conduct regular refresher drills and annual site visits to all major target hazards utilizing this material. These annual visits also allow the plans to be updated if something has changed at the site.

SPECIAL OPERATIONS SERVICES

This section includes an overview of fire department special operations services and the process by which these services are delivered in the City of Fort Myers.

Overview of Special Operations Services

In fire service jargon, the term “special operations” generally refers to those services that a fire department provides other than fire and EMS response. The traditional special operations services include hazardous materials (hazmat) response, vehicle extrication service, and technical rescue service. The delivery models for special operations services can vary greatly from community to community across the United States. With the exception of vehicle extrication service, the other special operations services are seldom needed in most communities. Because special operations services are highly technical in nature and require specialized training and equipment, many communities opt not to deliver the services, or they elect to partner with neighboring communities to share resources in either a mutual aid or a regional team format.

When considering the need for special operations services, it is important to remember that when these types of services are needed, there cannot be a delay in response. The common dilemma faced by many communities is “at what cost” does the community wish to support the delivery of fire department special operations services, because the delivery of these services is often expensive both in terms of training time and equipment.
The decision by a fire department or community to initiate any new service must be examined closely in terms of the expected demand for and the costs of delivering the service. The demand and costs must always be compared to the existing available resources in the department’s response region. This comparison is important in order to gather adequate information so that an informed decision on special operations services can be made. For example, it might be more practical for a fire department to train all of its responders to the “awareness” level of trench collapse emergencies and use a neighboring community’s trench rescue team as the primary response agency rather than fund the purchase of expensive trench rescue equipment and train its own trench collapse rescue team.

The regional team approach to the delivery of special operations services continues to be a common approach in suburban communities across the nation.

**Marine Fire and Rescue Watercraft and Fireboat**

A fireboat is a specialized watercraft with pumps and nozzles designed for firefighting, water rescue, hazardous materials control and transportation of firefighting resources to incidents only accessible by water. Modern fireboats are capable of pumping tens of thousands of gallons of water per minute.

Fire rescue boats perform many of the same functions, but do not have the ability to pump water. They are often used to carry firefighters and EMS personnel, with their equipment, to an emergency out on the water, such as a boat accident, emergency medical incident, search and rescue of a boat or victim in the water, etc.

**FMFD Fire Boat and Fire Rescue Boat Services**

FMFD has both a fireboat and a fire rescue boat. They are both docked at the Yacht Basin Area, 1300 Lee Street. The fireboat is a 26 ft. Boston Whaler with dual 200 horsepower outboards and has full firefighting capabilities. The rescue boat is a 24 ft. Boston Whaler with a single 200 horsepower outboard and meets the needs of FMFD as a rescue boat.
Figure 8.5
FMFD Fireboat

FMFD Fire and Rescue Boat Response
When a call for either boat is received the crew from Engine 11 (Station 1) is dispatch the Yacht Basis Area to staff the boat. Engine 12 (Station 2) serves as the back-up. Manning is a minimum of three personnel. Depending on the type and severity of the call a rescue company may be dispatched to assist.

Lee County Marine Emergency Response Team (MERT)
The FMFD, along with several other Lee County fire departments, work closely with the US Coast Guard, Florida Fish and Wildlife, and the various law enforcement agencies throughout Lee County to protect the waterways. The response is an all-hazards response that includes firefighting, medical care, search & rescue, body recovery and hazmat containment.
The Lee County region is divided into 17 different MERT zones. When an emergency happens, Lee County Division of Public Safety dispatches the recommended fire departments based on pre-defined MERT zone recommendations (see Figure 8.6). The City of Fort Myers is assigned to MERT Zones 7, 8, 11 and the fourth zone is called “East of the Franklin Locks.” Fort Myers’ MERT units are available beyond our primary response area for longer duration or large scale events.

To address the interoperability between the different marine units, all fire agencies have common tactical channels on Lee County’s 800 MHz system. All marine units also utilize VHF 21A to communicate with the Coast Guard and law enforcement. The MERT units train together on various types of incidents using a countywide set of operational procedures.

Figure 8.6
MERT Response Zones
Hazardous Materials Response

Over the last few years, international disasters such as those in Yakima Nuclear Power Plant (Japan) and the Deepwater Horizon drilling rig (USA) have re-focused attention on the potential for catastrophic hazardous materials incidents throughout the world. In the 1980s, the concern for prevention of hazardous materials disasters served as impetus for federal legislation to prevent and control releases of hazardous materials and to protect workers involved in hazardous waste site clean-up and emergency response.

On October 17, 1986, President Ronald Reagan signed into law the Superfund Amendment and Re-authorization Act of 1986 (SARA). This legislation truly transformed the delivery of emergency response services and affected almost every jurisdiction throughout the nation. Although SARA is over 25 years old, its impact still affects how emergency responders handle present day hazardous materials incidents, both in terms of response operations and personnel training.

SARA provides for protection of the community under Title III and the protection of the worker under Title I. As a result of the legislation, the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Labor, through the Occupational Safety and Health Administration (OSHA), both adopted regulations that had major impacts on communities’ planning and response to hazardous materials incidents. The regulations impacted communities in a number of ways, but most significantly in the areas of planning, information gathering and retrieval, and emergency response capabilities.

In 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response, OSHA provides the following definitions for the various levels of emergency response capabilities:

- **First Responder—Awareness (FRA).** Individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. Persons trained to the FRA level simply recognize the presence of an emergency involving hazardous material and take action to notify emergency responders.

- **First Responder—Operations (FRO).** Individuals who respond to releases or potential releases of hazardous substances as part of the initial response for the purpose of protecting nearby persons, property, or the environment from the effects of the release. Persons trained to the FRO level meet the FRA requirements.
and are trained to take defensive actions to control or minimize the effects of a hazardous materials release. FROs generally do not take any action that involves touching the hazardous material or its container and they are commonly trained in decontamination operations. The FRO is the “workhorse” of most every fire department in terms of basic response to hazardous materials incidents. More fire department personnel are trained to the FRO level than to any other hazardous materials training level.

- **Hazardous Materials—Technician (HMT).** Individuals who respond to releases or potential releases of hazardous substances for the purpose of stopping the release and mitigating the incident. Persons trained to the HMT level meet the FRO requirements and are trained to take offensive actions to control the release of a hazardous material from its container. HMTs are basically trained to manage leaks involving a wide variety of hazardous materials containers. The HMT is the workhorse of most every hazmat response team. More hazmat team personnel are trained to the HMT level than to any other hazardous materials training level.

- **Hazardous Materials—Specialist (HMS).** Individuals who respond with and provide support to hazardous materials technicians at hazardous materials incidents. Typically, persons trained to the HMS level specialize in certain topic areas either through specialized knowledge or specialized skill. A local or regional hazmat response team may have several “specialists” available to them through a callout or contact roster. For example, a local agricultural chemist might serve as a hazmat team’s pesticide specialist, but he would not respond or operate at an acid.

In the post 9/11 era, most hazmat response teams have been tasked with accepting the new role of weapons of mass destruction (WMD) response in addition to their regular hazmat response duties. When looking to identify who would fit the need for WMD response, the local hazmat team was the natural choice given their training in chemical protective clothing and their management of chemical releases. These additional WMD responsibilities were further reinforced by the anthrax events that followed September 11, 2001, when hazmat teams across the nation found themselves responding to potential biological agent emergencies.

Today, a local hazmat team is faced with a myriad of complex issues. The hazmat response field has grown tremendously over the last three decades, from responding to oil spills along the highways in the 1980s to being prepared for chemical, biological, nuclear and terrorist events today.
**Hazardous Materials Response in Florida**

The Florida Department of Environmental Protection (FDEP) is the lead agency for environmental management and stewardship. FDEP protects, conserves and manages Florida’s natural resources and enforces the state’s environmental laws. The Department’s regulatory priorities include managing hazardous waste and cleanups.

The FDEP’s Office of Emergency Response (OER) responds to environmental pollution threats in every form. Responding to incidents involving petroleum spills caused by vehicle accidents to chemical plant explosions to coastal oil spills, OER provides technical and onsite assistance to ensure threats to the environment and human safety are quickly and effectively addressed.

The Environmental Response Team (ERT) is a FDEP founded team whose members are from different state and county organizations from around the State of Florida. ERT provides technical assistance, as well as investigative and forensic sampling support at an event in which an environmental pollution incident or public health threat has occurred. The ERT has the ability to have at least a partial team on-scene in no more than two hours of the request for assistance with the full team on-scene within eight hours.

**FMFD Hazardous Materials Response**

The FMFD Hazardous Material Team (HMT) provides support and technical assistance to manage and mitigate hazardous materials emergencies, not only in the City of Fort Myers, but for the county and the State of Florida Region 6. The FMFD tries to maintain 40 HMT members. They are assigned to various shifts (A, B or C) and fire stations. Each HMT member is trained to the Hazardous Materials Technician level. The rest of the FMFD is trained to the First Responder – Operational level.

Figure 8.7 illustrates a FMFD tow vehicle and trailer utilized by the hazmat team in response to hazardous materials related incidents. A tow vehicle and equipment/supply carrying trailer are housed at Fire Station 4 and 5.
For a hazardous material incident within the City of Fort Meyer, the Incident Commander (IC) will secure and evaluate the scene. If the IC determines the incident is not minor in nature and/or requires protective equipment beyond normal firefighter equipment the HMT Leader (or assistant) will be requested to the scene. If it is then determined that the FMFD HMT needs to be activated a minimum of 1 Team Leader and 7 HMT, Engine 14, Haz Mat 15 and Decon 14 will be dispatched to the scene. The HMT Leader can request additional HMT members and/or equipment as the incident escalates or dictates.

For mutual aid requests outside the City of Fort Meyers, the Battalion Chief is contacted and will organize a response from on-duty personnel. If there is not 1 Team Leader and 7 HMT members on duty, the remainder will be called in from a list of off-duty personnel. Engine 14, Haz Mat 15 and Decon 14 will respond to the request.

The Study Team found the FMFD hazardous material response efforts to be well organized and managed. The Study Team finds that the hazmat response services provided by FMFD HMT meet the demands of the city. While there are several facilities/sites that use and store significant quantities of hazardous materials within the city, there is no current or immediate future need for an increase in the level of hazmat response services already being provided.
The Study Team finds that the level of demand for hazmat response services in the City of Fort Myers comparable to other communities similar in size and composition located throughout the southeast. Because the HMT is cross-staffed by on-duty personnel assigned to other fire apparatus, the process of HMT deployment can be seen as cumbersome. It is however, an acceptable approach given the types and frequencies of hazardous materials incidents within the City of Fort Myers. In addition, the county pays the City $110,000 per year for the services of the team. The money is used for training and call back and helps to reduce the cost to the city.

What the Study Teams finds interesting is that the FMFD provides the county and state with hazardous material response and that the county does not use a regional approach as seen around the country. This sole style approach could place a burden on FMFD resources when it is committed to send on-duty personnel and equipment out of the city. However, it seems to work for FMFD and the county and allows FMFD to have its own in-house highly trained HMTs at its disposal.

**FMFD Technical Rescue Team**

The FMFD standalone Technical Rescue Team (TRT) has been eliminated. To fill the void all Technical Rescue responsibilities have been assigned to the HMT essentially forming a Special Operations Team. When the TRT was disbanded all TRT members were given the opportunity to take the 160 hour Hazardous Material Technician program and join the department’s HMT. In the city, the HMT acts as a special operation team and does both functions. To be proficient in both disciplines technical rescue training is incorporated with the team’s hazardous material training. It is important that, at the very least, the minimum training standards for each discipline (hazardous material and technical rescue) are being met on an annual basis.

TRTs are specialized in five basic training disciplines of technical rescue:

1. **Confined Space Rescue** — any situation involving the removal of a victim or victims from an area where the failure to use a respirator may cause the rescuers to be overcome by oxygen deficient or toxic atmospheres.

2. **High Angle Rescue** — any emergency involving the removal of victims from an area above the normal working height of an aerial device. Any rescue operation
involving the removal of victims from any height utilizing rope as a lowering device.

3. **Trench Rescue** — the removal of a victim or victims from a collapsed narrow excavation made below the ground where the depth is greater than the width.

4. **Specialized Extrication** — any situation that may require the use of specialized rescue equipment, or personnel with advanced training to effect the rescue of entrapped victims at an emergency incident.

5. **Structural Collapse** — the removal of heavily trapped victims from collapsed structures.

**Dive Team Operations**

FMFD does not have a dive team and practices surface water rescue only. All dive team services are provided primarily by neighboring Cape Corral Fire Department with the Sheriff’s Department used as a back-up if they are unavailable. Based on the limited amount of time a dive team may be needed, the Study Teams believes this an appropriate way to provide for this type of need.

**Summary of Special Operations**

In addition to the traditional fire and EMS services delivery, fire departments also provide a wide variety of other specialized services that are seldom needed, but really make a difference when used. The decision by a fire department to be in the special operations services business must be a decision that is well thought out and based upon a real need, not a perceived need presented by a few personnel who want to start a new program to satisfy their interests. When faced with limited resources and expanding calls for service from the community, a fire department should carefully select the services it provides. Often times a joint effort approach by several neighboring departments is a more efficient use of resources to accomplish the same task.
OPTIONS AND RECOMMENDATIONS

8-1 The City of Fort Myers and the FMFD should use ISO’s April 2016 results as an assessment tool, in conjunction with the findings of the Study Team’s report, as a basis from which to begin making additional operational improvements moving forward.

8-2 FMFD should evaluate existing SOPs on a regular basis by performing a needs assessment. The evaluation should include a review of the current operating environment, the standard of practice, and specific local needs. Based on the results of this, existing SOPs can be modified or deleted, and new ones added, as necessary.

8-3 FMFD should develop a more formal implementation plan when new and/or revised SOPs are issued to include: notification of members and others with a need to know; distribution of copies (electronic or hard copy) to potential users; placement and maintenance of reference copies; methods to identify and quantify training needs; training delivery and administration; competency testing and certification, ongoing performance monitoring and employee support.

8-4 FMFD should conduct a complete hazard-risk analysis for the city regarding “all-hazards” and that the current target hazard pre-planning program be expanded to include and address all commercial structures, residential properties (as allowed), residential developments, mass gathering venues, marine facilities, beaches, hazardous materials threats and critical infrastructure that pose significant risk and/or are vital to the social, economic or safety of the community.

8-5 All pre-planning documents should continue to be kept electronically and readily available on mobile data computers (MDC). Responding companies should be required to refer to these while enroute to the incident. Incident Commanders should have access to the pre-fire plans on the fireground and use these as a tool during the course of an incident.

8-6 FMFD members should review all pre-fire plans on a regular basis, conduct regular refresher drills and visit all major target hazards utilizing this material on
an annual basis. These annual visits should also be used to update the existing pre-fire plan to reflect and changes if warranted.

8-7 FMFD is encouraged to closely examine all special operations services to determine the demands for service and how to meet these demands moving forward, to include examining further regional partnerships.

8-8 Now that the HMT and the TRT are operating as a Special Operation team it is important that the standard level of training for both disciplines is being met and documented.
APPENDIX 8-A

This appendix presents a detailed categorization system and content descriptions for topic areas of fire service standard operating procedures, in an outline format. The list expands on the Overview of SOP Topic Areas discussed in this chapter. It is intended to serve as a starting point for fire departments and other emergency services organizations that are developing or reviewing SOPs. However, different categorization systems are possible, so departments should tailor the information to their own unique operational needs, organizational structure, and management preferences.

The SOP framework presented here is organized into three broad areas: Management and Administration, Prevention and Special Programs, and Emergency Operations. Emergency Operations is subdivided into General Emergency Operations and five common fire service operational missions: Fire Suppression, Emergency Medical Response, Hazardous Materials Response, Technical Rescue, and Disaster Operations. The intention is to describe SOP requirements that are similar for all operational missions under General Emergency Operations, and mission specific requirements in the appropriate category. This approach minimizes redundancy and reflects common organizational and administrative patterns. However, some duplication is necessary when SOP categories are appropriate for two or more functional areas (e.g., Personal Protective Equipment), but the content of the categories differs (e.g., firefighting turnout gear versus PPE used in emergency medical care).

MANAGEMENT AND ADMINISTRATION

GENERAL ADMINISTRATION—Procedures related to activities that maintain and support the organization, including financial management, resource management, information processing, and maintenance and development of the organizational infrastructure.

- Organization—Establishment of the organization, mission statement, policy on SOPs, chain of command, code of ethics, drug-free workplace, inter-department communications.
- Facilities—Non-smoking areas, telephones and usage, sleeping facilities, apparatus bay doors, portable fire extinguishers, smoke and carbon monoxide
detectors, storage and use of fuels, facility maintenance and repairs, facility security, public access policy, workplace violence.

- Equipment and Supplies—Personal protective equipment, small tools and equipment, power tools and equipment, SCBA maintenance, hose testing and maintenance, inventory control procedures, ropes and harnesses, communications equipment, public use requests.
- Finance—Budgeting, procurement and purchasing, out-of-town travel, expense reimbursement.
- Fundraising—Income-producing activities, public solicitations, grant applications, special requirements and activities, managing donations.
- Training, Education, and Exercises—In-service training (initial and refresher), live fire training exercises, training evaluation, certification, requests for training, training records, inter-organizational/community exercises.
- Information Management—Incident reporting system, record-keeping systems, confidentiality and access to information, use of computer equipment, archiving information.

MEMBER HEALTH AND ASSISTANCE PROGRAMS—Procedures affecting member health, fitness, and performance, to include assessment, enhancement, and enforcement activities.

- Medical Screening/Health Assessment—Fire department physician, baseline/entry and annual examinations, post-injury/exposure examinations, exercise screening/stress tests, vaccinations, medical/exposure records.
- Health and Wellness Promotion—Fitness assessment, fitness conditioning programs, healthy lifestyles.
- Post-Injury Rehabilitation—Post-traumatic incident debriefing, occupational therapy, work hardening programs, disability/job assessment, ergonomics/job engineering, reassignment options.
- Employee/Member Assistance—Substance abuse cessation, critical incident stress management, professional development, family relations, legal and financial services, mental health services.
- Facility Safety—Code requirements, basic safety standards, personal behavior and hygiene, food preparation safety, infection control in stations (cleaning, disinfecting, storage, etc.), facility maintenance and repairs, station safety and health inspections and enforcement.

- Hazard Communication—Employee right-to-know requirements, employee participation, maintenance and access to safety information, employee notification and training.

**ORGANIZATIONAL PLANNING AND PREPAREDNESS**—Procedures affecting organizational analysis and planning systems for management, administration, and emergency operations.

- Strategic/Master Planning—Inter-organizational coordination and planning, organizational planning (long-term and short-term), administrative systems, organizational evaluation.

- SOP Development—Committee organization, schedule, needs assessment process, development process, approval, distribution, implementation, evaluation.


- Emergency Operations Planning—Community right to know, general operations planning, facility and operational preplanning (fire suppression, emergency medical response, hazardous materials response, technical rescue, disaster operations), resource classification.

- Mutual/Automatic Aid—Requirements for outside aid, resource lists, interjurisdictional unified command, evaluating aid agreements.

**PREVENTION AND SPECIAL PROGRAMS**

**PUBLIC INFORMATION AND EDUCATION**—Procedures to promote awareness of hazards, provide emergency information, encourage prevention, and foster good will and support in the community.

- Working with the Public—Special populations, use of information technology, distribution and dissemination channels, personal and professional behavior.

- Working with the Media—Media rights and responsibilities, personal and
professional behavior, using print and broadcast media (interviews, briefings, news releases, media events, advertising, etc.).

- Emergency Public Information—Rights of privacy and public safety, media access to incident scenes/entry zones, media staging or information center, incident information flow, legal issues.
- Public Education—Program goals and objectives, use of department and community resources, conducting programs and activities, evaluating program accomplishments.
- Public Relations—Customer service strategies, building/maintaining departmental image, dealing with citizen complaints, member contacts with municipal/elected officials and media representatives.

Building Inspections and Code Enforcement—Procedures for evaluating and enforcing safety in buildings and commercial operations.

- Authorities and Codes—References to applicable government regulations and policies, community plans and zoning ordinances, codes and standards in force locally (buildings, construction, fire prevention, employee safety and accident prevention, hazardous materials, health, etc.).
- Design and Plans Review—Working with business/facility owners and managers, review teams, review processes, approval processes, notification procedures, documentation and reporting.
- Residential Inspections—Working with homeowners, scheduling inspections, conducting inspections, documentation and reporting.
- Commercial Inspections—Working with business owners, scheduling inspections, conducting inspections, documentation and reporting, coordinating company and prevention division inspections.
- Industrial Inspections—Working with industry, scheduling inspections, conducting inspections, documentation and reporting, coordinating company/hazmat and prevention division inspections.
- Code Enforcement—Project monitoring, inspection follow up, negotiations, sanctions.
- Record Keeping—Documentation and reporting systems, information dissemination, archiving.
Special Programs

- Fire Cause and Arson Investigation—Procedures for investigating fires, which may include arson detection, cause and origin detection, and evidence collection and preservation.
- Hydrant Maintenance—Programs and procedures for inspecting and maintaining hydrants.
- Other Special Programs—Guidelines for other special programs conducted by the department to support management, administration, or emergency operations.

EMERGENCY OPERATIONS

OPERATING EMERGENCY VEHICLES—Procedures for the safe and effective operation of emergency vehicles and special apparatus, including fire engines, ambulances, trucks, tankers and other fleet vehicles.

- Driving Emergency Vehicles—Driver qualifications, skills maintenance, driver behavior, use of warning devices, roadway operations (traffic laws, intersections, speed, passing, following other vehicles), backing up, parking, operation in high-risk areas.
- Riding Emergency Vehicles—Permitted vehicle occupants, passenger behavior, safety in emergency vehicles, reporting safety problems and violations.
- Operating Special Apparatus—Operator qualifications, operator behavior, placement and operation of special apparatus, safety in special apparatus operations, operation in high-risk areas.
- Vehicle Accident Reporting and Investigation—Accident scene procedures (information gathering, injury assessment, notification, etc.), reporting forms and documentation requirements, post-accident investigation (examination of scene, interviews with participants and witnesses, etc.), report preparation and dissemination.
- Use of Personal Vehicles—Driver behavior, roadway operations, permitted vehicle occupants, reporting safety problems and violations.

SAFETY AT EMERGENCY INCIDENTS—General procedures outlining safety considerations for agency personnel at various types of emergency incidents.

- Applicable Standards—Authorities recognized by the department as defining
safe work practices in emergency response (e.g., OSHA/EPA regulations, state and local regulations, NFPA 1500, and other professional association or consensus safety standards).

- Risk Management Guidelines—General guidelines for identifying hazards and minimizing risk in emergency response, including, for example, emergency responder qualifications, standard safety guidelines, use of pre-plans, initial evaluation of risk, development of site safety plans, assignment of safety personnel, control of scene access, regular reevaluation of conditions, etc.

- Safety Officer—Authority and responsibilities of the Incident Safety Officer and the Health and Safety Officer, incident scene safety management procedures, post-incident follow up, reporting and documentation.

- Protective Clothing and Equipment—General procedures for selecting, using, maintaining, inspecting, fit testing, decontaminating, and disposing of personal protective clothing and equipment, such as PASS Devices, SCBA, HEPA Mask Respiratory Protection, etc.

- Personnel Accountability System—Supervisor responsibilities, member responsibilities, incident arrival procedures, personnel tracking and inventory procedures, maintenance of supplies.

- Responder Exposure Control—Personal hygiene, use of PPE/barrier protection, incident operations, incident recovery (disposal, cleaning, decontamination, storage, etc.), post-exposure procedures.


- Operating in a Hostile Environment—Assessing hostile environments, dealing with potentially violent persons, identifying civil disturbance situations and terrorism incidents, interaction with law enforcement, delaying or suspending operations, modifying operations, resuming normal operations.

- Operating on Roadways—Operations near moving traffic, traffic control, use of warning devices, vehicle/scene stabilization, coordination with law enforcement personnel, standard procedures and precautions, special situations (e.g., downed power lines).

- Incident Scene Rehabilitation—Rehab officer functions, monitoring responders’ emotional and physical condition, rotation of personnel, requesting relief, rehabilitation area and supplies, food and fluid replenishment.
• Medical Support—Systems to provide medical care for injured responders: supplies, treatment area, medical evaluation and treatment, post-incident follow-up.
• Incident Termination—Operational debriefing/defusing, release of information, releasing the scene to another party (owner, police, hazmat cleanup crew, etc.).

COMMUNICATIONS—General procedures governing communications during emergency incidents.
• System Access—Activities that provide the community access to the emergency response system, including call receipt, call routing, call processing, and instructions given over the telephone to callers.
• Definition of Alarms/Dispatch Protocols—Procedures and protocols for assigning and dispatching units to specific types of emergencies or to escalating emergencies.
• General Procedures—General procedures and protocols for communications among dispatch and field personnel in emergency and non-emergency incidents.
• Emergency Signals—Initiation of emergency signals, radio signals, other warning signals, personnel actions.
• Alternate Radio Frequencies—The use of alternate radio frequencies on major incidents or incidents where the Incident Command/Incident Management System has been activated.
• Mobile Computer Terminals (MCTs)—Procedures outlining the use of Mobile Computer Terminals (MCTs) on fire and emergency apparatus, as well as in-station dispatch terminals.
• Mutual Aid Communication—Procedures for communicating with units and personnel from other jurisdictions on mutual aid responses.
• Situation/Status Reports—Procedures describing when and how to complete situation/status reports for major emergency and non-emergency incidents.

COMMAND AND CONTROL—General procedures directing use of the Incident Command/Incident Management System and controlling inter-agency coordination.
• Incident Command/Incident Management System—General description of the Incident Command/Incident Management System, including organizational structure, assignments, activation, general procedures, etc.
• Mutual/Automatic Aid—Resources available for different types of emergencies,
requesting or responding to requests for aid, interacting with mutual/automatic aid agencies, documentation and reporting, cost/resource recovery.

- Incident Scene Management—General procedures for activating the Incident Command/Incident Management System, ICS/EOC interface, designating an Incident Safety Officer, organizing the scene, use of control zones, placing resources, supervising personnel, controlling access, controlling bystanders and crowds, coordinating with other agencies, etc.

- Staging—Procedures for staging units and apparatus at emergency scenes, which may include specific procedures for staging and the designation and use of staging officers.

- Transferring Command—Process for transferring command once established on an emergency scene.

- Public Information—Duties and procedures of the Public Information Officer and other personnel at emergency incidents, dealing with relatives/family liaison.

- Record Keeping—Records and information that must be maintained when activating or terminating the Incident Command/Incident Management System.

SPECIAL OPERATIONS—Procedures for special emergency response operations and situations.

- Aircraft Operations—Procedures for using department-owned aircraft in emergency operations: qualifications of personnel, care and maintenance of aircraft, requests for air support, operating aircraft, use of special equipment.

- Boat and Watercraft Operations—Procedures detailing operation of agency boats and watercraft: qualifications of personnel, care and maintenance of watercraft, requests for watercraft support, operating watercraft, use of special equipment.

- Special Unit Operations—Procedures explaining operation of any specialty unit within an agency, such as bicycle teams, all-terrain vehicles, snowmobiles, etc.

- Bomb/Hazardous Device Threats or Confirmed Incidents—Procedures for bomb threat incidents: agency responsibilities, mutual aid assistance, points of contact, bomb squad response protocols, evacuation of civilians, hoax procedures (phone threats), communication policy, preservation of evidence.

- Terrorism Incidents—Procedures for terrorism incidents: agency responsibilities, mutual aid assistance, points of contact, general response protocols,
task force operations, secondary devices, mass decontamination of casualties and emergency responders, mass evacuations, preservation of evidence.

- Civil Disturbances—Procedures for operations during civil disturbances: protection of responders, initiating and suspending operations, use of staging areas, task force operations, police escort procedures, interaction with law enforcement and emergency management agencies.

POST-INCIDENT OPERATIONS — Procedures for activities after incidents designed to assess and document actions, restore capabilities, address problems, and improve future results.

- Post-Incident Analysis—Methods for identifying lessons learned and potential corrective actions following response to an emergency incident: incidents to be reviewed/analyzed, participants and roles, format for gathering information, format for conducting analyses, standardized action plan, mechanism for reporting results.

- Post-Incident Recovery—Activities designed to restore the department’s response capability after an incident, including consideration of staffing assignments, equipment replacement, and cost recovery.

- Incident Record Keeping and Reporting—Completion of standard incident documentation, preparation and submission of special incident reports, incident review process, incident follow-up procedures.

- Injury/Exposure Reporting and Investigation—Accident and injury reports, exposure reports, death reports, maintenance of the health data base system, identification of injury/exposure trends and problems, liaison with the community’s health care system, member notification and testing, confidentiality of personal health records, exposure/injury follow up.

- Critical Incident Stress Debriefing/Defusing—Situations that indicate a need for CISM, identifying individuals needing CISM, procedures for notifying a qualified debriefing team, conducting a defusing, post-incident follow up.

FIRE SUPPRESSION RISK MANAGEMENT—Procedures designed to minimize risk to responders and implement aspects of the department’s health and safety program at fire suppression incidents.

- Required Use of Personal Protective Equipment (PPE)—Use of turnout gear, SCBA, PASS devices/alarms, and other equipment at fire suppression incidents.
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- Rapid Intervention Teams—Procedures for deploying intervention teams during incidents: availability, proper uses, activation, proper uses, standard practices, special situations.
- Evacuation (Firefighters)—Evacuating responders from dangerous structures or areas: determining dangerous conditions, activation signal, procedures for evacuation, accounting for personnel, return to normal operations.
- Air Monitoring—Monitoring carbon monoxide (CO) levels during overhaul, equipment and uses, removal of SCBA.

COMPANY OPERATIONS—Procedures covering activities related to specific company operations.
- Incident Staffing—Number and types of personnel, capability, personal protective equipment, etc. for different types of fire suppression incidents.
- Water Supply—Acquiring and maintaining water supply at fire operations.
- Tanker/Tender Operations—Use of tankers/tenders at fire scenes.
- First-In Engine Operations—Duties and functions of the first-in engine company at a fire scene.
- Second-In Engine Operations—Duties and functions of the second-in engine company at a fire scene.
- Truck Company Operations—Duties and responsibilities of the truck company at a fire or other emergency scene.
- Special Units—Duties and responsibilities of units needed to perform special functions, such as rescue units, cascade systems, lighting units, and grass-fire units.

TACTICAL/STRATEGIC GUIDELINES — Procedures that guide fire and emergency personnel in remediation of fire suppression incidents.
- Incident Size-Up—Conducting incident size-up upon arrival on the emergency scene.
- Automatic Alarms—Responding to and dealing with automatic alarms.
- Offensive and Defensive Operations—Agency operations at emergency scenes, including offensive fire attacks, defensive operations, and how to determine which approach will be taken.
- Apparatus Placement—Placement of apparatus on an emergency scene to ensure safety and effective emergency operations.
• Forcible Entry/Gaining Access—Forcible entry activities, to include lockouts of residences and automobiles and use of lock and/or Knox boxes in emergency and non-emergency situations.

• Foam Operations—Use of foam on emergency incidents, including when and how to apply foam.

• Ventilation—Conducting safe and effective ventilation operations.

• Hot/Cold Weather Operations—Operating in hot and cold weather or winter environments.

• Sprinkler/Standpipe Operations—Using standpipes and operating in buildings and residences with sprinkler systems.

• Apartment/Condominium Operations—Operations in apartment buildings or condominiums.

• Commercial Building Operations—Operations in commercial buildings.

• Salvage—Conducting salvage operations at a fire scene.

• Overhaul—Conducting overhaul operations at a fire scene, which may include procedures for evidence and crime scene protection.

• Exposures—Checking and protecting exposures and minimizing exposure risk.

SPECIAL FACILITIES/TARGET HAZARDS—Procedures for response to and operations at special structures or hazards.

• High Rise Operations—Responding to and operating at emergency incidents in high rise buildings.

• Clandestine Drug Labs—Responding to an emergency involving a known or suspected clandestine drug lab, which may include safety factors, law enforcement coordination and evidence preservation.

• Correction Facility Operations—Operating at emergency incidents in correctional facilities which may involve safety for personnel, law enforcement coordination and escorts for personnel.

• Industrial Facilities—Operations at industrial facilities that may involve hazardous materials, large buildings, warehouses, and dangerous machines; includes interfacing with industrial fire brigades or fire departments.

• Other Special Structures—Fire suppression operations at any other special structures (arenas, stadiums, historically relevant structures, airports, schools, market places, etc.).
SPECIAL FIRE SUPPRESSION OPERATIONS—Procedures covering special fire suppression response situations and operations.

- Aircraft Firefighting Operations—Responding to and operating at fire suppression incidents involving aircraft.
- Special Unit Operations—Deployment of special units in fire suppression operations.
- Wildfire Operations—Response to wildfire emergencies.

EMERGENCY MEDICAL RESPONSE RISK MANAGEMENT — Procedures designed to minimize risk to responders and implement aspects of the department’s health and safety program at emergency medical incidents.

- Incident Infection Control—Applicable regulations and standards, rights of patients and responders, personal hygiene and behavior, responder health issues, preparation for response standard, protective measures, special situations, compliance monitoring.
- Protective Clothing and Equipment—Selection, use, and disposal of specialized emergency medical protective clothing and equipment (gloves, masks, protective eyewear, gowns, resuscitation equipment, etc.) based upon specific situations.
- Lifting/Moving Patients—Proper lifting dynamics, proper use of stretchers, special situations (stairways, elevators, etc.).
- Hostile Situations—Approaching emergency incidents, use of body armor, cover and concealment, response to crime scenes, suicidal persons, people with weapons, patient restraints, special situations (snipers, hostages, extremist groups, bombing incidents, etc.).

PRE-HOSPITAL EMS FIRST RESPONSE — Procedures directed at the personnel delivering the first pre-hospital EMS resources to the incident scene.

- Delivery Model—The specific configuration of the first response component: type of vehicle, number of vehicles, staffing of the unit (number and care capability).
- Patient care—General procedures addressing patient care delivered in the pre-hospital setting.
- Treatment Protocols—Medically approved protocols for pre-hospital EMS personnel that ensure consistent and appropriate treatment of patients (includes interaction with Medical Director).
• Medical Devices and Equipment—Selection of types of medical devices and equipment appropriate for field use in the defined scope of practice and treatment protocols.
• Biohazard and General Waste Disposal—Types of hazards and disposal methods, disposal area/facility, segregation of waste products, packaging, labeling, storage, treatment, disposal.
• Clothing/Equipment Decontamination—Methods and appropriate applications, decontamination area/facility, use of chemical agents, cleaning clothes, disinfecting.

PATIENT DISPOSITION AND TRANSPORTATION—Procedures directed at how the Fire/EMS Organization assures the safe and effective delivery of the patient to the appropriate facility.
• Destination Guidelines—Criteria for triage of pre-hospital EMS patients to specific destinations.
• Method/Mode of Transportation—Methods to determine how pre-hospital EMS patients are transported (i.e., ambulance vs. helicopter).
• Ambulance Operations—Behavior in the patient compartment, securing the patient, situating and securing equipment, standard safety devices and techniques, use of hazardous equipment during transport (starting an IV, defibrillation, etc.)
• Helicopter Operations—Choosing and marking a landing zone, arm signals, crowd control, protective gear, approaching a helicopter, behavior and etiquette during transport, standard safety devices and techniques, use of hazardous equipment during transport.

MANAGEMENT OF EMS OPERATIONS—Procedures directed towards maintaining organizational readiness to provide emergency medical services in compliance with applicable laws, regulations, and standards.
• Re-supply/Procurement of Supplies—Pre-hospital EMS provider supply and re-supply of expendable medical supplies and medications.
• System Inventory—Determining and accounting for appropriate amounts of medical supplies and medications carried/stored by pre-hospital EMS providers.
• Designation of Treatment Facilities—Coordination with facilities to receive patients.
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- Data Collecting and Reporting—Collecting and analyzing pre-hospital EMS system data.
- Quality Improvement System—Using pre-hospital EMS data to evaluate the system and provider performance, to include customer satisfaction and patient care.
- Research and Reporting—Research conducted and reported as the result of a collaborative involvement of the EMS community.
- Standard of Care—Methods to define the minimum level of care based on available resources, accepted performance standards, and local community needs.
- Patient Care Reporting—Minimum data sets for patient care reporting and times, when reporting is necessary.
- Patient Documentation and Billing—Minimum data required for patient billing activities, procedures for billing activities and identifying times when data collection is necessary.

SPECIAL EMS OPERATIONS—Procedures covering special emergency medical response situations and operations.
- Mass Gatherings—Event types, planning practices, first aid/EMS services, alternate patient access methods, pre-positioning/staging emergency apparatus and resources, expanding response in an emergency.
- Hazardous Materials Team Medical Monitoring—Use of medical monitoring equipment, pre- and post-entry monitoring, criteria for excluding personnel from operations.
- EMS Operations at Hazmat Incidents—Emergency decontamination of victims and team members, patient care and treatment, transport considerations, personal protective equipment.
- EMS Operations at Technical Rescue Incidents—Pre- and post-entry monitoring for team members, patient care and treatment, transport considerations, personal protective equipment.
- EMS Operations During Disasters—Triage methods, alternate treatment procedures, alternate transport procedures, evacuation of hospitals and medical facilities, mass casualty procedures, interfacing outside medical response teams (Disaster Medical Assistance Teams, medical strike teams, community emer-
emergency response teams, etc.), shelter medical procedures, “special needs patient” care, patient decontamination.

- EMS Operations in the Rehabilitation Area/Sector—Criteria for excluding personnel from operations, treatment for emergency service personnel, rehabilitation for emergency service personnel.

HAZARDOUS MATERIALS RESPONSE RISK MANAGEMENT — Procedures designed to minimize risk to responders and implement aspects of the department’s health and safety program at hazardous materials incidents.

- Personal Protective Equipment—Use of turnout gear, SCBA, PASS devices/alarms, and other equipment at hazardous materials incidents.
- Hazardous Materials Personal Safety—Identifying chemical emergencies, incident levels, chemical safety, general precautions for hazardous materials incidents, roadway operations.
- Air Monitoring—Procedures for conducting air monitoring at incidents, addressing such factors as methods and action levels for air monitoring.

HAZ-MAT FIRST RESPONDER OPERATIONS — Procedures defining recommended work practices and response techniques for First Responder Operations personnel.

- Roles and Actions—Definition and role of First Responder Operations personnel, explanation of appropriate (defensive) actions during hazardous materials incidents.
- General Response Procedures/Emergency Response Plan—Standard hazardous materials response procedures: types of incidents, dispatch criteria, techniques for approaching incidents, isolation of hazard, denial of entry, etc.
- Recognition and Identification—Information gathering (container characteristics, shipping papers, markings, labels, etc.), use of reference materials and contacts (e.g., Emergency Response Guide, CHEMTREC), hazard categorization and assessment.
- Notification—Reporting requirements, reporting protocols, requesting assistance (hazmat teams, mutual-aid resources, other agencies), incident updates, documentation.
- Site Management and Scene Setup—Identification of hazmat incident levels, use of hazard zones and perimeters, location of decontamination area, placement of vehicles and supplies, etc.
• Emergency Decontamination—Emergency decontamination of personnel and equipment exposed to hazardous substances: methods of decontamination, decontamination procedures, handling and transporting victims.

• Defensive Actions—Procedures for specific First Responder defensive actions (e.g., damming, diking, diversion, using sorbents, application of firefighting foam).

SPECIAL HAZMAT OPERATIONS—Procedures covering special hazardous materials response situations and operations.

• Operating with hazmat Teams—Pre-designated procedures for working with a hazmat team.

• Public Protection Options—Procedures for public evacuation or sheltering in-place: decision making, alerting the public, coordinating with law enforcement and community services agencies, initial and secondary evacuation, sheltering in-place, incident termination and re-entry.

• Environmental Restoration—Procedures for supporting and monitoring the activities of private remediation or cleanup contractors (may be the responsibility of another agency).

TECHNICAL RESCUE RISK MANAGEMENT—Procedures designed to minimize risk to responders and implement aspects of the department’s health and safety program at technical rescue incidents.

• Personal Protective Equipment—Use of specialized technical rescue personal protective clothing and equipment at incidents.

• Lock Out/Tag Out—Procedures ensuring that all electrical and mechanical equipment at or near the rescue site is turned off and physically prevented from being inadvertently turned on.

• Air Monitoring—Procedures for conducting air monitoring at rescue incidents, addressing such factors as methods and action levels for air monitoring.

RESCUE OPERATIONS—Procedures that direct activities related to search and rescue operations, including vehicle rescue, agricultural rescue, and extrication from industrial equipment.

• Scene Stabilization—Assessment and control of hazards, stabilization of vehicles involved in motor vehicle accidents, crowd/bystander control.
• Rescue Equipment—Types, use, and protection of specialized rescue equipment.

• General Rescue Operations—Basic procedures for coordinating with other response agencies, locating endangered persons, setting rescue priorities, patient stabilization and protection, performing technical rescue, dealing with relatives/family liaison, etc.

• Rescue Teams—Procedures describing the use, structure, equipment, and operations of special rescue teams (may be a separate document/section from the general standard operating procedures).

SPECIAL RESCUE OPERATIONS—Procedures covering special rescue activities or programs.

• Water Rescue—Response to and operations during surface, swift water, or dive rescues; may include specific information about equipment use and maintenance.

• Confined Space Rescue—Response to and operations during confined space rescue situations; may also include information on equipment use and maintenance.

• Structural Collapse Rescue—Response to and operations during a structural collapse; may also include information on equipment use and maintenance.

• Rope Rescue—Response to and operations during a rope, vertical, or high-angle rescue situation; may include information on equipment use and maintenance.

• Trench and Excavation Collapse—Response to and operations during a trench or excavation collapse incident; may include information on equipment use and maintenance.

• Aircraft Extrication—Extrication of patients from aircraft; may include information on equipment use and maintenance.

EMERGENCY MANAGEMENT/DISASTER OPERATIONS

ORGANIZING FOR DISASTER SITUATIONS — Procedures that address modified organizational missions and personnel assignments during disaster operations.

• Disaster Management—Activation of the department’s disaster operations plans and systems: emergency finance and procurement, resource management, personnel, information management, public information, etc.

• EOC Organization—Functional structure of disaster operations to facilitate coordination with other community agencies and federal/state resources,
including EOC functions (e.g., use of Emergency Support Function categories), staffing, and operational procedures.

- **ICS/EOC Interface**—Local response agency coordination, mutual aid organization coordination, EOC/field communications and documentation.
- **Activation Levels**—Categories that define organizational mobilization requirements and actions depending on the nature of the emergency.
- **Personnel Assignments and Responsibilities**—Changes in normal operating assignments and responsibilities to accommodate new disaster missions and responsibilities (family issues, temporary roles, teams, task forces, etc.).
- **Personnel Notification Procedures**—Steps to locate and assign personnel, both during and after normal work hours in a disaster: communication methods, information conveyed, and procedures for tracking the process and resolving problems.
- **Disaster Training**—Special systems and procedures to brief and train personnel on new roles, assignments, and work requirements.
- **Disaster Preparation**—Procedures for securing department facilities and verifying the identity of personnel under disaster conditions; may include procedure for securing responders’ personal residences and families.

**DISASTER OPERATIONS RISK MANAGEMENT**—Procedures designed to minimize risk to responders and implement aspects of the department’s health and safety program in disaster operations.

- **Personal Protective Equipment**—Use of turnout gear, SCBA, PASS devices/alarms, and other equipment in disaster operations.
- **Disaster Operations Personal Safety**—General precautions and procedures for department and responder actions to reduce risk during disaster operations.
- **Protection of Facilities and Equipment**—Methods to protect fire department facilities, apparatus, and equipment from hazard impacts before and during disaster response.
- **Accountability of Personnel**—Procedures for monitoring disaster operations and personnel to ensure that tasks are completed safely and effectively.
- **Suspending Operations**—Designation of conditions in which personnel and apparatus are to remain in/return to quarters or other safe location; may include notification of the EOC and the public of operational status.
• Member Injuries and Fatalities—Procedures to evaluate and treat member injuries and to document and report injuries and fatalities that occur during disaster operations.

DISASTER OPERATIONS—Procedures providing general guidance for disaster operations, including methods and actions that differ from routine alarm response and coordination with other local, state, and federal disaster agencies and community groups.

• Disaster Operations Center—Implementing and staffing “area commands” or “fire operations centers,” and integrating field activities with the EOC and other response agencies.
• Adjusted Levels of Response—Changes in standard response strategies and resource levels, including the use of task forces and strike teams.
• Disaster Communications—Changes in standard communication roles, protocols, and procedures to facilitate coordination with outside agencies and groups.
• Response Unit Routing and Placement—Routing and placing equipment and personnel on the disaster scene to reflect the nature and requirements of the emergency situation.
• Damage Assessment—Procedures for rapid damage assessment of response areas immediately following a disaster; may include a more thorough assessment of damage at fire department facilities.
• Specialized Equipment—Identifying, accessing, and operating specialized equipment during disaster situations, including equipment controlled by outside agencies, private sector companies, and members of the public.
• Building Safety Evaluations—Inspection priorities, initial rapid evaluation of damage to individual residential and commercial buildings, building posting classifications, working with building owners.
• Community Emergency Response Teams—Integrating and working with CERTs and other emergent volunteer groups during disasters.
• Mitigation Activities—Actions taken during disaster operations that reduce or eliminate the risk of future incidents: identifying opportunities, assessing options, establishing partnerships and collaborative activities, setting priorities, financing and accounting procedures, implementation and evaluation of activities.
• Curtailing Disaster Operations—Steps for monitoring the disaster situation, evaluating hazards and response requirements, terminating disaster operations, and making the transition to normal operations.

DISASTER-SPECIFIC GUIDELINES—Procedures to address disaster missions and response requirements that are specific to different types of hazards. The need to develop SOPs in this category will vary significantly from community to community depending on potential hazard vulnerability and local comprehensive emergency management plans. Potential hazards that might be addressed include the following:

• Flood/dam break
• Hurricane
• Tornado
• Earthquake/tsunami
• Volcano eruption
• Snow/ice storm
• Drought
• Civil Disturbance
• Mass casualty
• Aircraft crash
• Train accident
• Ship fire/accident
• Terrorism incident
• Explosion
• Gas pipeline incident
• Severe storm
• Building collapse
• Cave-in
• Radioactive material emergency
• Special events (Olympics, dignitary visit, etc.)
• Disease epidemic
CHAPTER NINE
HEALTH AND SAFETY

This chapter includes sections on national safety and wellness standards for emergency responders and describes how the Fort Myers Fire Department (FMFD) compares to those standards.

OVERVIEW

Over the last 20 years, an increasing focus has been placed on the safety of emergency responders, especially those who are engaged in the delivery of fire and rescue services. Several factors have contributed to this increased safety focus, including:

- An increase in the personal concerns of firefighters and medical responders for their own health and well-being;
- An increase in the costs associated with occupational illnesses and injuries;
- A better understanding of the impact that poor physical fitness has on a firefighter’s ability to perform his or her job; and
- An increase in the regulation of occupational health.

Much of the emphasis on firefighter health and safety seems to have come from career fire departments or fire departments with paid staffing; primarily from those states where Occupational Safety and Health Administration (OSHA) standards apply to municipal workers.

Research has repeatedly shown that the physical and mental demands associated with firefighting and emergency medical care operations, coupled with the environmental dangers of extreme heat, humidity, and cold, create conditions that can have an adverse impact on the safety and health of the individual firefighter or medical responder.

Throughout the course of their work, emergency responders come in contact with many health hazards (e.g., blood borne pathogens and hazardous materials). In addition, firefighting has been recognized for many years as one of the most hazardous occupations in the nation due to its number of occupational-related deaths and injuries.
Several years ago, a United States Fire Administration (USFA) report said, “Firefighting is extremely strenuous physical work and is likely one of the most physically demanding activities that the human body performs.” It is important for all communities that provide fire protection services to remember that the best way to help their citizens in time of crisis is to have an emergency response force physically ready and capable of assisting those in need. This, of course, must be accomplished without the emergency responders themselves falling victim.

Over the last ten years, more than 300,000 fire scene related injuries have occurred, and more than 1,000 firefighters have lost their lives in the line of duty in the United States. According to the USFA’s report, 87 firefighters died in the line of duty in 2010.

Commission on Fire Accreditation International (CFAI)

The Commission on Fire Accreditation International (CFAI) emphasizes the importance of risk management and personnel safety in modern-day fire department operations. Progressive fire departments use this criterion, and others, as a benchmark for determining the best and safest service possible. The CFAI Risk Management and Personnel Safety Criterion Performance Indicators, as referenced by the Study Team, are provided below:

Criterion 7F: Occupational Health and Safety and Risk Management

Occupational health and safety and risk management programs are established and designed to protect the organization and personnel from unnecessary injuries or losses from accidents or liability.

7F.1. A specific person or persons are assigned responsibility for implementing the occupational health and safety and risk management programs.

7F.2. Procedures are established for reporting, evaluating, addressing, and communicating workplace hazards as well as unsafe/unhealthy conditions and work practices.

7F.3. The agency documents steps taken to implement risk reduction and address identified workplace hazards.

7F.4. Procedures are established and communicated specifically to minimizing occupational exposure to communicable diseases or chemicals.
7F.5. An occupational health and safety training program is established and designed to instruct the workforce in general safe work practices, from point of initial employment through each job assignment and/or whenever new substances, new processes, procedures, or equipment are introduced. It provides specific instructions on operations and hazards specific to the agency.

7F.6. The agency uses near miss reporting to elevate the level of situational awareness in an effort to teach and share lessons learned from events that, except for a fortunate break in the chain of events, could have resulted in a fatality, injury or property damage.

7F.7. A process is in place to investigate and document accidents, injuries, legal actions, etc., which is supported by the agency’s information management system.

**NATIONAL FALLEN FIREFIGHTER SAFETY INITIATIVES**

In 2005, the National Fallen Firefighters Foundation (NFFF), in conjunction with other United States fire service organizations, released a program known as the “16 Firefighter Life Safety Initiatives (FLSI).” The goal of the program is to develop a “blueprint for change” for the fire service. This national program is often referred to as the “Everyone Goes Home Program” and it aims to reduce the number of firefighter line-of-duty fatalities. With the number of firefighter line-of-duty deaths still a major concern, fire service leaders and organizations are convinced that dedicated, aggressive measures are needed if departments are to be serious about increasing firefighter safety.

The NFFF’s “16 Firefighter Life Safety Initiatives” are as follows:

1. Define and advocate the need for a cultural change within the fire service relating to safety, incorporating leadership, management, supervision, accountability and personal responsibility.

2. Enhance the personal and organizational accountability for health and safety throughout the fire service.

3. Focus greater attention on the integration of risk management with incident management at all levels, including strategic, tactical, and planning responsibilities.

4. All firefighters must be empowered to stop unsafe practices.

5. Develop and implement national standards for training, qualifications, and certification (including regular recertification) that are equally applicable to all firefighters, based on the duties they are expected to perform.
6. Develop and implement national medical and physical fitness standards that are equally applicable to all firefighters, based on the duties they are expected to perform.

7. Create a national research agenda and data collection system that relates to the initiatives.

8. Utilize available technology wherever it can produce higher levels of health and safety.

9. Thoroughly investigate all firefighter fatalities, injuries, and near misses.

10. Grant programs should support the implementation of safe practices and/or mandate safe practices as an eligibility requirement.

11. National standards for emergency response policies and procedures should be developed and championed.

12. National protocols for response to violent incidents should be developed and championed.

13. Firefighters and their families must have access to counseling and psychological support.

14. Public education must receive more resources and be championed as a critical fire and life safety program.

15. Advocacy must be strengthened for the enforcement of codes and the installation of home fire sprinklers.

16. Safety must be a primary consideration in the design of apparatus and equipment.

The initiatives are seen by national fire service organizations such as the International Association of Fire Chiefs (IAFC) and the International Association of Fire Fighters (IAFF) as key elements in a plan to reduce firefighter injuries and deaths. In 2014, the National Fallen Firefighters Foundation convened another summit “Tampa 2” to assess how the fire service has responded in implementing the initiatives and even more important have they impacted the number of line of duty deaths (LODDs). It was also felt that the 16 life safety initiatives needed to be assessed to see if they are still applicable and to determine what actions need to be taken in the upcoming decade. It was the general consensus that the FLSI have helped the fire service over the last decade in reducing firefighter injuries and LODDs and that at this time the 16 initiatives should remain. What was suggested is that more specific actions be recommended to achieve each goal and that there be consideration of actions that firefighters and officers can
related to and implement. The report from the summit, “Tampa 2: Carrying the Message into the Future” is available for download online.

According to the National Fire Protection Association’s (NFPA) report, *Firefighter Fatalities in the United States—2014*, there was a total of 64 firefighter deaths while on duty in the U.S. This is one of the lowest losses since the NFPA started maintaining these statistics in 1977. The report sites that the majority of deaths (22) occurred while the firefighter was operating at a fire, while 11 firefighters died while responding to or returning from an emergency call. Nine firefighters died at non-fire emergencies, five at medical emergencies. The remaining occurred during training or at a variety of non-emergency on-duty activities.

The report also listed the causes of the fatal injuries or illnesses. The largest number of deaths (37) were caused by overexertion, stress and medical issues. Thirty-five of these were classified as sudden cardiac arrest. This has been the trend in almost every year since 1977.

While the emphasis in looking at firefighter health and wellness has been heart disease, within recent years other life threatening diseases are also of concern. Currently numerous research studies are being conducted on various populations within the fire service on the incidence of what are believe to be occupational related cancers in firefighters. These are long-term studies, but even early results indicate a higher incidence of certain cancers in firefighters.

Another area of concern and study has been behavioral health issues. In recent years, there appears to be a high rate of suicides in the fire service. This is a difficult area to obtain data, but several groups have secured funding and are collecting data.

**NATIONAL STANDARDS AND REGULATIONS**

**OSHA Regulations**

Traditionally, safety and health regulations, whether federal, state, or local, are most often enacted due to an event or series of events that have caused death or harm to employees. For example, perhaps several workers unfortunately die while working in an underground storage tank (confined space). An investigation reveals that the workers had
little training, poor safety equipment, and no plan for rescue. From that event and a series of other similar events nationwide, a federal regulation might be enacted that addresses working in and around confined spaces. In fact, 29 CFR 1910.146 *Permit-Required Confined Spaces* is an OSHA regulation (standard) that was enacted based on that type of scenario.

There are numerous OSHA standards that affect private industry across the nation. Industry often protests that these standards cost millions of dollars in training and equipment just to be in compliance; however, the safety professionals realize that compliance with the standards improves worker health and safety, and that a healthy and safe workforce is a more productive workforce. The Department of Labor (DOL) has three OSHA offices in Florida where the regulations cover private and public sector workers.


In terms of fire department safety and health, many of the OSHA regulations have been adopted into the National Fire Protection Association (NFPA) standards—especially NFPA 1500 *Standard on Fire Department Occupational Safety and Health Program, 2013 Edition*. For those municipal fire departments in the non-OSHA states, NFPA 1500 has proven to be a very effective tool when it comes to worker health and safety.

**National Standards**

A “standard” is often thought of as an “accepted practice” that has been developed and recognized by a board of peers in a certain type of industry (industry standards). For example, the Society of Automotive Engineers (SAE) has a standard that addresses Automotive Lubricating Greases (J310). While certainly not a regulation, the SAE standard is recognized as an industry standard or “best practice” and should be followed by all parties interested in compliance with industry standards. From a customer service perspective, a reputable automotive service facility would only use SAE-approved
lubricants when servicing the customer’s vehicle because that is what the customer would expect.

For the fire service, the industry standards are the NFPA Standards: they are known as consensus standards and are recognized by fire service professionals worldwide as the “best practices” for fire service related issues. Although none of the NFPA standards are regulatory in nature, they carry much of the same weight as a regulation where civil litigation is involved. Because the NFPA standards are recognized by fire service peers as industry practices, noncompliance with NFPA standards is often considered a “bad” business practice that can expose a fire department to liability issues. When fiscally possible, it is important for all fire departments to either comply with the NFPA standards or be in the compliance planning and development process.

**FMFD COMPLIANCE WITH STANDARDS AND REGULATIONS**

The Study Team’s review of FMFD policies and procedures reveals a number of safety-related policies. While the Study Team believes that the leadership is concerned for the safety and welfare of its responders, the lack of a comprehensive set of policies makes it difficult to ensure consistency in application.

**NFPA 1500**

Perhaps the most well-known fire service safety standard is NFPA 1500 *Standard on Fire Department Occupational Safety and Health Program, 2013 Edition*. First issued in 1987, NFPA 1500 was the first national fire service standard to ever address a comprehensive approach to fire department safety and health programs. The 2013 edition is the most current edition of the standard, which has been revised six times since 1987.

Even though NFPA 1500 is a voluntary consensus standard, it is the accepted industry practice for the fire service and has in many instances been used as an enforcing document when applying safety practices to traditional fire department operations. Senior fire officials all over the United States have used NFPA 1500 to improve the safe operation of their fire departments and to justify to state and local authorities the improvements needed in order to meet the standard.
The Study Team finds the FMFD in compliance with most of NFPA 1500. Work is needed in institutionalizing the FMFD’s safety programs. The following is a review of each chapter of NFPA 1500 in relationship to the FMFD’s operations.

**Fire Department Administration**

The NFPA 1500 standard requires various written documents in the forms of policies, procedures, and programs. The purpose of the written documents is to clearly define and communicate all of the department’s safety programs to its personnel. By having established procedures and following those procedures, a fire department is more likely to take a safer approach in all of its operational arenas. This chapter of the standard identifies items such as:

1. Having written policies and standard operating procedures that document the requirements and operations of the department for both the emergency and non-emergency settings.
2. Having a written risk management plan that addresses all facets of the fire department’s operations from scene safety to injury reporting to facility inspections.
3. Having a written occupational safety and health program that identifies specific goals and objectives for the prevention and elimination of accidents and occupational injuries, exposure to communicable disease, illnesses, and fatalities.
4. Ensuring that the department establishes and enforces rules, regulations, and standard operating procedures throughout the department.
5. Developing and implementing an accident investigation program that investigates all accidents, injuries, fatalities, illnesses and exposures, as well as the investigation of all accidents involving fire department vehicles, equipment, and facilities.
6. Forming an Occupational Health and Health & Safety Committee for the purpose of conducting research, developing recommendations, and reviewing matters related to occupational safety and health within the department.
7. Having a recordkeeping system that requires the fire department maintain a database on all accidents, injuries, illnesses, exposures, and deaths that are job related; this recordkeeping requirement also includes comprehensive health records (confidential), training records, and vehicle and equipment maintenance records.
8. Appointing a health and safety officer to the fire department in compliance with NFPA 1521 *Standard for Fire Department Safety Officer*. The responsibilities of the health and safety officer are many and they all relate to the communication and management of the department’s risk management plan.

9. Having the health and safety officer ensure that all members of the department receive safety-related training for all aspects of their assigned duties and responsibilities; ensure that all accident and injury investigations are completed; ensure that safety supervision is provided at all training exercises and that all live fire training events are done in compliance with NFPA 1403 *Standard on Live Fire Training Evolutions*; and ensure that health and safety training programs and information are provided to the members of the department.

10. Having the department’s health and safety officer be responsible for managing an accident and injury prevention program that includes items such as the evaluation of safe work practices in both the emergent and non-emergent settings, the training and certification of all fire department apparatus drivers and operators (NFPA 1002 *Standard for Fire Apparatus Driver/Operator Professional Qualifications*), the implementation of an accident and injury reporting system that accurately reflects causes and corrective actions, and the conducting of periodic facility inspections to ensure that workplaces are hazard-free for the employees.

11. Having the department’s health and safety officer be responsible for ensuring that injury and accident data is gathered in a correct and useful manner, and responsible for issuing an annual report to fire department senior staff on the accidents, injuries, and exposures that occurred in the department.

While the FMFD has policies and procedures relating to safety that are comprehensive, such as the Exposure Control and Respiratory Protection Manual, most of the department’s policies and procedures are limited in scope and require revision, especially in consideration of safety standards that are newer than its policies.

The FMFD does not have a comprehensive Risk Management Plan (RMP) as required by NFPA 1500. Such a plan is important in establishing the overall safety and health goals for the department and the processes by which the department will achieve those goals. The FMFD should consider using the results of the Study Team’s work as a basis for development of an RMP. Additionally, NFPA 1500 has a template for an RMP (Appendix D) which can be be used to help develop the FMFD’s RMP.
Article 36 of the Collective Bargaining Agreement between the City of Fort Myers and Local 1826 requires the appointment of a Health and Safety Committee and outlines the responsibility of the committee and deliverables that the city and the committee agree should be done. And, while the FMFD has set a policy, in addition to the Collective Bargaining Agreement, establishing a Health and Safety Committee, the FMFD does not have a written occupational safety and health policy or a formal occupational safety and health program.

As noted earlier, the FMFD does have a few policies and procedures that address certain health and safety issues (e.g., Exposure Control, Mayday Communications, Fire Ground Safety, PPE, Respiratory Protection, Station Safety, Driver Safety, etc.). However, these policies or procedures fall short of taking a strong, comprehensive safety and health approach. The Study Team recommends that the FMFD develop a written safety and health policy and implement an organized and effective safety and health program.

The city has an integrated safety and health management program to provide workplace safety for all employees and to protect the public and the environment. Provisions of this program apply to all employees of the City of Fort Myers not otherwise governed by a collective bargaining agreement or other contract and to all activities entered into by city employees in their regular assigned duties.

Any deviation from safety requirements outlined in the city’s Safety Program, or any other safety publications, can only be accomplished with the approval of the Risk Management Department. This plan is subsidiary and complementary with federal, state, and local laws and regulations. Compliance with the city Safety Program is a condition of employment to all city personnel.

The city’s Risk Manager and Safety Officer have oversight and management for the coordination, implementation, and maintenance of the city’s Safety Program. The Risk Manager and the Safety Officer have no direct authority or supervisory authority except to inspect city facilities; provide assistance to staff; stop hazardous jobs when agreed safety practices are not being enforced; monitor compliance with employee health requirements and report cases of noncompliance to the Risk Manager and Department Head concerned; and administer safety training for designated areas of the program and specific request for training from department supervisors.
Each department director (in the case of the FMFD that person is the Fire Chief) has full authority and direct responsibility for maintaining safe and healthful working conditions within his/her department whether it is out in the field, in a facility or operating vehicles. Although personal exposures to hazards vary widely from department to department, it is expected that an unrelenting effort will be directed toward controlling injuries, collisions, liabilities, and waste of material.

While the city’s safety policies require accident investigation, the Study Team suggests a comprehensive written vehicle collision reporting policy that addresses all aspects of emergency vehicle collisions: driver training and certification; collision investigation and report writing; post-collision drug and alcohol screening; and driver remedial training. It is recommended that the FMFD, using the city policy as a basis, develop its own more comprehensive policy.

While the FMFD Division Chief of Training also functions as the department’s Safety Officer, the FMFD does not have a designated health and safety officer as outlined in NFPA 1500. The FMFD Safety Officer (Division Chief of Training) functions as an on-scene safety officer at significant emergency incidents and works with the department’s Health & Safety Committee.

The Study Team believes that the role of a fire department health and safety officer is as important as the role of the fire department training officer: both serve critical functions of being the point of contact and manager for their areas of responsibility. Since the Division Chief of Training, who serves as the FMFD Safety Officer, has a heavy workload with managing EMS and Training, in addition to health and safety, the Study Team recommends that the Training Officer be supplied with additional staff so that the Division Chief of Training has the capacity to address health and safety and the recommendations addressed in this chapter.

The Study Team recommends that the FMFD Division Chief of Training serve as the department’s Health and Safety Officer in accordance with NFPA 1500 and NFPA 1521 Standard for Fire Department Safety Officer, 2015 Edition.

Currently, there is limited, formal health and safety training in the FMFD as defined in NFPA 1500. Most of the health and safety training completed by the FMFD is the result of annual refresher training on topics such as hazardous materials response and infectious
disease control. The Study Team believes this is a priority issue that needs to be addressed in the planning to ensure a significant improvement in safety-related training.

**Training and Education**

In terms of training and education, NFPA 1500 requires that the “fire department establish and maintain a training and education program with a goal of preventing occupational deaths, injuries, and illnesses.” The standard requires that all personnel be trained in the duties and responsibilities that they are expected to be perform and that the training is in compliance with recognized standards. Other requirements identified in this standard include:

1. Having all members who engage in firefighting activities trained to meet the requirements of NFPA 1001 *Standard for Fire Fighter Professional Qualifications*.
2. Having all apparatus drivers/operators meet the requirements of NFPA 1002 *Standard for Fire Apparatus Driver/Operator Professional Qualifications*.
3. Having all personnel required to perform technical rescue operations meet the requirements of NFPA 1006 *Standard for Rescue Technician Professional Qualifications*.
4. Having all officers (company and chief) meet the requirements of NFPA 1021 *Standard for Fire Officer Professional Qualifications*.
5. Having all personnel who respond to hazardous materials incidents meet the operational requirements of NFPA 472 *Standard for Professional Competence of Responders to Hazardous Materials Incidents*.
6. Having all personnel trained in accordance with the guidelines established in NFPA 1581 *Standard on Fire Department Infection Control Program*.
7. Ensuring that all training exercises are conducted under the supervision of a qualified instructor.
8. Ensuring that all personnel are trained in the use and care of their personal protective clothing and equipment.
9. Implementing a recurring training program that is based on a proficiency cycle with the goal of preventing the degradation of skills.
10. Providing training and education activities that are needed to support the certifications of the department’s personnel.
11. Ensuring that all personnel practice assigned skill sets on a regularly scheduled basis.

12. Ensuring that all respiratory protection training is conducted in accordance with NFPA 1404 *Standard for Fire Service Respiratory Protection*.

Basically, NFPA 1500 requires that a fire department have a response force that is trained in accordance with national standards, given ample opportunity to practice their skills in training exercises, and expected to maintain the level of proficiency needed to perform their jobs safely and effectively.

As described in the chapter on training, the FMFD does not fully meet the nationally recognized standards and practices for training and certification of its personnel. The Study Team finds that lack of training resources (personnel) and lack of strong policy requiring company officers to complete station-based training is the biggest obstacle.

The FMFD’s training program should establish minimum training requirements for all officer ranks as recommended in the Training chapter of this report. This will require a plan to phase in the various program requirements and to allow personnel a period of time to complete the required training.

**Fire Apparatus, Equipment and Driver/Operators**

NFPA 1500 addresses many areas related to the design, selection, and use of fire department apparatus and equipment. The standard also addresses the training requirements of drivers/operators. This section of the standard “considers health and safety as the primary concern in the design, construction, acquisition, operation, maintenance, inspection, and repair of all fire department apparatus and equipment.” Items addressed in this section of the standard include:

1. Ensuring that all new, fire department apparatus meet the requirements set forth in NFPA 1901 *Standard for Automotive Fire Apparatus*.

2. Ensuring that all fire department apparatus that is refurbished meet the requirements of NFPA 1912 *Standard for Fire Apparatus Refurbishing*.

3. Ensuring that all apparatus is operated by personnel who have successfully completed an approved driver training program. (NFPA 1451 *Standard for a Fire Service Vehicle Operator Training Program*.)*
4. Having established response guidelines in the form of written and enforceable operating procedures.

5. Ensuring that all personnel use seat belts and other passenger restraint devices.

6. Having an established procedure for vehicle inspection, at least on a weekly basis, but within 24 hours of last use.

7. Having an established inspection and preventive maintenance program that meets the requirements of NFPA 1915 *Standard for Fire Apparatus Preventive Maintenance Program*.

8. Ensuring that all pumps, aerial devices, fire hoses, and ground ladders are tested annually in accordance with their corresponding NFPA standards.

The list shown above illustrates that almost every aspect of fire apparatus and equipment design, use, and maintenance is addressed by at least one NFPA standard. In the case of the FMFD’s apparatus, equipment, and operators, the Study Team is of the opinion that the department does a good job of maintaining the apparatus fleet and its equipment.

In terms of the apparatus fleet, the Study Team did not find any serious safety concerns; it appears that the apparatus is well attended to at all levels of the organization.

**Protective Clothing and Equipment**

One of the most comprehensive portions of the NFPA 1500 standard is the chapter on personal protective clothing and equipment. The primary focus of the protective equipment chapter is to ensure that each firefighter is provided with safe protective clothing and equipment, and that the clothing and equipment is cleaned and maintained on a regular basis in accordance with recommended practices. Items identified in this chapter include:

1. Ensuring that each firefighter is provided the protective clothing and equipment needed for the hazards to which he/she is expected to be exposed.

2. Ensuring that a written protective clothing and equipment use policy and program are in place and enforced by the department.

3. Ensuring that all structural firefighting protective clothing is cleaned at least once every six months in accordance with NFPA 1851 *Standard on the Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles*. 
4. Having all station/work uniforms comply with NFPA 1975 *Standard on Station/Work Uniforms for Fire and Emergency Services*.

5. Having all structural firefighting clothing design and manufacturing comply with NFPA 1971 *Standard on Protective Ensemble for Structural Fire Fighting*.

6. Having a written protective clothing and equipment inspection and maintenance program.

7. Ensuring that all EMS providers are provided with adequate protective clothing and equipment to reduce the likelihood of exposure to blood-borne and air-borne diseases.

8. Ensure that all hazardous materials incident responders are provided adequate protective clothing and equipment to protect them from the known chemical hazards.

9. Having a written, hazardous materials protective clothing and equipment inspection and maintenance program.

10. Having a written, respiratory protection program that addresses the selection, safe use, care, maintenance, and air quality of respiratory protection devices.

11. Having a written standard operating procedure for the use of respiratory protection equipment.

12. Ensuring that all personnel receive annual training and recertification on the use of respiratory protection equipment.

13. Ensuring that adequate breathing air (quality and quantity) exists for the recharging of respiratory protection equipment. (NFPA 1989 *Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection*.)

14. Ensuring that all self-contained breathing apparatus (SCBA) meet the requirements of NFPA 1981 *Standard on Open-Circuit Self-Contained Breathing Apparatus for the Fire Service*.

15. Ensuring that all personnel receive an annual face-piece fit test.

16. Ensuring that all SCBA are equipped with a functional personal alert safety system (PASS) device.

17. Ensuring that all life safety rescue ropes are selected, used, maintained, and stored in accordance with NFPA 1983 *Standard on Fire Service Life Safety Rope and System Components*.

18. Ensuring that all personnel are provided eye protection and hearing protection devices that meet applicable design standards.
When reviewing compliance with this part of the NFPA 1500 standard, the Study Team found that the FMFD SOPs included NFPA-compliant written policies or procedures concerning the care, cleaning, use and maintenance of protective clothing. The department has provided washing machines for cleaning PPE and adequate instructions on the cleaning procedures.

The FMFD Respiratory Protection program adequately addresses respiratory PPE use, fit and car.

**Emergency Operations**

NFPA 1500 provides significant direction in the area of incident scene management. The goal of the standard is to provide a safe, organized approach to mitigating all emergencies with the intent of utilizing resources in an effective and efficient manner. Items identified in this part of the standard include:

1. Using an incident management system that meets the requirements of NFPA 1561 *Standard on Emergency Services Incident Management System*.
2. Creating and using an incident action plan during the mitigation of all emergencies.
3. Dividing the management of an incident into tactical level management components that maintain an effective span of control.
4. Implementing an accountability system that keeps track of all personnel working on the incident scene.
5. Ensuring that dispatch and radio communications are effective and uncomplicated, and that emergency procedures are clearly identified.
6. Ensuring that risk management occurs at each emergency scene so that the risks taken are appropriate for the benefits acquired.
7. Ensuring that a written accountability procedure is in place and that all personnel follow the procedure on a regular basis.
9. Ensuring that all personnel assigned to a hazardous environment work in teams of two and that no one ever works alone.

10. Ensuring that before entry is made into a hazardous atmosphere, a “standby” or initial rapid intervention company made up of two personnel is available and in position to affect the rescue of firefighters entering the atmosphere. (2-in/2-out policy)

11. Ensuring that as the incident grows and additional resources arrive on-scene that a designated rapid intervention company be established for the rescue of fire department personnel.

12. Having a written procedure for the rehabilitation of all personnel at incident scenes.

13. Having a written post-incident analysis procedure that requires the written review of all major incidents including major property losses, civilian deaths, significant firefighter injuries, and firefighter deaths. All post-incident analyses must be made available to all fire department personnel.

In terms of emergency operations, the Study Team found a limited number of written incident management policies and procedures. While the lack of written incident management procedures does not mean that response personnel fail in their mission, it does leave room for different crews to respond to and handle incidents differently. Perhaps more importantly, the lack of more definitive incident management procedures provides easier opportunity for operational liability matters to arise than when sound operational procedures are established and enforced.

The Study Team recommends that the FMFD immediately:

- Develop clear and consistent incident management policies and procedures;
- Implement a formal After Action Review (AAR) policy with guidelines on what incidents shall be reviewed. This policy should vest the authority of conducting AARs with the Division Chief of Training who shall implement and oversee AARs using a pre-agreed upon format. AARs should include outside subject matter experts (SMEs) to avoid myopic reviews or conflicts of interest.
- Implement consistent command officer training as outlined in the chapter on Training; and
Embrace the Lee County fire service operations “playbook,” and develop and implement response and mutual aid policies and procedures so that service delivery when running with other departments in the county is consistent.

While the FMFD Respiratory Protection Manual addresses two-in/two-out and makes reference to SOP’s 206.1 (Tactical Guideline – Rescue) and 209.1 (two-in/two-out), the FMFD has no effective written policy or procedure regarding the protection (and rescue) of the initial arriving response crew, normally referred to as Rapid Intervention with the formal designation of a Rapid Intervention Team (RIT).

The standard practice in today’s fire service is that no one operates alone in a hazardous environment unless a known civilian rescue exists; an initial team of firefighters cannot enter a hazardous atmosphere until a standby rescue team is available and in direct communication with the crew working inside a structure. This practice is commonly known as a “two-in/two-out policy.” While the two-in/two-out policy has been greatly debated throughout the fire service, it is the recommended business practice and is part of OSHA 29 CFR 1910.134 Respiratory Protection.

The International Association of Fire Chiefs (IAFC) stated in an information document regarding the OSHA regulation that the “two-in/two-out provision may be one of the most important safety advances for firefighters in the past decade.” The IAFC issues a memorandum in February 2014 regarding the importance of two-in/two-out and what the standard requires. There needs to be a procedure developed and implemented as to how and when this procedure is to be accomplished on incidents.

The Study Team realizes that the FMFD engages the use of Rapid Intervention Teams (RIT) and has a formal “MAYDAY” policy. However, formal procedures for RIT and consistent and timely deployment are lacking.

The purpose of a RIT is to ensure that there is a dedicated team of properly trained and equipped firefighters on the scene at working incidents. The team’s sole responsibility is to rescue any downed or trapped firefighters should that need arise. History has repeatedly shown that when a firefighter becomes trapped (a.k.a. MAYDAY) in a structure fire, it takes an entire team of individuals to locate and remove that trapped firefighter. History has also shown that when RIT crews are not used, the outcome for these trapped firefighters is often bleak. The recognized best practice in today’s fire
departments is the consistent use of RITs to help ensure firefighter safety on the incident scene.

The Study Team recommends that the FMFD develop a comprehensive structure fire response procedure that meets the requirements set forth in NFPA 1500. This procedure should address the use of an initial two-out team, the transition to a RIT operation, and a process by which a MAYDAY situation is managed.

Another reported area of concern was the use of an accountability system. The purpose of an accountability system is to document and manage who is present on the incident scene. There are a number of different accountability systems in use throughout the United States today, but they all basically function the same—they keep track of where individual companies and firefighters are operating on the incident scene. Should a MAYDAY situation occur, then the incident commander can refer to the accountability system (board or other tracking device) to quickly determine who is involved in the MAYDAY. As with the two-out procedure and the RIT procedure, an accountability system (and procedure) is paramount to firefighter safety.

The FMFD has an accountability system that works well, but is in need of more consistent use. The Study Team recommends that the FMFD implement a component of use of the accountability system in daily training and to ensure that the system used by the FMFD is interoperable with all mutual and automatic aid resources.

The final issue concerning this part of the NFPA 1500 is the written post-incident analysis (PIA). A PIA is an important tool in evaluating the operation of emergency response services. A PIA is not a disciplinary tool or a tool to find fault; it is a process by which a significant event is dissected and analyzed so that operational procedures can be validated and potentially lead to possible improvement. The FMFD outlines the PIA process in its Incident Command policy.

A PIA plays an important role in a department’s self-evaluation and growth. Without a formal PIA process, rumors can abound, false accusations can be generated, and a general distrust of other agencies can grow. The FMFD should use the PIA as a daily internal tool at the company officer and shift battalion chief level. When a formal ARR is required, the PIA can be used to capture the information to be used as part of the AAR process.
Facility Safety

This part of the NFPA 1500 standard addresses the safe operation of fire department facilities. The goal is to ensure that all fire department personnel have a clean and safe environment in which to perform their non-emergency duties and responsibilities. Items included in this section are:

1. Ensuring that all fire department facilities comply with all legal, health, safety, building, and fire code requirements.

2. Ensuring that all fire stations have adequate facilities for disinfecting, cleaning, and storing various items in accordance with NFPA 1581 *Standard on Fire Department Infection Control Program*.

3. Ensuring that work sites have adequate fire and life safety protection systems in place such as smoke detectors, fire alarm systems, carbon monoxide detectors, and automatic sprinkler system.

4. Having a written procedure and program for the annual inspection of all work sites.

The FMFD’s fire station facilities are kept in good repair. However, the Study Team found that some FMFD facilities are in need of attention and updating. The Study Team recommends that the FMFD ensure that adequate fire and life safety protection systems are in place, such as smoke detectors, fire alarm systems, carbon monoxide detectors, and automatic sprinkler system.

Additionally, the Study Team recommends that each work site be equipped with a commercial-grade washer and dryer dedicated to the laundering of station uniforms and personnel clothing. *There should be no washing and drying of protective clothing or apparatus towels or similar items in washers and dryers that are used for laundering uniforms and clothing.* In addition, firefighters should not be expected to launder their dirty uniforms at their homes.

Finally, the Study Team recommends that the FMFD implement a Facility Safety Inspection Program that complies with NFPA 1500 and ensures that a comprehensive safety inspection is completed at each of the FMFD facilities on a quarterly basis at a minimum.
Medical and Physical Requirements

An important feature of any firefighting force is the health and well-being of the firefighters. NFPA 1500 clearly identifies several key areas of health and wellness that directly impact the ability of firefighting forces to perform their duties. This section addresses health areas, such as:

1. Ensuring that all candidates and active personnel meet the medical requirements of NFPA 1582 *Standard on Comprehensive Occupational Medical Program for Fire Departments*.

2. Ensuring that all personnel receive annual medical certification for the use of SCBA.

3. Ensuring that all personnel receive a physical performance evaluation in accordance with NFPA 1583 *Standard on Health-Related Fitness Program for Fire Fighters*.

4. Having an established health and fitness program for all personnel in accordance with NFPA 1583 *Standard on Health-Related Fitness Program for Fire Fighters*.

5. Having a confidential and permanent personal health file maintained on each firefighter, which includes the results of all physical and medical evaluations; a history of all occupational injury and illnesses; and an accounting of all hazardous materials and communicable disease exposures.

6. Ensuring that the department has a written infection control program in accordance with NFPA 1581 *Standard on Fire Department Infection Control Program*.

In an effort to help improve the overall health and wellness of the career fire services in the United States, the International Association of Fire Fighters (IAFF) along with the International Association of Fire Chiefs (IAFC) and 10 pairs of local union representatives and their municipalities joined together several years ago to form the Fire Service Joint Labor Management Wellness-Fitness Initiative Task Force (Initiative). The Initiative has become a model for many fire department wellness and fitness programs, and the results have generally been positive on both the labor and management sides—employees remain healthy and fit and the employer sees longevity in a healthy and fit response force.
Chapter Nine
Health and Safety

The Initiative identifies basic components of a health and wellness program for incumbent firefighters and includes areas such as physical fitness, medical assessments, injury rehabilitation, and behavioral health.

The Collective Bargaining Agreement adopts the guidelines of the Fire Service Joint Labor Management Wellness-Fitness Initiative Task Force. The FMFD promotes fitness of its personnel, but does not make on-duty physical training a requirement. Currently there are two certified peer fitness coordinators assigned per shift. This fluctuates when one leaves the department or no longer wants to fulfill these duties. However, in this case, the FMFD is committed to training and certifying an immediate replacement. They are available to work with individuals to help them with their fitness. The FMFD performs annual fitness and physical performance evaluations and each member receives an annual medical physical.

The Study Team is a strong proponent of firefighter wellness and fitness and, therefore, recommends that the FMFD and Health & Safety Committee develop (with the city’s support) and implement an occupational medical plan in accordance with NFPA 1582 Standard on Comprehensive Occupational Medical Program for Fire Departments.

Member Assistance and Wellness Program

Another important part of any fire department health and wellness program is access to help for substance abuse and/or work-related stress. Professionals in the emergency response field understand that the stresses associated with emergency response operations often lead to both physical and mental problems in responders. This chapter of NFPA 1500 addresses the need for personnel assistance and wellness programs; it includes items such as:

1. Providing personnel with a professional assistance program for help with substance abuse, stress, and personal problems that affect fire department work performance.
2. Having a written policy statement on alcohol and substance abuse.
3. Providing a wellness program for all personnel.
The FMFD employees have access to an employee assistance program. In addition, the FMFD does have a written substance abuse policy that addresses aspects of alcohol and substance abuse as related to fire department operations.

The most important component of any emergency response organization is its people; therefore, an organization should strive to take care of its members, both physically and mentally. The Study Team recommends that the FMFD work in conjunction with the Health & Safety Committee to review the current policies and procedures and processes regarding the employee assistance program, alcohol and substance abuse policy, and critical incident stress management to ensure best-practices are in place.

**SUMMARY**

The health and safety of firefighters and EMS personnel should be a major concern of those delivering the services, those receiving the services, and those helping to pay for the services.

Individuals working in public safety, particularly firefighting and EMS personnel, perform one of the most physically demanding, and mentally stressful, occupations in the nation. Quite often, fire and emergency medical personnel are subjected to environments that require rapid, physical and mental response with a minimum of preparation.

Traditionally, at the national level, there has been limited attention paid to the wellness and fitness of firefighters. However, over the past decade, the safety and health of all emergency services providers has come to the forefront of discussion. Fire departments nationwide are implementing programs that help improve and support the health and wellness of their workforce.

A recent initiative between the International Association of Fire Chiefs and International Association of Fire Fighters has resulted in the development and distribution of a Wellness-Fitness Program for firefighters and EMS personnel. This program serves as an outstanding model of how labor and management can work together to reduce firefighter injuries and fatalities while improving the overall health of fire department personnel.

The FMFD has addressed many aspects of a safety and health program. Management and labor seem to be committed to the health and safety of personnel. Resources, personnel
and funds need to be made available for the FMFD to continue to move forward in its efforts.

The FMFD should review the National Fallen Firefighter Foundation’s Firefighter Life Safety Initiatives in an effort to determine how the initiatives can best be supported or accomplished in the FMFD.

**OPTIONS AND RECOMMENDATIONS**

9-1  The Fire Chief should ensure the development of a written risk management plan for the FMFD.

9-2  The Fire Chief should develop a comprehensive, written safety and health policy and implement an organized and effective safety and health program for the FMFD.

9-3  The Fire Chief and city HR department should develop and implement an injury reporting and investigation program that meets the requirements of NFPA 1500.

9-4  The Fire Chief and city should provide the Training Division with the staff necessary to fulfill the responsibilities as departmental Health and Safety Officer with full authority to act on health and safety matters as described in NFPA 1500. The officer should be trained in accordance with NFPA 1521 *Standard for Fire Department Safety Officer, 2015 Edition*, and be fully supported by the FMFD.

9-5  The Fire Chief and Division Chief of Training should develop clear and consistent incident management policies and procedures and implement a formal After Action Review (AAR) policy with guidelines on what incidents shall be reviewed. This policy should vest the authority of conducting AARs with the Division Chief of Training who shall implement and oversee AARs using a pre-agreed upon format. AARs should include of outside subject matter experts (SMEs) to avoid myopic reviews or conflicts of interest;

9-6  The Fire Chief and Division Chief of Training should implement consistent command officer training as outlined in the chapter on Training.
9-7 The Fire Chief should embrace the Lee County fire service operations “playbook,” and develop and implement response and mutual aid policies and procedures so that service delivery when running with other departments in the county is consistent.

9-8 The Fire Chief should develop and implement clear and consistent incident management policies and procedures using an “all-hazards” approach and be NIMS compliant.

9-9 The Study Team recommends that the FMFD implement a component of use of the accountability system in daily training and to ensure that the system used by the FMFD is interoperable with all mutual and automatic aid resources.

9-10 The Fire Chief should ensure that each work site be equipped with a commercial grade washer and dryer dedicated to the laundering of station uniforms and personnel clothing. A separate washer and dryer must be used for rags and apparatus towels.

9-11 The Fire Chief and the FMFD Occupational Health and Health & Safety Committee should implement a facility inspection program in compliance with NFPA 1500 and develop a comprehensive plan to bring all work sites into compliance with applicable codes.

9-12 The Study Team recommends that the Fire Chief ensure that adequate fire and life safety protection systems are in place such as smoke detectors, fire alarm systems, carbon monoxide detectors, and automatic sprinkler system.

9-13 The Fire Chief and the Health & Safety Committee, with city support, should develop and implement an occupational medical plan in accordance with NFPA 1582 Standard on Comprehensive Occupational Medical Program for Fire Departments.

9-14 The Fire Chief in conjunction with the Health & Safety Committee should review the current policies and procedures and processes regarding the employee assistance program, alcohol and substance abuse policy, and critical incident stress
management and identify and implement any changes needed so policies are best-practice based.

9-15 The Fire Chief and the Health & Safety Committee should review the National Fallen Firefighter Foundation’s Firefighter Life Safety Initiatives in an effort to determine how the initiatives can best be supported or accomplished.
CHAPTER TEN
FIRE & RESCUE TRAINING AND EDUCATION

This chapter includes sections on training standards, regulations, programs, and certifications at the national, state, county, and local level—including the process by which training is conducted in the Fort Myers Fire Department (FMFD). EMS training is addressed in Chapter Seven – Emergency Medical Services.

OVERVIEW OF FIRE SERVICES TRAINING

The main objectives of the fire service are to prevent injury and the loss of life and to protect property and the environment. All emergency response personnel providing these services must be fully qualified to safely and effectively perform a wide range of practical skills. These responders must have a broad knowledge base that allows them to adapt quickly to the many different scenarios faced by modern-day emergency responders. Today’s fire department no longer just responds to fire calls; they are an all-hazard response force and must be trained as such.

While on-the-job experiences are important for gaining knowledge, most knowledge and skills must first be obtained through some type of training program. In today’s fire department, effective training is the key to successful emergency operations and service delivery effectiveness.

Training in the fire service over the past decade has undergone significant change primarily because of the changing environment in which it exists. There have been numerous changes in technology that have resulted in significant improvements in equipment for emergency responder use. The fire, rescue, and emergency medical situations that emergency responders encounter are often more complex in the post-9/11 era; emergency responders in all public safety agencies must now prepare for large-scale, catastrophic events, domestic acts of terrorism and civil unrest events in addition to the traditional fire, rescue and incidents. There is also a greater emphasize on regional training made necessary by the more frequent application of mutual aid and the need for more than one jurisdiction responding to major and significant fires and rescue situations.

In the past decade, society has placed more emphasis on environmental concerns, which also poses a challenge to emergency services and their approaches to fire and hazardous situations. Personnel safety has become a primary concern, and technology has evolved
to provide firefighters and EMS staff with more effective protective clothing and equipment. Fire services line-of-duty deaths are more closely analyzed than ever before and have resulted in new, safety-directed training standards and emergency scene operating guidelines.

Nationally, the rate of firefighter injuries and fatalities remains a concern even with all the advances in technology, thus the emphasis on firefighter safety and survival. Fire departments across the United States have worked on refocusing some of their training efforts to “saving their own” from life-threatening situations and on returning to the core principles of firefighting. Fire service professionals realize that a fire department’s commitment to training is an indicator of that department’s commitment to excellence—because the two commitments go hand-in-hand.

Fire service personnel receive their training and education in many different ways and from many different sources. Traditionally, fire service training falls into one of three categories: (1) training courses, (2) company drills (in-service training), and (3) formal education classes. Training courses normally address three areas of concern: (1) new or entry-level employee training; (2) skills maintenance training (refreshers and recertification); and (3) career development training (promotion requirements).

Training courses are generally structured classes conducted by an individual who is skilled and certified in the adult educational process. Training courses usually cover a specific subject area either in its entirety or in a sequential format (e.g., Firefighter I and Firefighter II). Examples of subjects that are covered in training courses for fire personnel include recruit firefighting; advanced firefighting courses; first responder and emergency medical technician courses; pump operations; aerial ladder operations; rescue techniques; hazardous materials; emergency vehicle driver training; company officer training; and incident command courses.

The reinforcement and maintenance of critical job skills and the updating of new information or practices usually occurs through in-service training or company drills. These company drills are planned practice sessions, which are usually conducted by a company officer covering a single, specific topic or practice of a manipulative skill. Examples of in-service drills include the practice of hose layouts, ladder raises, and knot tying.

An aggressive, well-planned company drill training program is very important to a department’s readiness. Because so much of a firefighter’s job requires the use of
manipulative skills, it is necessary to regularly reinforce those skills, ensuring that they are performed effectively, efficiently, and safely each and every time that they are needed.

Formal education courses are generally the responsibility of community colleges and other institutions of higher learning. Formal education is traditionally focused at the collegiate level and involves academic subject areas. These academic courses are designed to assist fire service personnel in performing their jobs as well as providing career development in preparation for promotion. Fire science and emergency medical services degree programs are now available from the Associate to the Master’s Degree levels; there is an increasing number of universities in the United States that are bestowing Doctorate degrees in related areas of study.

The current trend in many career fire departments is to require the successful completion of college-level course work as prerequisite training for promotion. While the undergraduate degrees generally are in the primary area of public safety (Fire Science and EMS), Bachelor and Master’s degrees in Emergency Management, Business Administration, Public Policy and Administration are also considered desirable degrees for fire service executives. While completing an academic program for a degree can be challenging to fire-EMS personnel while working extended work weeks, numerous degree programs are available online from accredited institutions.

**Commission on Fire Accreditation International (CFAI)**

The Commission on Fire Accreditation International (CFAI) emphasizes the role training and education have in the operation of an efficient, safe, and effective fire department. CFAI is the agency accreditation arm of the Center for Public Safety Excellence (CPSE). Progressive fire departments use CPSE and CFAI criterion, and others, as a benchmark for determining the best approach to meeting training and education goals. The CFAI *Training and Education* Performance Indicators, as referenced by the Study Team, are provided below.

**Criterion 8A: Training and Education Program Requirements**

Training and education program activities are identified to support the agency’s needs.

*Performance Indicators*

8A.1 The organization has a process in place to identify training needs. The process identifies tasks, activities, knowledge, skills and abilities required to deal with anticipated emergency conditions.
8A.2 The training program is consistent with the agency’s mission statement and meets its organizational needs.

8A.3 The training program is consistent with legal requirements for performing mandatory training.

8A.4 The department has identified minimum levels of training required for all positions in the organization.

8A.5 A command and staff development program is in place.

**Criterion 8B: Training and Education Program Performance**

Training and education programs are provided to support the agency's needs.

*Performance Indicators*

8B.1 There is a process to ensure that personnel are appropriately trained.

8B.2 The organization provides both short and long range training schedules.

8B.3 The agency has identified the process for developing performance based measurements.

8B.4 The organization provides for evaluation of individual, company or crew and multi-company or crew performance through the use of performance based measurements.

8B.5 There is a training record system that provides for analysis of training needs.

8B.6 The agency maintains individual/member training records.

**Criterion 8C: Training and Education Resources**

Training and education resources, printed and non-printed library materials, media equipment, facilities and staff are available in sufficient quantity, relevancy, diversity and currentness to support the agency’s needs.

*Performance Indicators*

8C.1 Available training facilities and apparatus are provided to support the training needs of the agency.

8C.2 Instructional personnel are available to meet the needs of the agency.

8C.3 Instructional materials are current, support the training program, and are easily accessible.

8C.4 Apparatus and equipment utilized for training are properly maintained in accordance with the agency’s operational procedures, and are readily accessible to trainers and employees.
8C.5 There is a current inventory of all training equipment and resources.
8C.6 A selection process is in place for training and educational resource materials.

The Center for Public Safety Excellence offers several other important services that promote continuous quality improvement in the fire and emergency services. They also have a program for professional credentialing, a technical advisory program, and they offer training symposium to support departments and individuals striving for accreditation and or professional designations.

The CPSE’s Commission on Professional Credentialing (CPC) provide a roadmap for career planning and development through participation in the Professional Designation Program. CPC offers several designations: Chief Fire Officer (CFO), Chief EMS Officer (CEMSO), Chief Training Officer (CTO), Fire Marshal (FM), and Fire Officer (FO). To obtain and retain designation in any of these areas requires a strong educational background; diverse participation in emergency services at the local, state and national level; and demonstrated involvement in the broader community, all validated by emergency services peers. The models used for this designation program were developed to recognize the well-rounded, fire-EMS officer.

Many jurisdictions encourage their officers to achieve these designations and many give preference in hiring and promotion to individuals with a designation. The Study Team is aware of only two officers in FMFD holding a CPC designation, and that designation is only at the Fire Officer (FO) level. The Study Team recommends that officers in the department be encouraged to use the CPC model to strive towards achieving professional designation in their area of interest or specialty.

NATIONAL TRAINING STANDARDS AND PROGRAMS

Over the course of the last three decades, more demands have been placed on emergency responders to increase their level of service, which means that the level of training has had to increase as well. Movements began back in the early 1970s to provide structure and organization to the fire services training process. Those efforts resulted in the development of nationally recognized standards to serve as the basis for fire service training programs.
National Professional Qualifications System

In 1972, the Joint Council of National Fire Service Organizations founded the National Professional Qualifications System in an effort to help guide fire services toward training professionalism through training accreditation and certification. Certification arose over a concern that fire service training was becoming very unbalanced between various jurisdictions, almost to the point of becoming inadequate in some instances. As a result, a nine-member National Professional Qualifications Board (Pro Board) was established by the Joint Council to direct the new accreditation and registry system.

In order to develop a system of nationalized training for firefighters, the Pro Board requested that the National Fire Protection Association (NFPA) delegate to their technical committees, the development of clear standards for use in the certification process. As these standards were developed, they were reviewed, edited, and updated by fire services professionals throughout the United States.

The new NFPA standards were adopted as the basis for the Pro Board certification program. Today, NFPA professional qualifications training standards are the foundation of most fire service training programs found in North America and are recognized as the standards of practice in the fire/rescue training arena.

As this push to develop professionalism in the fire service continued, a National Board on Fire Service Professional Qualifications was established in 1990 to accredit training organizations and to certify individuals meeting the NFPA training standards. Today, the National Board on Fire Service Professional Qualifications accredits 34 states (including Florida) using over 70 levels of 21 different NFPA training standards.

Fire departments with a commitment to the national certification process gain the respect, reputation, and prestige associated with an organization dedicated to professionalism. It is generally recognized in the fire service that departments that teach and certify their personnel to the professional standards will become stronger entities both in their communities and among fellow departments.

National Fire Academy

In 1975, the National Fire Academy (NFA) was established in Emmitsburg, Maryland, as part of the United States Fire Administration (USFA) for the purpose of developing and
delivering fire service training programs on a national basis. Much of the work done by the NFA has been in the areas of executive officer development, fire department operations planning, and organizational management. Through its courses and programs, the NFA works to enhance the abilities of fire and emergency services and allied professionals to deal more effectively with fire and related emergencies—both natural and man-made.

The NFA’s delivery systems are diverse. Courses are delivered at its resident facility in Emmitsburg and throughout the nation in cooperation with state and local fire training organizations, colleges, and universities. In an effort to make training affordable, a travel expense and lodging stipend is made available to students attending resident NFA courses in Emmitsburg.

In addition to the on-campus programs, many of the NFA courses are available through the state fire training programs. To reach the fire services population, the NFA has developed a train-the-trainer program to “hand off” its training courses to state and local agencies. In recent years, the majority of NFA training has been provided via state and regional programs.

The NFA has also developed online offerings that are self-paced and available on a 24hour/7 day a week basis. Some of the offerings include incident command, wildland fire fighting principles, command and control decision making for multi-alarm incidents and emergency response to terrorism. They also developed a very popular online “coffee-break training.” On a weekly basis the NFA posts a short technical training and administrative tips “bulletin” that can be read during a normal coffee break. Most of NFA programs are eligible for CEUs and or other academic credits.

Currently, the NFA has a four-year program for the development of senior fire officers. The Executive Fire Officer (EFO) program consists of four, two-week resident programs: Executive Development, Executive Analysis of Community Risk Reduction, Executive Analysis of Fire Service Operations in Emergency Management, and Executive Leadership. Following each course, the EFO candidate must submit an original research paper within six months. Upon completion of the four-year program, the EFO student is awarded a certificate and is invited to attend an annual conference that focuses on the latest trends in the fire services. Many career fire departments are moving to require their top-level chief officer ranks hold or obtain an EFO certificate.
The Study Team is aware of no EFO graduates in the FMFD, and only three FMFD personnel are currently participating in the EFO program. The Study Team recommends that the Fire Chief encourage and support his senior officers to participate in the EFO program. In addition to the course work, networking opportunities are available with other senior executives throughout the country. During the program, participants are required to do an applied research paper following each on-campus course. These papers often focus on issues the department may be experiencing and often present resolutions for the issues through the research.

Recently, the NFA has developed and is offering a Managing Officer Program (MOP) for first- or mid-level officers to help them jump-start their professional development early in their careers. It also familiarizes them with all the offerings and resources of the NFA. The MOP is a multiyear curriculum that includes four elements of professional development: education, training, experience, and continuing education. The program consists of five prerequisite courses that can be taken online or through classroom delivery in the applicant’s home state: four courses on campus at the NFA and a community-based project.

The NFA also offers courses at the college and university levels for staff and command officers, technical specialists, and executive fire officers. The U.S. Fire Administration continues to work with two- and four-year institutions that offer degrees in fire and emergency medical services through a network they established called Fire and Emergency Services Higher Education (FESHE). Together they have made great strides in promoting higher education for fire and emergency services workers by creating resources and avenues that facilitate achieving academic credentials.

It is recommended that the FMFD’s Training Officer provide information to FMFD officers regarding educational offerings at the NFA and encourage attendance. The NFA provides for travel expenses and housing on campus. The department provides funding for food and backfill of the individual’s position, if necessary.

**STATE TRAINING PROGRAMS**

Fire/rescue training programs in Florida are available through the Florida Bureau of Fire Standards and Training (FBFST). The Bureau is accredited by the National Board of Fire Service Professional Qualifications (Pro Board). FBFST is comprised of three major sections: training, standards, and firefighter safety.
The Training Section of FBFST operates from the Florida State Fire College near Ocala and provides training for both career and volunteer firefighters with programs from basic firefighting through advanced arson investigation. The training in life saving, firefighting and rescue is geared to prepare emergency response personnel for effectively and safely handling all types of emergency situations in their home departments. The college offers over 200 classes annually in addition to hosting specialty seminars. Florida’s state fire training and certification programs are internationally recognized for their excellence.

FBFST’s Standards Section governs the Certified Firefighting Training Centers located throughout the state. They ensure that the faculty, facilities and curriculum are all in compliance with the state statues and administrative codes. It employs a cadre of field representatives who administer exams at the Certified Training Centers for Firefighter II and regionally for Firefighter I certification. The Standards Section also maintains the employment history of all firefighters in the state, and it administers the Firefighters Supplemental Compensation Program as defined by state statute.

The Safety and Health Section of FBFST manages the Florida OSHA rules and assists fire departments in Florida in meeting the FFOSHA requirements. It also provides information and guidance to departments about establishing and maintaining safety and health policies and procedures.

**Instructor Training**

One of the most important components of any training program is instructor training and certification. In Florida, FBFST provides instructor training and certification. The state offers training and certification at the Fire Service Instructor I and II levels following the NFPA 1041, *Fire Service Instructor Professional Qualifications* standard. FBFST requires that all of its instructors be certified in order to instruct in FBFST programs.

The Study Team feels that Florida is one of the leading states in the country providing and maintaining the delivery of fire and rescue training throughout such a diverse state. The state level certification program is well organized and operates with professionalism. The state is commended for its efforts in developing, implementing, and operating such a quality program.
FORT MYERS FIRE DEPARTMENT TRAINING AND EDUCATION

The training and education doctrine is the backbone of any emergency response organization. Without continuing education and well-planned, well-executed, training programs, an emergency response organization will struggle to ensure operational readiness and tactical effectiveness. This, in turn, will have a negative impact on personnel safety and the services provided to the community.

The items presented in this chapter reflect recommended areas of improvement for FMFD. Based on interviews and documentation, the Study Team found a strong push to continuously improve training throughout the FMFD. The Study Team encourages FMFD leadership to ensure that action is taken on each item.

The Study Team found the area of training to be one of the key strengths of the department, but that there is much room for improvement in the area of delivery and accountability. And, while training was repeatedly mentioned as a strength during the employee interview sessions that the Study Team conducted, employees noted that there seemed to be a lack of consistency among company officers with regard to training delivery. Some employees felt there was too much emphasis on company training, which impacted company availability for response and other duties. Additionally, some employees expressed a need for more training with neighboring departments and attendance at regional, state, and national training and educational programs.

FMFD Training Program

The mission of the Training Division is to provide training and employee development opportunities in order to ensure effective, efficient, and safe emergency response. The Training Division is staffed with a Division Chief and is assisted by eight Field Training Coordinators (three Fire Training Coordinators and five EMS Training Coordinators) who provide hands-on fire and medical related training to the Operations Division personnel.

The Division Chief who leads Training Division serves as the Fire and EMS Training Officer for the department. The Division Chief works a traditional “day work” schedule and responds to incidents off-duty as needed, primarily as the department’s safety officer. The eight Field Training Coordinators are regular shift fire personnel who preform their training duties as “extra duties.”
The Division Chief shares administrative support and oversees all aspects of fire and EMS training, hiring and promotional processes, Insurance Service Office (ISO) evaluations and response performance tracking, and all aspects of health and safety — to include infection control and HIPPA compliance.

The workload assigned to the Training Division is beyond the scope of one full-time training officer. The job description that defines the duties and responsibilities of the department “training officer” remains in draft form. The Study Team recommends that the Fire Chief support the adoption of the job description. However, in its current draft form, more definition of the position is needed that more clearly outlines the role and responsibilities of the Training Division Chief. The Study Team also recommends that Fire Chief develop a plan to request adequate staff to fulfill the responsibilities of the Training Division in its numerous diverse areas.

The Training Division Chief has the following responsibilities:

- Design, deliver, schedule, and provide logistics for and keep records for all departmental training. Coordinates training activates with neighboring departments.
- Secure supplies for development of training props.
- Operate as an incident safety officer.
- Handle health and wellness officer issues.
- Support the hiring process for new firefighters.
- Assist with accident and injury investigation.
- Serve as EMS Officer; coordinate training for continuing education and recertification.
- Oversee medical quality assurance for FMFD.
- Represent EMS at meetings and coordinate with Lee County on operational matters and patient care issues.

The Training Officer has a defined schedule for EMS and firefighting and specialty training, such as hazardous materials, water rescue, etc., known at the Annual Training Plan (ATP).

The ATP is designed to satisfy the training requirements of the FMFD and meet or exceed the training requirements of federal, state and local regulatory agencies and third-party agencies. Management of the ATP is the responsibility of the FMFD Training Division. The ATP is monitored and adjusted, when needed, to ensure that scheduled
training meets the needs of the department and our members. Monthly topics and delivery methods have been established.

FMFD’s training is divided into three levels.

- **Level 1** training will be facilitated by the Training Division through department-wide training or programs such as Officer Development.
- **Level 2** training is provided at the station level by the company officer or designee.
- **Level 3** training is assigned by the Training Division and completed by the individual fire department employee.

FMFD’s training subjects are placed into one of six categories.

1. **Company Training** – Training that normally is conducted at the fire station or in the first due area.
2. **Facility Training** – Training that is conducted at a designated Training Facility. Designated facilities for FMFD are the MLK Training Field, the campus of FMIT, the campus of SWFPSA, or the Bonita Springs Fire District Training Site.
3. **Officer** – Continuing education/officer development topics.
4. **Driver/Operator** – Training that teaches or reinforces the knowledge, skills and abilities (KSAs) necessary for the position of Engineer.
5. **HazMat** – Training that teaches or reinforces the KSAs necessary for personnel to function at the Technician or Operations level for HazMat incidents.
6. **Medical** – Cognitive and psychomotor training designed to reinforce KSAs and meet the requirements of the State of Florida DOH and FMFD’s Medical Director.

FMFD uses a web-based program called Target Solutions for training and maintenance of records. This works effectively for the department training on duty and to augment the live practical training.

While practical skill training is provided at stations, multi-company, specialty and live burn training is conducted at one of the four training center facilities available to the FMFD: MLK Training Field, the campus of FMIT, the campus of SWFPSA, or the Bonita Springs Fire District Training Site.
The Study Team believes that the manner in which fire and EMS training is organized in the FMFD meets the needs of the department. However, the workload of the Training Division Chief is very large and some of the areas of responsibility cannot be addressed because of the time needed and limited time available.

Additionally, the Study Team found that company officers are not held accountable by senior department leadership when in-station training is not conducted per the ATP. This issue must be addressed immediately by the Fire Chief so that all company officers understand the importance of the ATP doctrine, administer the doctrine consistently and are held accountable for their performance in regards to the ATP doctrine.

**Training Records**

The Study Team found the FMFD training records maintained on Target Solutions to be acceptable in content. Effort must be made to ensure that all training is captured. Company-level training documentation is important on many levels, including the fire department’s ISO rating.

The Study Team recommends that the FMFD review the process by which all company-level training data are recorded, stored and retrieved and implement the changes needed to bring the recordkeeping more in line with department requirements.

**Officer Training and Certifications**

In terms of training or certification for officers, there are few requirements for an officer in the FMFD to complete basic and advanced officer training courses or certifications. The promotional requirements for the ranks of Captain through Deputy Chief are minimal. The promotional requirements are based primarily on time in service and include little additional training or certification. A review of position descriptions waiting for approval found that the pending revisions offer little additional requirements.

The Study Team finds the absence of officer training and certification requirements in FMFD very concerning. Officers in a fire department represent the leadership of the organization and to have leaders who must function using only on-the-job experience sets those leaders up for possible failure.
The NFPA Fire Officer standards have been in existence since 1976 and are the recognized training standards for fire officers throughout both the public and private sector fire services. The original concept of the professional qualification standards was to develop an interrelated set of performance standards specifically for the fire service. The various levels of achievement in the standards were to build on each other within a strictly defined career ladder.

In the late 1980s, revisions of the standards recognized that the documents should stand on their own merit in terms of job performance requirements for a given field. Accordingly, the strict career ladder concept was abandoned, except for the progression from freighter to fire officer. The later revisions, therefore, facilitated the use of the documents by other than the uniformed fire services. The intent was to develop clear and concise job performance requirements that can be used to determine that an individual, when measured to the standard, possesses the skills and knowledge to perform as a fire officer.

The Study Team believes that a fire department that ignores the NFPA fire officer training standards also fails its officers. In Florida, Fire Officer programs are available through the state training system, and the Study Team believes that those programs should be incorporated into the FMFD officer and promotional requirements.

The Study Team also believes that college-level coursework should be included as a requirement for all officer positions. College-level coursework is an important component to developing professionalism in today’s fire/rescue/EMS delivery organizations. With existing partnership between FBFST and the Florida SouthWestern State College, the ability to obtain the required credit hours for promotion should not be difficult. Additionally, there are numerous online academic programs that facilitate working around fire service duty schedules.

The Study Team recommends the following minimum training and certification and education requirements for FMFD officers:

1. **Fire Chief**
   - Fire Officer IV
   - Hazmat First Responder Operations Level
   - Fire Instructor II
   - Emergency Vehicle Operator Course
Chapter Ten
Fire & Rescue Training and Education

- EMT – Basic
- Incident Management
- ICS 100, 200, 300, 400, 700 and 800
- National Fire Academy – Executive Fire Officer (EFO)
- Bachelor’s degree in Fire Science, Public Administration or related field
  Master’s degree preferred.
- Chief Fire Officer (CFO) Designation

2. Deputy Chief*/Division Chief **
   - Fire Officer IV
   - Hazmat First Responder Operations Level
   - Fire Instructor II
   - Emergency Vehicle Operator Course
   - EMT – Basic (EMT-Paramedic preferred, required for EMS Division Chief)
   - Incident Management
   - ICS 100, 200, 300, 400, 700 and 800
   - National Fire Academy – Executive Fire Officer (EFO) preferred
   - Bachelor’s degree in Fire Science, Public Administration or related field;
     Master’s degree preferred.
   * Chief Fire Officer (CFO) Designation
   ** Chief EMS Officer (CEMSO)
     Chief Training Officer (CTO)
     Fire Marshal (FM)
     Fire Officer (FO)

3. Battalion Chief
   - Fire Officer III
   - Hazmat First Responder Operations Level
   - Fire Instructor II
   - Emergency Vehicle Operator Course
   - Incident Management
   - EMT-Basic (EMT-Paramedic preferred)
   - ICS 100, 200, 300, 400, 700 and 800
   - Fire Academy – Executive Fire Officer (EFO) [completed or in progress]
   - Associate’s Degree in Fire or EMS Science or related field. Bachelor’s degree
     preferred.
4. Captains
   - Firefighter III
   - Fire Officer II
   - Hazmat First Responder Operations Level
   - Fire Instructor I
   - Emergency Vehicle Operator Course
   - EMT-Basic (EMT-Paramedic preferred)
   - ICS 100, 200, 300 and 700
   - 30 credits in fire science or EMS curriculum.

The Study Team also recommends that the FMFD establish a continuing education program for the officers of the department so that they can keep pace with the changes in service delivery, technology, and leadership practices.

Related to training certifications, the Study Team feels it important that all formal (certificate-based) training be delivered by a certified instructor—preferably a certified Fire Instructor II. This certification provides validation to the curriculum and adds professionalism to the training program. Therefore, the Study Team recommends that the FMFD require all certificate-based training (Firefighter I and II, Fire Officer I and II, etc.) have a Fire Instructor II certified instructor serve as the lead instructor for the program. If support instructors are needed, the Study Team recommends that all support instructors be certified to at least the Fire Instructor I level.

Lastly, the Study Team finds that the FMFD must develop a formal process for promotions to include all positions. It is recommended that the Training Division Chief work with the Fire Chief in developing a more formal testing and promotional process. Since this is a specialized human resources process, outside assistance from either another department with experience, the city HR department, or private firm that offers these services should be obtained to validate the process.

**Firefighter Training**

In the traditional fire department setting, firefighter training begins with the introduction of new personnel to the basics of fire and rescue operations through the recruit training process. Recruit training differs from state to state and from jurisdiction to jurisdiction depending upon local standards and requirements. In most career fire/rescue systems, the
recruit training process depends on the size of the department and the proximity to a formal training center.

In the FMFD, most career firefighters are hired with Firefighter II certification. However, to address diversity within the department, the Fire Chief can request to hire an untrained applicant and fund the candidate’s attendance in the local fire academy.

Candidates hired already possessing a Florida Firefighter II certification attend an orientation to introduce them to the FMFD policies, procedures, and operations. The orientation varies in length, either one week or two, depending on size of group.

Each new hire is issued a probationary firefighter task book. The task book is a guide for the assigned company officer to complete as a record of continued training and proficiency of firefighter skills at the 3 month, 6 months, 9 months, 11 months and final (proficiency testing) level. Along with the task book, the company officer completes a daily probationary firefighter evaluation.

**Incident Management Training**

The Study Team noted that there is no requirement in the position descriptions for officers in the FMFD to be certified in the practice of incident management (command). However, Presidential Directive 5, issued in February 2003, requires all emergency response agencies across the nation be trained in and implement the National Incident Management System (NIMS) in order to be eligible to receive federal funding for Homeland Security initiatives.

Without training and certification in incident command, fire departments are exposing their organizations to a high level of liability and the potential for disastrous outcomes. In almost every firefighter line-of-duty death that has occurred on the fireground over the last 10 years in the United States, investigative findings have listed ineffective (or absent) incident command and poor crew accountability as common contributing factors to those deaths.

Data provided to the Study Team by the FMFD Training Division show that the FMFD is in compliance with the NIMS training requirements. However, while the Study Team acknowledges that this training exists within the FMFD, formal certification is not required and should be.
The Study Team believes that command officer development and skills maintenance is a critical element of maintaining a professional, well-trained, all-hazards command staff. To support those efforts in the FMFD, the Study Team recommends that the FMFD develop and implement a command officer professional development program that includes initial training on incident command and incident scene safety for chief officer candidates and continuing education requirements for existing chief officers.

**Skill Maintenance Training**

Another important area of a fire department’s training program is the continued maintenance of knowledge and skills. In-service training, as it is commonly referred to, generally covers a wide area of topics including basic firefighting skills, emergency vehicle driving, and federal government mandated hazardous materials refresher training.

When developing a company drill training program, the Fire Suppression Rating Schedule used by the Insurance Services Office (ISO) should be considered. The Schedule is actually a manual that is used by ISO to review the firefighting capabilities of individual fire departments. One section of the Schedule reviews a fire department’s training functions and assigns points (credits) based upon certain training items. The following list from ISO provides examples of the training required for all fire department personnel for which credit points are allotted:

1. Half-day drills (three hours), eight per year
2. Half-day multiple company drills (three hours), four per year
3. Night drills (three hours), two per year
4. Company training at the fire station, 20 hours per member, per month
5. Leadership/command training for all officers, two days per year
6. Half-day sessions for driver and operator training, four per year

The Study Team noted that the FMFD ATP addresses these requirements.

**Interoperability Training**

In terms of multiple-company operations and mutual aid interoperability training, the Study Team was advised that the Training Division seeks to involve surrounding fire departments to participate in drills. However, it was unclear to the Study Team the frequency of this hands-on, drill-type training with surrounding jurisdictions. The Study
Team noted on several occasions a reference for the need of the FMFD to embrace the “Lee County Fireground Playbook” and the need to conduct multijurisdictional training on this guide.

As such, the Study Team believes that multi-company, multi-jurisdictional training events are important to the operational effectiveness for the city and the region. The Study Team recommends that FMFD add multijurisdictional training to the ATP.

**Driver Operator Training**

Of all the services provided by a fire/rescue department, two of the positions that provide a great exposure to liability are the provider of emergency medical care and the driver of an emergency vehicle. In both cases, training needs to be extensive, well documented, and recertified on a regular schedule.

The Florida Department of Labor’s Bureau of Labor Standards issued Standard 12-179 Chapter 7: Minimum Driver Training Requirements for Fire Apparatus on March 2, 2011. While the standard is short in length, its content is clear and concise and “identifies the job performance requirements for career and volunteer firefighters who drive fire apparatus in order to reduce accidents, injuries and loss of fire equipment.”

The Study Team found a number of FMFD policies, procedures and notices that address driving and operating FMFD apparatus (fire and EMS). In addition, apparatus driver/operator training is a focus for the ATP. In addition to the driver/operator training consisting of the two Florida State Fire College required courses for certification as a Pump Operator, on-the-job training delivered by the Company Officer and Engineers, and completion of the Acting Driver Task Book, the ATP expands upon the current practice by introducing formalized training sessions designed to educate and reinforce the requisite knowledge, skills and abilities (KSAs) needed for operating fire apparatus. In addition, the ATP requires EVOC refresher and identifies Target Solutions Courses for the Driver/Operator that are assigned for completion by all Engineers and Acting Engineers.

**Training Facilities**

While much training is done in, and on the grounds of the fire stations, the FMFD does operate the MLK Fire Training Field and makes use of the fire training facilities on the
The training tower at the MLK site is used for ladder and other limited skills training, but does not function fully as a training tower because of its location and condition. The Study Team finds this site is underdeveloped to meet the training needs of the FMFD and recommends that the FMFD make plans to re-develop this site or make an organizational decision to abandon this site for use of other nearby facilities. The FMFD is fortunate to have access to the training sites operated by the Fort Myers Fire Academy. The Study Team recommends that this practice be continued.
SUMMARY

The main objective of the fire service is to prevent injury and loss of life and to protect property and the environment. Training is a key element to successful emergency scene operations and organizational effectiveness. Training in the fire, rescue, and EMS disciplines is also a career-long venture, starting with recruit and basic training programs and progressing to more sophisticated advanced training and participation in higher educational opportunities. Between formal training programs and educational courses there must be ongoing reinforcement of knowledge and hands-on skills provided to all ranks.

In general, the Study Team was very impressed with the organization and efforts of the Training Division. However, the Training Division must be given the resources and authority necessary to perform the skills training and practical evolutions and hold the members accountable for training performance.
It is very apparent from speaking with FMFD officers and firefighters that they are committed to providing aggressive fire and rescue services. As such, it is imperative that the FMFD operate a robust training program. In order to accomplish this, the Training Division is in need of additional dedicated staff and resources to meet the needs of the firefighters and officers of the FMFD.

The Study Team realizes that the recommendations suggested will present some challenges to the leadership of FMFD and its members, but these recommendations are necessary to provide the department members with the training and education needed to take the department to a higher level of performance.

**OPTIONS AND RECOMMENDATIONS**

10-1 The Fire Chief and senior staff should develop and implement a command officer professional development program that includes initial training on incident command and incident scene safety for chief officer candidates and continuing education requirements for existing chief officers.

10-2 The Fire Chief should encourage officers to use the CPC model to strive toward achieving professional designation in their area of interest or specialty. The Fire Chief should set the example by going through the designation process and securing CFOD.

10-3 The Fire Chief should encourage and support his senior officers to participate in the Executive Fire Officer program.

10-4 The Training Division Chief should provide information to department officers regarding educational offerings at the NFA and encourage attendance.

10-5 The Fire Chief should develop a new position description that more clearly defines the role and responsibilities of the Training Division Chief.

10-6 The Fire Chief is encouraged to request adequate staff to fulfill the responsibilities of the Training Division.
10-7 The Fire Chief is encouraged to take the necessary steps to ensure that all Company Officers are supporting, following, and adhering to the ATP. Holding those who do not follow the ATP accountable must be a priority with no exceptions.

10-8 The Study Team recommends that the FMFD review the process by which all company-level training data are recorded, stored and retrieved and implement the changes needed to bring the recordkeeping more in line with Department requirements.

10-9 The Fire Chief and the city should implement the following minimum training, certification and education requirements for FMFD officers.

1. **Fire Chief**
   - Fire Officer IV
   - Hazmat First Responder Operations Level
   - Fire Instructor II
   - Emergency Vehicle Operator Course
   - EMT – Basic
   - Incident Management
   - ICS 100, 200, 300, 400, 700 and 800
   - National Fire Academy – Executive Fire Officer (EFO)
   - Bachelor’s degree in Fire Science, Public Administration or related field; Master’s degree preferred.
   - Chief Fire Officer (CFO) Designation

2. **Deputy Chief*/Division Chief **
   a. Fire Officer IV
   b. Hazmat First Responder Operations Level
   c. Fire Instructor II
   d. Emergency Vehicle Operator Course
   e. EMT – Basic (EMT-Paramedic preferred, required for EMS Division Chief)
   f. Incident Management
   g. ICS 100, 200, 300, 400, 700 and 800
   h. National Fire Academy – Executive Fire Officer (EFO) preferred
Chapter Ten
Fire & Rescue Training and Education

i. Bachelor’s degree in Fire Science, Public Administration or related field;
   Master’s degree preferred.
   * Chief Fire Officer (CFO) Designation
   ** Chief EMS Officer (CEMSO)
   Chief Training Officer (CTO)
   Fire Marshal (FM)
   Fire Officer (FO)

3. Battalion Chief
   a. Fire Officer III
   b. Hazmat First Responder Operations Level
   c. Fire Instructor II
   d. Emergency Vehicle Operator Course
   e. Incident Management
   f. EMT-Basic (EMT-Paramedic preferred)
   g. ICS 100, 200, 300, 400, 700 and 800
   h. Fire Academy – Executive Fire Officer (EFO) [completed or in progress]
   i. Associate’s Degree in Fire or EMS Science or related field. Bachelor’s degree preferred.

4. Captains
   a. Firefighter III
   b. Fire Officer II
   c. Hazmat First Responder Operations Level
   d. Fire Instructor I
   e. Emergency Vehicle Operator Course
   f. EMT-Basic (EMT-Paramedic preferred)
   g. ICS 100, 200, 300 and 700
   h. 30 credits in fire science or EMS curriculum.

10-9 The Fire Chief and FMFD senior staff should develop a delivery plan for the training courses needed for the existing officers so that the officers have an opportunity to comply with the revised training and certification requirements.

10-10 The Training Officer should establish a continuing education program for the officers of the department so that they can keep pace with the changes in service delivery, technology, and leadership practices.
10-11 The Study Team recommends that the FMFD require all certificate-based training (Firefighter I and II, Fire Officer I and II, etc.) have a Fire Instructor II certified instructor serve as the lead instructor for the program. If support instructors are needed, the Study Team recommends that all support instructors be certified to at least the Fire Instructor I level.

10-12 The Study Team finds that the FMFD must develop a formal process for promotions to include all positions. It is recommended that the Training Division Chief work with the Fire Chief in developing a more formal testing and promotional process. Since this is a specialized human resources process, outside assistance from either another department with experience, the city HR department, or private firm that offers these services should be obtained to validate the process.

10-13 The Study Team recommends that the FMFD develop and implement a command officer professional development program that includes initial training on incident command and incident scene safety for chief officer candidates and continuing education requirements for existing chief officers.

10-14 The Study Team believes that multi-company, multi-jurisdictional training events are important to the operational effectiveness for the city and the region. The Study Team recommends that FMFD add multijurisdictional training to the ATP.

10-15 The Study Team finds that the MLK Fire Training Field is underdeveloped to meet the training needs of the FMFD and recommends that the FMFD make plans to re-develop this site or make an organizational decision to abandon this site for use of other nearby facilities. The FMFD is fortunate to have access to the training sites operated by the Fort Myers Fire Academy. The Study Team recommends that this practice be continued.
CHAPTER ELEVEN
FIRE PREVENTION PROGRAMS

This chapter addresses all aspects of current life and fire safety inspections and code enforcement, public education, and fire investigation functions accomplished by the Fort Myers Fire Department (FMFD). The programs were compared to national program standards with recommendations for improvement.

BACKGROUND

The National Fire Protection Association recommends a multifaceted, coordinated risk reduction process at the community level to address local risks. This requires engaging all segments of the community, identifying the highest priority risks, and then developing and implementing strategies designed to mitigate the risks.

Fire departments can serve a vital role in the concerted community risk reduction effort. The public safety needs of communities increasingly place fire department personnel in the role of emergency responders—first on the scene not only in a fire emergency, but in medical emergencies, natural disasters, and acts of terrorism, as well.

With a proven record in prevention and responding effectively to fire emergencies, fire safety advocates often have the credibility and expertise to organize their communities around broader safety and risk issues. Most fire department leaders are encouraging their members to get more involved in their communities to strengthen organizational credibility and influence. There are a variety of ways this can be accomplished, and community risk reduction is the program that provides perhaps the greatest opportunity.  

Multifaceted coordinated risk reduction in a community may be addressed by a “cycle” of resources provided by the fire department in coordination with other community entities. These resources include public education so citizens are aware of hazards and medical challenges, how to prevent them, and what to do should they occur; engineering/code enforcement so fire and life safety is an inherent part of the community infrastructure and where violation compliance is achieved; emergency response so that when there is a failure in the education, engineering/code enforcement part of the

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1 Kirtley, Edward, N.F.P.A. Community Risk Reduction, Fire Protection Handbook
cycle the emergency can be resolved; and fire investigation or EMS analysis where the incident is documented, the cause determined and steps taken so it will not happen again.

With regard to fire protection:

“One of the true measures of a fire department’s effectiveness is the amount of loss experience in the community or jurisdiction. If hazards and unsafe acts can be reduced there will be a resultant reduction in the area’s fire experience . . . in order to reduce the losses due to fires, effective, focused fire prevention effort must take place.”

The NFPA Fire Protection Handbook, Seventeenth Edition, Section 10, Chapter 4, describes the elements of a fire prevention program as follows:

1. Activities that relate to construction, such as building codes, the approval of building and facility plans, and occupancy certification and re-certification for new occupants. Also included may be a sign-off for the presence of smoke detectors when new or old properties are sold.

2. Activities that relate to the enforcement of codes and regulations, such as inspections of certain occupancies, the licensor of certain hazardous facilities, the design of new regulations and codes, and legislation to adopt model codes.

3. Activities that relate to the reduction of arson, such as fire investigation and the collection of information and data related to setting fires. Included may be arson investigation and related court proceedings, and programs such as counseling for juvenile fireshape.

4. Activities that relate to the collection of data helpful in improving fire protection, such as standardized fire reporting, case histories and fire research.

5. Activities that relate to public education and training, including fire prevention safeguards, evacuation and personal safety steps, plant protection training for industrial and other work groups, hazardous materials and device safeguards, and encouragement to install early warning and other built-in signaling and extinguishing devices. Very popular are programs for school children, such as NFPA’s Learn Not to Burn curriculum and self-help classes such as water safety and similar “Stay Alive Till We Arrive” projects.

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CFAI FIRE PREVENTION/LIFE SAFETY CRITERIA

The CFAI accreditation criteria related to Fire Prevention/Life Safety that is relevant to this study is as follows:

There is an adequate effective and efficient program directed toward fire prevention, life safety, risk, and reduction of hazards, the detection, reporting and control of fires and other emergencies, the provision of occupant safety and exiting and the provisions for first aid firefighting equipment.

Performance Indicators:

1. The authority having jurisdiction has an adopted fire prevention code.
2. The code enforcement program is designed to ensure compliance with applicable fire protection law and agency objectives.
3. There is adequate staffing to meet agency objectives.
4. There is a plan check system in place to insure buildings are built in accordance with adopted codes and ordinances.
5. There are adequate equipment and supplies allocated to the fire prevention function.
6. There are standard operating procedures/general operating guidelines for the fire prevention/life safety program.
7. There is an information system in place to record activities and transactions and to determine the effectiveness of the fire prevention program and its efforts in risk reduction.
8. There is a periodic appraisal made to determine if there is a balancing of the fire hazard risk against the fire suppression capabilities of the agency and/or system, and if not, what actions need to be taken to balance the relationship.

LEGAL AUTHORITY FOR FIRE PREVENTION

State of Florida

The State Fire Marshal adopts the Florida Fire Prevention Code at three-year intervals as required by Chapter 633.202, Florida Statutes. This complex set of fire code provisions are enforced by the local fire official within each county, municipality, and special fire district in the state.

The state allows a county, municipality or special district to also have local amendments applicable only to its community. The City of Fort Myers has no such amendments on file with the State Fire Marshal.

City of Fort Myers

Current Building Code

The Fifth Edition (2014) of the Florida Building Code (FBC) has been adopted by the state and is in effect at the City of Fort Myers as of June 30, 2015. This includes the Accessibility, Building, Energy Conservation, Existing Building, Fuel Gas, Mechanical, Plumbing and Residential Codes. All permit applications submitted on or after the effective date referenced above are subject to compliance with the aforementioned code editions.

Current Electrical Code

The 2011 edition of the National Electric Code is in effect in the City of Fort Myers as of June 30, 2015. All permit applications submitted on or after the effective date are subject to compliance with the revised code edition.

Current Fire Prevention Code

The 5th (2014) Edition of the Florida Fire Prevention Code (NFPA) has been adopted by the state and became effective in all jurisdictions on December 31, 2014. All permit applications submitted on or after the effective dates reflected above, are subject to compliance with the aforementioned code editions.

Chapter 40 - FIRE PREVENTION AND PROTECTION, of the Fort Myers Code of Ordinances, adopts, by reference, the Florida Fire Prevention Code and establishes fire prevention standards:

(a) All regulations issued by the state fire marshal under the authority of F.S. ch. 633 shall be enforceable as provided in F.S. § 633.118. The fire marshal or
designee, shall have such assistance as determined necessary from other officials of the city in the discharge of such duties.

(b) In accordance with the state legislature, which sets the standards for construction, the city recognizes the latest editions of the following codes:


(2) The standards and code sections of the National Fire Codes, as published by the National Fire Protection Association (NFPA), as adopted by the rules of the Division of the State Fire Marshal, § 69A-3.012.

**Fire Prevention Division**

The Fire Prevention Division (FPD) is responsible for the enforcement of fire and life safety codes pertaining to all commercial and multi-family structures. This division also completes fire plan reviews, fire inspections, and investigates concerns involving fire and life safety hazards received from the public and other agencies.

Fire Inspectors identify hazards and take mitigating action with the goal of educating occupants and protecting lives and property. The FMFD staffs the FPD with a Fire Marshal, a Senior Fire Inspector, a Plan Reviewer, two Field Inspectors and a Senior Staff Assistant.

**Permit Fees**

The FMFD assess and collects fees for inspections performed and permits issued by FMFD Fire Prevention Division.

Adjacent fire districts have comprehensive fee schedules for inspections of existing commercial occupancies required under the Florida Fire Prevention Code, false alarm nuisance fees and special event permit fees.

As discussed later in this chapter, the FPB is challenged to inspect commercial occupancies on an annual basis. And, while the Study Team recognizes the need for the city to remain business friendly, fire and life safety is a basic tenet that most people assume is assured by the city when patronizing local businesses. The Study Team recommends that the city consider adopting initial fees for annual inspections performed.
by the FMFD and that those fees be directly utilized to ensure a comprehensive annual commercial inspection program.

Figure 11.1
FMFD Permit and Inspection Fee Schedule

<table>
<thead>
<tr>
<th>PERMIT TYPE</th>
<th>FEE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Sprinkler NEW/ADDITION</td>
<td>$50.00, plus $50.00 for each new riser or addition to each existing riser and $3.00 per new head, with a $25.00 minimum.</td>
</tr>
<tr>
<td>Fire Sprinkler REMODELING W/O ADDITIONS</td>
<td>$50.00, plus $3.00 per relocated head, with a $25.00 minimum. Revisions to permits issued shall be subject to a revision fee of $30.00, plus charges of any additional heads.</td>
</tr>
<tr>
<td>Fire Sprinkler LETTER PERMITS</td>
<td>Letter permits are available for a fee of $50.00 for alterations and additions to fire sprinkler systems consisting of six (6) or less heads.</td>
</tr>
<tr>
<td>Fire Standpipes NEW/ADDITION WET OR DRY</td>
<td>$50.00, plus $50.00 for each riser or each existing riser altered.</td>
</tr>
<tr>
<td>Fire Pumps NEW</td>
<td>$50.00, plus $75.00 for pumps up to and including 500 gallons per minute (GPM) or $100.00 for all pumps above 500 GPM.</td>
</tr>
<tr>
<td>Fire Pumps ALTERATIONS</td>
<td>The permit fee for alterations to existing pumps shall be $40.00.</td>
</tr>
<tr>
<td>Pre-engineered Fire Suppression Systems, excluding total flood systems NEW/ALTERATIONS</td>
<td>$50.00, plus $20.00 per new bottle or container of suppression agent, plus $15.00 per suppression nozzle altered. This includes, but is not limited to, hood systems, spray booths and mixing rooms.</td>
</tr>
<tr>
<td>Total Flood pre-engineered Fire Suppression Systems NEW</td>
<td>$50.00, plus $65.00 per bottle or container of suppression agent. This includes, but is not limited to, FM200 and all clean agent systems.</td>
</tr>
<tr>
<td>Total Flood pre-engineered Fire Suppression Systems ALTERATIONS</td>
<td>$50.00, plus $25.00 per suppression head or detection head altered. This includes, but is not limited to, FM200 and all clean agent systems.</td>
</tr>
<tr>
<td>Fire Alarm Systems ZONED</td>
<td>$50.00, plus $25.00 per indicating and initiating zone. Revisions to permits issued shall be subject to a revision fee of $30.00, plus charges for any additional devices.</td>
</tr>
<tr>
<td>Fire Alarm Systems INTELLIGENT</td>
<td>$50.00, plus $3.00 per indicating or initiating device, with a $25.00 minimum. Revisions to permits issued shall be subject to a revision fee of $30.00, plus charges for any additional devices.</td>
</tr>
<tr>
<td>Fire Alarm Systems LETTER PERMITS</td>
<td>Letter permits are available for a fee of $50.00 for emergency panel replacements (without any system or device upgrades); tie in of duct detectors or suppression systems to a building fire alarm system.</td>
</tr>
</tbody>
</table>
### Fire Prevention Programs

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring Permit ONLY</td>
<td>The fee for a monitoring permit shall be $40.00 for land lines only. Cellular, antenna, or similar shall be $40.00 for monitoring, $50.00 submittal, plus $3.00 per device, with a $25.00 minimum.</td>
</tr>
<tr>
<td>Fire Hydrant Flow Test</td>
<td>The fee for a flow test shall be $75.00 per test conducted.</td>
</tr>
<tr>
<td>Pyrotechnics INDOOR/OUTDOOR</td>
<td>The permit fee for indoor/outdoor pyrotechnics shall be $150.00, plus special inspection fees in accordance with section 40-4(f).</td>
</tr>
<tr>
<td>House Burn Permit</td>
<td>The fee for a house burn permit shall be $0.25 per square foot rounded up to the nearest dollar, with a minimum fee of $250.00.</td>
</tr>
<tr>
<td>Installation, Removal/Abandon in place of Pollutant Storage Tanks UNDERGROUND</td>
<td>$50.00, plus $100.00 per tank, for tanks over 60 gallons.</td>
</tr>
<tr>
<td>Installation, Removal/Abandon in place of Pollutant Storage Tanks ABOVEGROUND</td>
<td>$50.00, plus $75.00 per tank, for tanks over 60 gallons.</td>
</tr>
<tr>
<td>LPG Tanks Installation/Removal or Abandon UNDERGROUND</td>
<td>$50.00, plus $100.00 per tank, for tanks 100 gallons (420 pounds) or greater.</td>
</tr>
<tr>
<td>LPG Tanks Installation/Removal or Abandon ABOVEGROUND</td>
<td>$50.00, plus $75.00 per tank, for tanks 100 gallons (420 pounds) or greater.</td>
</tr>
<tr>
<td>Blasting</td>
<td>$50.00, plus $0.50 per shot rounded up to the nearest dollar.</td>
</tr>
<tr>
<td>Underground Fire Line NEW/ADDITION</td>
<td>$50.00, plus $3.00 per linear foot, with a $25.00 minimum. Revisions to permits issued shall be subject to a revision fee of $30.00, plus charges for any additional linear footage. See section 122-154 for fire line tap inspection fees.</td>
</tr>
<tr>
<td>Fire Backflow, double detector check valves</td>
<td>The permit fee for the installation of a new double detector check valve serving fire systems shall be $50.00. See section 122-495(b)(4).</td>
</tr>
<tr>
<td>Tar Kettles</td>
<td>The permit fee for a single tar kettle shall be $75.00. All annual tar kettle permits will expire on December 31st of each year and must be renewed no later than January 1st of each year. Renewal permits will be issued after completion of an application form, submittal of contractor license information and payment of a $750.00 renewal fee. Permits issued to contractors shall apply to all jobs within the City of unlimited inspections for the calendar year.</td>
</tr>
<tr>
<td>Master Plan Review</td>
<td>$50.00</td>
</tr>
<tr>
<td>Fire Alarm and Fire Sprinkler</td>
<td>$50.00</td>
</tr>
<tr>
<td>Letter Permits</td>
<td>$25.00</td>
</tr>
</tbody>
</table>
Chapter Eleven
Fire Prevention Programs

<table>
<thead>
<tr>
<th>INSPECTION TYPE</th>
<th>FEE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special</td>
<td>Inspections performed outside normal working hours, shall be billed at a minimum fee of $135.00 for the first two hours, portal-to-portal, and $60.00 for each hour thereafter, within a minimum fee of $135.00.</td>
</tr>
<tr>
<td>State Agency required Inspections</td>
<td>The fee for state agency required inspections shall be $75.00, per facility.</td>
</tr>
</tbody>
</table>
| Annual Fire Inspections | Annual fire inspection fees are as follows:  
  - Initial Inspection: No Fee  
  - First Reinspection: No Fee  
  - Second Reinspection: $50.00  
  - Third Reinspection: $50.00  
  - Subsequent reinspections will be subject to legal action. |
| Tent                  | The fee for tent inspections shall be $35.00 per event for tents larger than 100 square feet. Tents 100 square feet or smaller are exempt from permitting and fees, but will be subject to fire inspections. If event requires after hours or weekend inspections the fire special inspection fees are required to be paid. |
| Carnivals             | The fee for carnival inspections shall be $150.00. |

**FMFD BUILDING PLANS REVIEW**

The review of plans and specifications is a code enforcement process intended to ensure compliance with the fire protection and life safety provisions of the applicable codes and standards. The fire plans examiner reviews site plans, building and fire protection system plans, means of egress, and other fire and life safety plans and specifications.

Cooperation among city departments is a key component to the success of any program. The FMFD enjoys this cooperation with the Community Development Department. The city and the FMFD is commended for their “one-stop-shop” approach to new building and development in the city. The Study Team recommends this approach be continued and that the current Fire Prevention Division resources be reviewed annually to determine if additional resources are needed.

**FIRE CODE INSPECTIONS**

The State of Florida Fire Prevention Code (FFPC) requires periodic inspections. The term “periodic” is subject to various interpretations. Property inspections (used to find and eliminate potential fire and life safety hazards) are an important part of an overall
The fire code stipulates inspection requirements for those occupancies and processes subject to the code and those certain, more hazardous, properties must have a permit to operate and, in order to receive a permit, must have a fire safety inspection. An inspection by the authority having jurisdiction (AHJ) should indicate, after insuring compliance that a minimum degree of safety exists. Without an inspection this cannot be assured.

The FMFD inspects all buildings within the city except for one- and two-family residential occupancies, which are exempted by the Florida Fire Prevention Code. Based on the number of required inspections and the staff available, the FMFD is unable to inspect all eligible properties on an annual basis.

**Figure 11.2**

FMFD Fire Inspection Workload
In addition to the obvious life safety risk implications for citizens, tourists and firefighters due to not completing inspections on a regular basis, the omission could present a significant economic loss liability if a lucrative or historical property were to be lost due to a cause that may have been prevent through periodic inspection.

There are limited resources available as a guideline for the number of inspectors required to accomplish a given inspection workload for a jurisdiction. As an example, the State of Texas has added an addendum to their Insurance Services Office (ISO) grading schedule to give credit for accomplishing fire safety inspections. The Texas Addendum to the Fire Suppression Rating Schedule provides a significant guideline regarding staffing resources needed to complete an effective fire safety inspection program.

According to the Texas Addendum, one full-time inspector can be expected to complete approximately 480 inspections per year. The computation is based on two inspections per day, multiplied by 20 work days/month times 12 months. Using this formula, the FMFD would need 16.5 fire inspectors to perform the annual inspections. This standard, while “best case,” is cost prohibitive for most communities.

The FMFD does not employ any fire inspectors dedicated to inspecting existing properties. It is understood that the FMFD fire inspection personnel have workload responsibilities in addition to annual maintenance inspections. Permits, systems tests, special event inspections and plans, to name a few. The inspection workload in many departments is partially offset by utilizing “in-service” fire company personnel to complete a portion of the required maintenance inspections. This approach, while efficient, is often fraught with problems in consistency, business owner frustration, degradation in response time performance, etc.

As noted above, The State of Florida Fire Prevention Code (FFPC) requires periodic inspections. The Study Team recommends that the FMFD define the structures and target hazards that should be inspected on an annual and bi-annual basis and develop a plan, integrating a system of “self-inspections” that can be conducted by the business in low hazard occupancies, that can relieve some of the workload on the inspection staff and present this plan for consideration for funding through initial inspection fees.
FIRE INVESTIGATION

CFAI Fire Investigation Criteria

The CFAI accreditation criteria related to Fire Investigation that is relevant to this Study is as follows:

There is an adequate effective and efficient program directed toward identification of the causes and origins of fires, explosions and other emergency situations that endanger life or property.

Performance Indicators

1. There are methods and procedures in place to investigate the cause and origin of all reported fires.
2. The agency has adequate staffing to accomplish its stated objectives.
3. There are adequate equipment and supplies allocated to the fire cause and investigation program.
4. There is agreement and support from other agencies to aid the agency in accomplishing its goals and objectives.
5. There is an information system in place to document fire investigation activities and to provide data for analyzing program results.
6. There are standard operating procedures, general operating guidelines for the fire cause and investigation program.
7. There is a periodic appraisal made on the effectiveness of the fire investigation program.

Fort Myers Fire Investigations

As adopted by the Florida Fire Prevention Code; N.F.P.A. Standard 1, Fire Code:

The AHJ (City of Fort Myers) shall have the authority to investigate the cause, origin, and circumstances of any fire, explosion, release of hazardous materials, or other hazardous condition.

In the municipal cycle of providing life and fire safety, the investigation of fires and other emergencies is imperative to developing and maintaining an effective hazard and risk
prevention program. Whether fire or medical oriented, the analysis of the results of these investigations, inquires and documentation become an integral element in the fire department’s determination of the appropriate prevention and intervention activities.

The data collected and analyzed provide a resource for the FMFD to develop an effective fire prevention program, improve fire safety legislation, identify life and fire safety education programs, describe the city fire problems, and evaluate fire protection capabilities.

Currently, the FMFD Fire Marshal is not the primary person to investigate all fires within the City of Fort Myers. Investigations are performed by various members of the Department who have State of Florida “Fire Investigation” certification and are assisted by the State Fire Marshal and the Fort Myers Police Department.

Pursuant to Section 633.112, F.S., the State Fire Marshal is required to investigate any fire in which property has been damaged or destroyed and where there is probable cause to believe that the fire was the result of “carelessness or design.” Fires meeting the following criteria shall be presumed by the State Fire Marshal to be by “carelessness or design” for the sole purpose of activation of the Bureau of Fire and Arson Investigations of the Division of State Fire Marshal in accordance with this rule:

1. Any fire with a projected direct dollar loss exceeding $1,000,000.
2. Any fire involving a civilian death, or an injury that is likely to result in death.
3. Any fire in which the cause is not readily determined by an initial investigation.
4. Any fire involving the suspected failure of a fire suppression or fire detection system.

Full-time fire investigators are expected to possess an NFPA 1033, Standard for Professional Qualification for Fire Investigators certification and be knowledgeable with NFPA 921, Guide for Fire and Explosion Investigations.

These references support the fire investigator’s need to be familiar with the following subjects:
- Fire science
- Fire chemistry
- Thermodynamics
The Study Team recommends that the FMFD formalize the fire investigation responsibility under the direction of the FMFD Fire Marshal within the FMFD Fire Prevention Division.

**LIFE AND FIRE SAFETY PUBLIC EDUCATION**

**CFAI Public Education Criteria**

The CFAI accreditation criteria related to Public Education that is relevant to this Study is as follows:

There is a public education program directed toward the agency’s mission.

*Performance Indicators*

1. There is a public education program that includes individual, business and community participation.
2. The agency has staffing to accomplish the program’s mission, goals and objectives.
3. There are adequate equipment and supplies allocated to the public education program.
4. The public education programs are targeted toward specific audiences based on program analysis.
5. The agency’s information system allows for documentation and analysis of its public education program.
6. There is a periodic appraisal made to determine the effectiveness of the public education program and its effect on eliminating unacceptable risks.
Fort Myers Fire Code – Public Education

As adopted by the Florida Fire Prevention Code; N.F.P.A. Standard 1, Fire Code:

The AHJ (City of Fort Myers) shall have the authority to develop and implement a public fire safety education program as deemed necessary for the general welfare with respect to the potential fire hazards within the jurisdiction.

The AHJ (City of Fort Myers) shall have the authority to ensure duly authorized public fire safety education programs or public fire safety messages are disseminated to the general public.

Public Education – Generally

Public education must be customized to protect those at highest risk of a fire in the community. This strategy helps fire departments implement evidence-based Community Risk Reduction (CRR) principles that have proven effective in other countries.

Homes remain the primary prevention target. Research shows that 81% of all fire deaths and 76% of all fire injuries occur in homes, resulting in an estimated 2,560 deaths, 13,275 injuries, and $6.6 billion in property loss (USFA). Vision 20/20, a project of the Institution of Fire Engineers U.S. Branch funded by a federal Fire Prevention and Safety Grant funding in a cooperative agreement with the U.S. Department of Homeland Security, recently reported that 51% of the homes visited in its study had no working smoke alarm—not a single one. This finding is crucial, since in the U.S., 38% of home fire deaths are in homes with no working smoke alarms; 24% are in homes where smoke alarms were present but didn't work (NFPA).

Public fire and life safety education programs should be a major part of any fire prevention program. Community outreach, education, and awareness programs should start as early as possible in preschool and/or elementary school and continue through high school.

Adult programs should also be available to increase fire and life safety awareness in the community. A review of the community’s fire records can help to identify high-risk problems or areas in the community that require extra fire and life safety efforts.

Fire education programs in schools should be a year-round endeavor and not merely a special program conducted during an annual Fire Prevention Week. School systems can
incorporate fire safety programs into their existing curricula. The fire prevention authority can help by advising schools on the proper training of presenters and by identifying appropriate materials to reinforce the fire safety message presented. NFPA’s Risk Watch® and Learn Not to Burn® programs, for example, provide the training and materials needed for such a fire safety effort.

The media can be a useful partner in fire safety awareness initiatives for adults and children. Television and radio stations might run public safety messages free of charge as part of their licensing requirements. In addition, many cable companies offer public access as part of their contract to provide service to the community. These programs are excellent opportunities to provide fire safety education messages on a regular basis. The fire department, police department, and other public service agencies can pool their resources to use these public access avenues more effectively. Collaboration relieves a single agency from the burden of providing a complete program every week and gives the audience a broader spectrum of programming to keep their interest high.

**FMFD Life and Fire Safety Education Program**

While the FMFD engages with the community in a variety of ways, a formal Community Risk Reduction (Public Education) program does not exist.

**Community Risk Reduction**

The two major components of a community risk reduction program involve the use of the five “E”s and engaging the community.

The five “E”s represent mitigation strategies as follows:

- **Engineering** – Building safeguards into products and materials that, by their design, eliminate or reduce the risk.
- **Education** – The object of an education strategy is to raise public awareness and understanding about fire.
- **Enforcement** – Reducing risk through the use of codes and standards.
- **Economic Incentives** – Influencing personal or corporate behavior through financial incentives or disincentives (providing smoke alarms at no cost).
- **Emergency Response** – Communities have realized that there are many risks that simply cannot be mitigated effectively through the other strategies.
For community engagement to have a positive impact on a community risk reduction initiative, the FMFD must view community engagement as an everyday approach to doing business in the community. The Study Team found the FMFD to be well engaged in the community. However, no formal public education program is employed in the community, which should include schools, businesses, lodging and senior living facilities.

To this end, the Study Team recommends that a dedicated public fire and life safety educator should be employed in the Fire Prevention Division to ensure these programs are delivered consistently and that quality of the education is maintained.

**SUMMARY**

The funding and organizational culture of the City of Fort Myers, with regard to fire prevention and community risk reduction, is focused operationally on mandated new construction plans review, inspections and tests with an ancillary approach to fire investigation and maintenance inspections of existing properties.

The current resources made available to the new construction plans review, inspection, and test responsibilities of the Fire Prevention Division are stretched and are working at full capacity at this time. However, the resources assigned to the inspection of existing occupancies required for inspection by the Florida Fire Prevention Code are inadequate.

The fire investigation efforts of the FMFD are solid, and those assigned do an admirable job in their origin and cause determinations of fires, explosions and other related incidents. However, for a city with the risk potential and the size of Fort Myers, the city would benefit from a formal fire investigation program embedded in the Fire Prevention Division.

The effort of the FMFD’s life and fire safety education efforts, while commendable, are woefully inadequate and lack the resources needed to make an appreciable impact on the fire and life safety risk in the community.
OPTIONS AND RECOMMENDATIONS

11-1 The city should consider adopting inspection fees for initial annual inspections performed by the FMFD personnel related to the required inspections under the Florida Fire Prevention Code.

11-2 The Fire Chief should assure that the structures and target hazards that should be inspected on an annual, bi-annual, or otherwise “periodic” basis are defined and a plan for inspection implemented.

11-3 The Fire Chief is encouraged to have the FMFD adopt a system of “self-inspections” that can be conducted by the business in low-hazard occupancies that can relieve some of the current workload on the inspection staff.

11-4 The Fire Chief should ensure that the FMFD accurately defines the number of properties in the city that need to be inspected according to the Florida Fire Prevention Code.

11-5 The city and Fire Chief are encouraged to pursue hiring additional fire inspectors for the department to come into compliance with annual fire inspections.

11-6 The Study Team recommends that a formal fire investigations program be formed in the Fire Prevention Division under the direction of the FMFD Fire Marshal.

11-7 The Fire Chief should assure that the FMFD public fire and life safety program is formalized and placed under the direction of the Fire Prevention Division.

11-8 The Fire Chief should pursue employment of a dedicated public fire and life safety educator to deliver consistent public fire safety and injury prevention programs in schools, lodging and senior residential facilities, and the business community.
CHAPTER TWELVE
COMMUNICATIONS AND DISPATCH

This chapter discusses the basic concepts and processes related to 9-1-1; public safety communications and dispatch functions; and specific descriptions of the method of operations for the dispatch of fire and EMS resources within the City of Fort Myers. Relevant aspects, conclusions and recommendations relating to the use of automation and technology; emergency communications center characteristics; state-of-the-art alarm process and dispatch procedures; and the training, staffing and scheduling of emergency communications center personnel are also discussed.

Information relating to a number of relevant dispatch subjects such as objectives, performance measurements, 9-1-1 operations, and automated dispatch systems are included in this chapter to familiarize the reader with both the technology and processes. For the reader, Fort Myers and Lee County specific fire and EMS communications and dispatch discussion, conclusions, options and recommendations begin on page 299.

OVERVIEW OF PUBLIC SAFETY ANSWERING POINT OPERATIONS

A Public Safety Answering Point (PSAP), also commonly referred to as the 9-1-1 center, is a call center responsible for answering calls to an emergency telephone number for police, fire and emergency medical services.

In October 1999, the Federal Wireless Communications and Public Safety Act of 1999 (9-1-1 Act) took effect with the purpose of improving public safety by encouraging and facilitating the prompt deployment of a nationwide, seamless communications infrastructure for emergency services. One provision of the 9-1-1 Act directed the Federal Communications Commission (FCC) to make 9-1-1 the universal emergency number for all telephone services.

Trained telephone operators/dispatchers, known as telecommunicators, are responsible for obtaining pertinent information from callers and dispatching the appropriate emergency services to calls for help. Modern PSAPs and 9-1-1 systems automatically report the telephone number and location of 9-1-1 calls made from wireline or landline phones, a capability called Enhanced 9-1-1 or E9-1-1. The FCC also requires wireless telephone carriers to provide 9-1-1 and E9-1-1 capability, where a PSAP requests it. When it is
implemented fully, wireless E9-1-1 will provide an accurate location for 9-1-1 calls from wireless phones.

The public commonly believes that public safety providers are as close as a telephone. While this is generally true of public safety service provision, members of the general public have a significant misunderstanding and lack of knowledge of the myriad of functions that cause public safety officers to arrive where needed in a timely manner. Given the vast array of technological and human functions that must be carefully, accurately, and quickly executed to ensure a proper response to a demand for service, it is amazing to many, upon learning the sequence of actions, that existing dispatching systems work as well as they do.

Any system is doomed to failure without the ability to receive calls, gather necessary preliminary information, transmit that information, and dispatch appropriate resources in such a manner to ensure a timely response. While there are a variety of methods in use across the country today, each must be considered individually for applicability to the needs, capabilities, and technologies of the jurisdiction being served.

**COMMUNICATIONS CENTER OBJECTIVES**

An emergency public safety communications center is the nerve center of primary emergency public safety services. It is the critical link—the lifeline—between the public and its protectors—the police officers, firefighters and rescue personnel. The general purpose and intent of the emergency communications center is best described by the following statement of objectives:

1. Establish and maintain a call center that the public client can contact for emergency assistance with the expectation that some corrective action or emergency service will result from that call.

2. Establish and maintain a system to which emergency calls for service result in prompt dispatch of proper agencies, personnel and equipment to effectively address the emergency.

3. Establish and maintain a system wherein properly trained and dedicated personnel closely monitor the progress of the agencies, personnel and equipment en route to the scene of the emergency and assist in prompt arrival of the services.
4. Establish and maintain a system wherein the resources remaining available to an emergency service agency are redistributed throughout the service area to minimize extended service response times resulting from any gaps in the coverage.

5. Provide, in a timely manner, and upon request from the field incident commander, additional resources that match the incident commander’s request as closely as possible.

6. Generate and maintain accurate and precise records as required by the emergency response system. The emergency response system includes the communications center.

7. Monitor the emergency to its conclusion, exchanging with field units any record related or administrative information required by standing orders. Upon stabilizing or abating the emergency, properly close the records on the event or incident, file the record, and move on to the next incident.

8. Establish and maintain a properly designed radio communications system able to provide reliable dispatch of emergency units in stations or the field, provide reliable information flow between the communications center and the field units, and the field units one with another at any time, including non-emergency periods.

9. Establish and maintain a properly designed radio, information and telecommunications system capable of providing reliable information flow between the agency that addresses an incident and other agencies or jurisdictions that may be called to assist.

10. Develop and maintain a database and records system that allows the communications center to identify the location of the call for service so the proper operational agency can respond.

These stated objectives of a public safety communications and dispatch center are general in nature, but they provide the framework within which to understand the overall goals and purposes of a modern model emergency communications center. The objectives also provide an overview of how the support systems involved in a model public safety communications system assist in realizing the mission of the typical communications center.
CASCADE OF EVENTS AND PERFORMANCE MEASURES

An essential element in the assessment of any emergency service delivery system is the ability to provide timely and adequate resources for anticipated emergency situations, such as fires, rescue situations, medical emergencies, and other foreseen occurrences. Each emergency situation requires a variable amount of staffing, apparatus, equipment, and other resources to be effective. Appropriately trained and equipped fire companies must arrive, deploy, and control the emergency within specific timeframes for successful emergency event strategies and tactical objectives to be met. For example, most fire departments and emergency medical providers strive to extinguish small structure fires quickly before they reach flashover potential to minimize risk and damage and to intervene in medical emergencies quickly to reduce clinical and biological death from cardiac arrest or severe blood loss. In both of these instances response times, appropriate staffing, and adequate resources are critical factors that affect the outcome of the event.

The capability of a fire department to respond to these events within four minutes of the initiation of the event improves the chances of saving lives and property. The entire premise of a fire department’s successful response to a structure fire is based on its ability to effectively deploy properly trained personnel and adequate resources before the fire reaches flashover. Figure 12.1 from the Fire Sprinkler Association demonstrates fire growth to flashover and the critical timeline for fire department intervention.

**Figure 12.1**

Flashover Critical Timeline
The Commission on Fire Accreditation International (CFAI) has defined response time elements as a cascade of events. This cascade concerning the passage of time is the interval from when a fire or emergency medical event occurs and the fire service arrives on scene and is a reflection of the time elements that make up the total response time in handling an event. The chart in Figure 12.2 below illustrates that there are many components of time that must be kept as short as possible if a fire is to be controlled or a patient is to survive.

**Event Initiation Point**—The point at which factors occur that may ultimately result in activation of the emergency response system. Precipitating factors can occur seconds, minutes, hours, or even days before the point of awareness is reached. An example is the patient who ignores chest discomfort for days until it reaches a critical point at which time he/she makes the decision to seek assistance.

**Emergency Event Awareness**—The point at which a human being or technologic sentinel (i.e., smoke alarm, infrared heat detector, etc.) becomes aware that conditions exist requiring activation of the emergency response system.

**Alarm**—The point at which awareness triggers notification of the emergency response system. An example of this time point is the transmittal of a local or central alarm to a Public Safety Answering Point (PSAP). Again, it is difficult to determine the time...
interval during which this process occurs with any degree of reliability. The alarm transmission interval lies between the awareness point and the alarm point. This interval can be significant. It occurs when the alarm is transmitted to a distant commercial alarm monitoring organization, which then retransmits the alarm to the local 9-1-1 dispatch center. When there is an automatic transmission of the signal, the fire department gains valuable time in controlling the event. Another example of this situation occurs in many jurisdictions when 9-1-1 is called from a cell phone, which often goes to a central answering point and is then rerouted to the appropriate dispatch center.

**Notification**—The point at which an alarm is received by the PSAP. This transmittal may take the form of electronic or mechanical notification received and answered by the PSAP.

**Alarm Processing Time**—The time between the first ring of the 9-1-1 telephone at the dispatch center and the time the computer-aided dispatch (CAD) operator activates the station and/or company alerting devices.

**Turnout Time**—The interval between the activation of station and/or company alerting devices and the time when the responding crew is aboard the apparatus and the apparatus is beginning to roll toward the call as noted by the mobile computer terminal or notifies dispatch by voice that the company is responding.

**Travel Time**—The point at which the responding apparatus signals the dispatch center that they are responding to the alarm and ends when the responding unit notifies the dispatcher of its arrival on scene (via voice or mobile computer terminal notification).

**On-Scene Time**—The point at which the responding unit arrives on the scene of the emergency.

**Initiation of Action**—The point at which operations to mitigate the event begin. This may include size-up, resource deployment, and patient intervention.

**Termination of Incident**—The point at which units have completed the assignment and are available to respond to another request for service.
The time chart contains at least three major critical components: alarm processing time, turnout time, and travel time. Collectively, they make up the total time from when a person activates the emergency response system and the system delivers a vehicle on site. It is imperative to keep in mind that certain intervals described, such as turnout and travel time, can be directly influenced by the fire service via station locations and design, staffing levels, as well as local rules and procedures for response. Others factors, such as notification and alarm processing, can be influenced indirectly through public education and engineering initiatives. The fire service can also influence the call-processing interval through its ability to define standards and compel performance by its dispatch centers.

National consensus standards developed by the National Fire Protection Association (NFPA) describe acceptable performance standards for alarm receipt, alarm processing, turnout, and response time. NFPA 1221, *The Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, defines acceptable alarm receipt performance as 95 percent of alarms received on emergency lines to be answered within 15 seconds and 99 percent to answered with 40 seconds; acceptable alarm processing performance as processing 95 percent of alarms processed with 60 seconds and 99 percent of alarms processed within 90 seconds; and where alarms are transferred from the primary PSAP to a secondary PSAP the transfer proceed should not exceed 30 seconds for 95 percent of the alarms processed.

**ORGANIZATION AND MANAGEMENT**

This section discusses model management and coordination approaches for communications centers used by other municipalities. The Study Team has evaluated each of these models in the delivery of emergency communications services as part of previous studies involving communications and dispatch.

**Approaches to Model Dispatch Center Organization**

The Study Team has observed a number of approaches to manage and direct consolidated public safety communications centers. These include management by:

A. Law enforcement departments;
B. Separate municipal agencies;
C. Fire departments; and
D. Regional facilities (e.g., multiple municipalities or county).
The management of communications centers by law enforcement departments is the most predominant approach in the United States. This practice seems related to the law enforcement workload, which typically has a higher call load than fire/rescue/EMS agencies. Third-party agencies include separate telecommunications agencies or emergency management agencies. There are very few consolidated public safety communications centers managed by fire departments.

When either the police or fire department manages the consolidated communications center, there is a potential for a perceived or actual “favoritism” to develop where the dispatchers indirectly or openly favor the field personnel, policies and procedures of the agency for which they work. Regardless of whether the problem is perceived or real, public safety officials need to be proactive to avoid claims of “favoritism” in emergency communications service delivery.

The management of a number of consolidated public safety communications centers has dealt with this potential issue in three primary ways. Some municipalities often budget for a police or fire liaison/supervisor position from the agency not responsible for the communications center. This position may be onsite either around the clock (in very large communications centers) or on the day shift to monitor, provide liaison and/or actually provide a certain level of dispatch operations supervision.

Another method has been the establishment of a “board of advisors” or “users board” to provide a means for input and communications on issues of mutual concern to the management of the communications center. In addition, a policy board which is made up of heads of the departments that are serviced by the communication center established policies and procedures, whereas each agency has agreed upon.

**COMMUNICATIONS CENTER STAFF SCHEDULING**

A number of work schedules utilized by public safety dispatcher centers include:

- **8-hour shift** — Three shifts of dispatchers work generally eight hours in a day to provide dispatcher staffing;
- **10-hour shift** — This shift is generally a swing shift that is combined with another type of shift to provide 24-hour-a-day dispatcher coverage;
- **12-hour shift** — Two shifts of dispatchers work generally 12 hours in a day to provide dispatcher staffing; and,
• **24-hour shift** — One shift of dispatchers works an entire 24-hour shift each day. Some sleep time is generally allocated during each shift for dispatchers assigned to this work shift.

Although the exact hours of work and the shift rotation may vary, these are the primary dispatcher work shifts that the Study Team has observed in communications centers across the nation. The 8-hour and 12-hour shifts are used in most communications centers with civilian dispatch staffing. The Study Team has observed very professional dispatch centers with 8-, 10-, and 12-hour shift schedules. Two 24-hour schedules observed by the Study Team were very inefficient.

**COMPUTER-AIDED DISPATCHING**

One of the most significant improvements in public safety dispatch in the last 40 years has been the introduction of computer-aided dispatch (CAD) systems. These systems represent a well-proven technology that offers noteworthy benefits for the safety of law enforcement personnel; decreases in dispatch processing time; and improved accuracy of the dispatch process. The result is quicker and more accurate emergency public safety responses. CAD systems have become an essential component of quality communications and dispatch centers in public safety throughout the United States.

In order to effect reductions in the response time components, elicit incident information, verify the location of the incident, identify potential hazards to public safety personnel, and determine the available unit(s) most appropriate to respond, automation of at least some of these processes should be implemented for public safety agencies.

The primary objectives of CAD systems are to:

1. Increase the speed of the dispatch process, thus reducing response time;
2. Increase the accuracy of the dispatch process;
3. Increase safety by improving the information that is available to field personnel;
4. Improve the utilization and management of resources by providing more information regarding incident locations, and by improved status keeping and display; and
5. Collect data concerning calls for service and subsequent responses in support of management information and resource allocation in departmental activity.
CAD systems vary widely in their functions and capabilities. The reasons for variances are the individual characteristics and requirements of different public safety agencies. The size of the service area involved, the population being served, and the funding available are all key factors the function and capabilities acquired as part of a CAD system.

**Typical Features of CAD**

The following sections describe some of the specific beneficial features for public safety that CAD provides.

**Geographic Base Files**

Generally, computer-aided dispatch systems have geographic files that are utilized in the operational CAD environment. These include the:

1. Master Street Address (MSAG)
2. Geographic Information System (GIS)
3. CAD GEO File
4. Geospatial CAD Features

These files are utilized to define to the CAD such details as the street centerlines, address range, city boundaries, fire station locations and hydrant locations, which comprise the geographic aspects of the service area.

**Unit Dispatch Recommendation**

Based on criteria developed by public safety officials, a CAD system has the capability to recommend specific fire unit(s) or other emergency service provider for a response assignment for any given address entered into the system as part of the call taking and dispatch process. As calls for service are received, the system can reorder response assignments.

**Records Management System (Incident Records/Premise History)**

The CAD system storage of recent incident records allows for rapid access to various kinds of incident data for later analysis and study. For field public safety personnel, premise history can be very important. For example, if department resources are dispatched to an address of a known felon or hazmat storage location, the dispatch
personnel and the responding public safety units dispatched may not know the volatility of this incident, and may become involved in a situation without essential information.

Address-based “hazard information” that is entered into the CAD system, is entered through the Geospatial feature. This is based on prior calls to this same address, information provided by the property owner/occupant and/or fire investigations in progress, may well prevent injury or worse to the personnel responding, and allow for improved incident handling.

**Message Capability**

CAD can have a message-sending capability that, for many fire departments, has become critical to their internal operations. In addition, both dispatch messages, as well as administrative messages, may be transmitted and logged.

**CAD / 9-1-1 Systems Interface**

CAD systems include an interface with the 9-1-1 phone system. The 9-1-1 telephone number and address data can spill into a CAD system to reduce the number of keystrokes necessary to carry out the dispatch function. This feature improves accuracy and speed of emergency dispatch. CAD provides for the accurate logging of all operational activity associated with calls for service, incidents, nature of incidents, location of calls, time of calls, duration of calls and units assigned. When coupled with a computerized records management system, this capability provides management with an accurate database upon which to base rapid operations analysis and feedback for determining an efficient deployment and distribution model for basic service delivery.

When CAD is interfaced with the 9-1-1 phone system, citizens calling for fire or EMS services automatically have their addresses and telephone numbers displayed on the screen for the call-takers from citizens who are using a landline phone. For those citizens using a wireless phone, the Federal Communications Commission (FCC), requires wireless companies to be in compliant with Phase I or Phase II. Phase I provides the phone number and location of the cell tower, whereas Phase II provides latitude and longitude of the caller within 50-300 meters. NextGen 911 is an Internet Protocol (IP), that has the capability to allow digital information (e.g. texting, videos, voice, photos) to be received from the citizen to the 911 phone system.
**Documentation of Incidents**

CAD systems generally document all dispatch and CAD systems activities on a computer. The specific data that CAD systems normally document include the following:

- Nature of incident;
- Incident number;
- Location (address) of incident;
- Fire and/or EMS agency response district where incident occurred;
- How call received: 9-1-1, administrative line, radio, etc.;
- Name of calling party;
- Telephone number of calling party;
- Time call received;
- Time call dispatched;
- Time units on-scene;
- Time units are in-service;
- Time incident cleared;
- Unit(s) assigned;
- Name or ID number of call-taker receiving call; [ ] Name or ID number of dispatcher handling call; and
- Other relevant incident data.

Most CAD systems are designed utilizing mini or PC-type computers. Incident data for a certain period of time is maintained in the database of the CAD computer. Management reports can be produced and analysis can be performed with the incident data. Based on the storage capacity of the CAD computer(s), incident data is normally transferred to other larger computers for long-term record keeping and analysis.

**MOBILE DATA COMPUTERS**

As part of state-of-the-art CAD systems, fire and EMS agencies have been acquiring and implementing portable/mobile computing devices. This technology has been emerging in public safety communications systems since the late 1970s and is another well-proven technology. In the private sector, mobile data terminals have been used since the early 1980s to speed transmission of assignments.
Initially, as the technology evolved, the units were mobile and, therefore, generally referred to as mobile digital terminals (MDTs). However, as the technology has continued to progress, there are a number of differing types of portable/mobile computing devices now in use, many currently referred to as mobile data computers (MDCs).

In addition to being an integral part of the computer-aided dispatch process, these units may be a part of the records management system (RMS) and/or they can be standalone reporting mechanisms.

**TIME SYNCHRONIZATION**

Maintenance of accurate dispatch times is important to many aspects of public safety dispatching. Some of the following require the maintenance and documentation of accurate times for various components of the dispatch process:

- Response to inquiries from the public;
- Management studies and analysis; and
- Response to requests for documented information for legal and court cases.

Individually, many components of the communications center include time-keeping capability. Many of the following components of the typical communications center include internal time-keeping capability:

1. Voice recorders;
2. Dispatch consoles;
3. CAD systems;
4. ANI/ALI controllers and other 9-1-1 equipment;
5. GIS mapping systems;
6. Wall time displays;
7. Time-lapse video units; and
8. Alarm receivers.

The accuracy of dispatch-related times maintained by dispatch center communications components is essential to the availability of reliable and consistent time information. Likewise, it is essential that the times maintained by the various communications system components be synchronized and consistent.
TRAINING OF DISPATCHERS

Training is one of the most important factors when considering the requirements of a public safety communications center. Training is key to the effective operations of the center and the center’s ability to provide the appropriate emergency response to the public, as well as providing the necessary support to fire and EMS personnel.

The required amount and content of training will depend greatly on the background and experience of the individuals staffing the communications center. When individuals staffing the center have the institutional background and field experience, such as in the case of using uniformed personnel, then the training only has to focus on the equipment, skills, and procedures common to the communications center operations. When civilian personnel are used, the training may need to be more extensive so that the individuals are familiar with the service and field operations that impact or could be impacted by communication center operations.

Even with the automation of communication centers, there still must be provisions for human intervention and application of discretion. Due to human and situational variables, especially in emergency situations, decision making cannot be deleted from the dispatchers’ responsibilities.

Dispatcher Training Model

This section reviews a model public safety dispatcher training program.

Basic Dispatcher Training

A model fire/rescue/EMS dispatcher training program should include basic dispatcher training, which would include some of the following basic topics:

1. Mission of communications center
2. Dispatcher duties and responsibilities
3. Professionalism
4. Telephone systems
5. Telephone policies and procedures
6. Radio communications systems
7. Radio policies and procedures
8. Telecommunications concepts and technology
9. Dispatch related automation concepts
10. 9-1-1 phone system and CAD systems generally
11. Stress management and critical incident stress debriefing
12. Fire and rescue operations and terminology
13. Emergency medical dispatching and pre-arrival instructions
14. Records management systems

This basic training generally involves concentrated classroom lectures and established lesson plans, along with one on one training with a training officer.

The content of the basic training programs offered include the instructional programs of the following: State of Florida required The 911 Public Safety Telecommunicator Training Program, as well as Association of Public Safety Officials (APCO) which meet the intent of the basic training envisioned in this model.

**On The Job Training**

Following completion of the basic dispatcher training program, each dispatcher recruit should complete an on the job training program where the dispatcher recruit is assigned to a training officer. This training will consist of an appropriate number of shifts working with a training officer. The recruit is evaluated on a daily basis.

**Probationary Performance Standards**

As an adjunct support to the basic training requirements outlined above, the implementation of a dispatch personnel training program should include comprehensive probationary training with appropriate performance standards and a dispatcher training manual or handbook.

**Continuing In-Service Training**

Following the completion of the basic dispatcher training, the on the job training program and successfully meeting the performance-based probationary standards and program, the dispatcher would be considered to be fully proficient. Subsequently, dispatchers should be required to maintain their dispatch knowledge through attending continuing in-service training programs.

Continuing in-service training programs vary with each communications center and are customized according to the needs and the personnel requirements. The majority of
programs have regularly scheduled review and updating of basic subject areas and the addition of new topics and procedures. The amount of time varies since some are formal off-site classes, while others are updates at line-up and shift change.

**Supervisory Training**

Supervisory training and continuing education is individualized in each communications center. In most of the centers, the focus of the training is supervisory and management subjects. The nature and level of formality of supervisory dispatcher training would be dependent upon the size of the communications center and the number of dispatchers to be supervised.

**Quality Assurance**

The Quality Assurance program administers the quality assurance process, providing compliance oversight by reviewing and documenting an evaluation of the level of compliance with agency directives and standards to ensure the highest levels of service to the public and emergency responders.

**Accreditation**

The objective of accreditation is providing superior public safety services as well as the opportunity to be recognized as a center of excellence. Accreditation provides a management model for agency administration and operations, produces better trained public safety personnel, may limit an agency's liability and risk exposure, and promotes greater accountability within the communications center or unit. Commission for Law Enforcement Agencies (CALEA) offers a communications center program of accreditation, which consists of approximately 216 standards. The Commission on Fire Accreditation International (CFAI) has approximately 10 categories that need to be meet. International Organization for Standardization (ISO) also offers accreditation programs. For centers who provide pre-arrival instructions International Academies for Emergency Dispatch (IAED) offer accreditation programs for fire, medical and police. Each accreditation program has approximately 20 standards.
RADIO SYSTEMS — GENERALLY

A number of radio frequency bands have been made available for public safety agencies by the Federal Communications Commission (FCC). These bands include:

- VHF low band
- VHF high band
- UHF 450 MHZ
- UHF 490 MHZ
- UHF 700 MHZ
- UHF 800 MHZ

Each frequency band has associated advantages and disadvantages. The selection of a particular frequency band by public safety agencies is dependent upon a number of factors, including frequency availability, area to be covered, type of geography, size of radio system designed, and frequency bands used by adjacent public safety agencies.

Typical Radio System Configurations

There are a number of radio system configurations available for public safety use. These system configurations vary primarily in the number and usage of radio frequencies that comprise each of the systems. The different system configurations vary and are generally as follows:

- **Simplex** — Utilizes a single radio frequency for both transmitting and receiving all radios for each channel. Only one radio can transmit at any time while all other radios receive.

- **Two-frequency half duplex** — Utilizes separate frequencies for transmitting and receiving. Only one radio can transmit at any one time; all others receive.

- **Two-frequency full duplex** — Utilizes separate transmit and receive frequencies and permits simultaneous conversations in two directions.

- **Two-frequency repeater** — Utilizes a centrally located high-powered base station “repeater.” The repeater receives a transmission from any radio in the system on one radio frequency and instantly retransmits or “repeats” the message on a second frequency that is received by the other radios on the system. Repeater systems are two-frequency half duplex systems.
• **Trunking systems** — Utilizes a group of radio frequencies that are controlled by a computer at the base station or communications center. When a transmitter is keyed, it transmits a unique identity code to the computer. The computer instantly selects an available radio frequency and automatically directs the transmitting radio to use that frequency for transmission.

A radio system is generally comprised of the following primary components:

- Base station transmitter and receiver equipment;
- Antennae tower and equipment;
- Mobile radio equipment;
- Portable radio equipment;
- Applicable automation hardware and software; and
- Communications center control equipment and consoles.

**800MHz Trunking System**

It is common knowledge that two-way radio communication is an essential tool for effective delivery of a wide range of public services. Fire, rescue, emergency medical services, law enforcement, public works, and transportation agencies cannot function well without access to reliable radio communications. The FCC needed to address a growing problem of harmful interference to 800 MHz public safety communication systems caused by high-density commercial wireless systems. In July 2004, the FCC adopted a comprehensive plan to reconfigure the band. This plan is designed to protect the lives of first responders and other emergency personnel and fulfills the FCC’s obligation to promote safety of life and property through the use of wire and radio communications.

In recognition of this frequency availability problem, the FCC has taken action to allocate large blocks of 800MHz spectrum radio frequencies to help satisfy this growing communications requirement of government, business, industry, and land transportation. While releasing these frequency blocks, the FCC stipulated that certain communications systems operating in the 800MHz band must employ trunking techniques (computer controlled) to achieve increased channel utilization and loading.

On the conventional single-channel, two-way radio system, several users have access to only one channel. When that channel is in use, other users in the shared system should not access the channel. Therefore, like telephone users on a “party-line,” they must wait
until the channel is free. Another channel may be clear in the area, but conventional system users have no means to access it.

On a trunking radio system, each user has access to a number of radio channels. When a user places a call (pushes the transmit button), the user is automatically assigned a clear channel for the duration of the message. While that channel is in use, other users can access other channels. At the conclusion of each message, the vacated channel is returned to the common pool where it becomes available to other users in the system.

Several key advantages of utilizing computer controlled trunking 700/800MHz radio systems are as follows:

1. Measurable improvement in frequency utilization;
2. Transmission of messages on identical frequencies at every site in the trunking system simultaneously;
3. Dynamic frequency allocation by tracking users and keying only sites and channels required to reach a particular user group;
4. Enhanced records capability regarding frequency use by units and groups in the system;
5. Improved frequency security;
6. Total ability to exclude unauthorized units from transmitting on the system;
7. Ability to allocate frequency groups “on-the-fly” in response to emergency requirements, such as disaster situations; and
8. Ability to handle the increasing communications requirements with improved frequency allocation.

For a number of years, the FCC has been encouraging and facilitating communications users, such as fire, EMS, law enforcement and other local government agencies, to initiate regional planning efforts leading to the implementation of well-coordinated and planned 800MHz trunking radio systems. As a result, many such systems have been or are being planned and implemented across the United States.

**DISPATCH CONSOLE FURNITURE**

For efficiency and effectiveness of operations, all dispatch components should be integrated into the consoles, including:

1. CAD screens, keyboards, and related support equipment;
2. Crime information access systems;
3. Map display monitors;
4. Emergency and non-emergency phone systems;
5. Radio consoles;
6. Quick recall short-term recording devices; and
7. Time synchronization clock.

Clearly, both the computer and other equipment support requirements, as well as call taker, dispatcher and supervisor staff needs, should be carefully considered as part of the design and implementation of consoles. Some of the more progressive ergonomic aspects of consoles include:

1. Adjustable height work surface;
2. Task lighting that may be dimmed;
3. Adjustable keyboard platform mechanism;
4. Radiant heat panel;
5. Footrest with provision for a foot switch;
6. Ergonomic chairs;
7. Enclosed storage compartment;
8. Open design for equipment mounting flexibility; and

RECORDING RADIO AND TELEPHONE TRAFFIC

The recording of radio and telephone traffic on all radio frequencies is an essential function that should be performed at all times. Instant and long-term access to these recordings is important for many reasons, including:

1. Assist with dispatcher training;
2. Support dispatcher personnel evaluation efforts;
3. Legally document incident-related occurrences;
4. Provide documentation for purpose of a specific incident critique; and
5. Provide recording of dispatcher activities for immediate playback to clarify un- clear verbal information for dispatch accuracy purposes.

As is the case with many PSAP products, 9-1-1 center managers have a wide range of vendors and options from which to choose when considering recording systems.
Important consideration when selecting recording systems include: the size of center’s operation, the volume of calls handled, number of telecommunicator positions to be recorded, duplicate recording in a backup center, the need for instant replay, time synchronization of the recorders, and duration of records storage.

**Short-Term Recording Systems**

Short-term (five to 30 minutes in duration) recording devices in communications centers can be of significant benefit to dispatch personnel. The availability of a short-term recording with immediate playback capability provides the call taker or dispatcher with the ability to playback a radio or telephone message in an effort to clarify what was said or occurred. This playback capability can be an invaluable tool to assist in situations where the dispatcher or call taker is unclear as to what the calling party or officer said or requested.

In many high-stress situations, people do not communicate as clearly and messages can be “garbled” or barely audible. For the dispatcher, immediately playing back the message may clear up the misunderstanding.

The technology involved with radio frequency recording has advanced significantly in the past few years. Today, many of the recording devices are computer-controlled, utilize digital technology, and are very compact in size. A number of the more specific features of such equipment include:

1. Software based for ease of future upgrade ability;
2. Extended recording hours on digital data storage cartridges (e.g., 640 hours);
3. Simultaneous playback of multiple channels;
4. Extensive search capability;
5. Re-record capability;
6. Internal battery backup; and,
7. Voice compression to save media storage space.

**Long-Term Recording Systems**

Initially, when radio dispatch frequencies were recorded for purposes of long-term documentation, the recording medium was magnetic reel-to-reel tape. These recorders were of various sizes. Subsequently, the reel-to-reel magnetic recording machines utilized
24-hour tape reels with one magnetic tape reel recording each 24-hour period. Generally, a communications center would retain each 24-hour magnetic tape for a specified period of time (90 to 120 days, for example). Unless the tape was placed on hold for specific reasons, the magnetic tape would be reused.

Most recently, a number of computer disk and digital recording devices have been developed that allow for the continuous recording of much greater periods of time (days and weeks) with high quality, permanent storage, and various levels of search and replay capabilities. Further Next Generation 911 (NG911) initiatives led by the National Emergency Numbers Association and the US Department of Transportation will require that new types of emergency communications (text, pictures, and video) be recorded along with the voice communications that have traditionally been recorded. Most existing communications recorders are not capable of recording anything other than audio. Major changes may be required to bring these devices into NG911 compliance.

**PUBLIC SAFETY COMMUNICATIONS & DISPATCHING FOR THE FORT MYERS FIRE DEPARTMENT**

The Study Team has extensive experience with managing and accessing public safety dispatch services having managed county-wide regional dispatch operations and provided comprehensive communications and dispatch assessments involving more than 80 law enforcement, fire and emergency medical services communications and dispatch centers and systems, including those of the cities of Los Angeles, CA, and Chicago, IL. The reader should be aware of the fact that the overall purpose of this chapter is not to provide a comprehensive assessment of and provide options and recommendations of the public safety dispatch systems and operations in Lee County.

Specifically, the reader should recall that the primary goal of this Fort Myers Comprehensive Study of the City of Fort Myers Fire Department is to develop a Master Plan for the Fire Department as stated in the city’s Request for Proposals:

“…making recommendations to maintain or exceed the current level of public safety dispatch while identifying and quantifying potential cost saving measures for the City.”
PSAPs (Dispatch Centers) in Lee County

There are three PSAPs in Lee County that provide communications and dispatch services to the public safety agencies/services as indicated:

**City of Fort Myers Police Department 9-1-1** (City 9-1-1) receives all 9-1-1 calls (including EMS) from within the city and dispatches:

- Fort Myers Police Department.

The City 9-1-1 PSAP is physically located in the Fort Myers Police Department building. The City 9-1-1 is a responsibility of the Fort Myers Police Chief.

**Lee County Sheriff’s Office 9-1-1** (LCSO 9-1-1) receives all 9-1-1 calls from callers not in the city and dispatches:

- Lee County Sheriff’s Office

The LCSO 9-1-1 is located in a well-equipped multi-story building that reportedly was completed in 2009. It includes a large substantial dispatch operations room with multiple dispatch console pods for call takers, law enforcement, fire and EMS dispatchers.

**Lee County Dispatch Center also known as Lee Control** receives medical and fire calls from either the City of Fort Myers Police Department or Lee County Sheriff’s Office and dispatches for:

- North Fort Myers Fire Department
- Lehigh Acres Fire Control and Rescue District
- South Trail Fire Protection & Rescue Service District
- Lee County Emergency Medical Services (LCEMS)
- City of Cape Coral Fire Department
- Alva Fire Department
- Fort Myers Beach Fire Department
- Village of Estero Fire Department
- Bonita Springs Fire Department
- Iona-McGregor Fire Protection & Rescue District
- City of Fort Myers Fire Department
- Captiva Fire Department
- Bayshore Fire Department
- Boca Grande Fire Department
Lee Control is physically located at the Emergency Operations Center along with Emergency Management. Lee Control is under the Department of Public Safety.

Lee Control provides both medical and fire pre-arrival instructions for citizens in Lee County that call 9-1-1. In 2015 Lee Control began to install equipment for a message center within the emergency operations center. The purpose behind this project is to provide a “warm center” that can be utilized in the event that Lee Control would need to be evacuated.

The total number of calls that Lee Control processed in 2015 was 212,098. This total includes 911 calls, 911 abandoned calls, all incoming and outgoing calls as well. Between 2014 and 2015, Lee Control had an increase of 8.9% of 911 calls. Overall there was an 8,551 total call increase from 2014 to 2015, which equals out to 4.2% increase. There is no monetary cost to any of the agencies that are dispatched by Lee Control.

The radio system utilized by the public safety services is an 800MHZ trunked system. The radio system is under the Government Communications Network for Lee County. This system is a county wide system and the county maintains the towers and infrastructures. Each agency purchases their own portable radios as well as the mobile data computers. The radio system is staffed by one radio system manager and three electronic technicians.

**Communications Systems Infrastructure Upgrades**

The Study Team met with chiefs from several of the fire departments, the quality assurance/training and operations supervisor and the chief from Lee Control. The Study Team also did a station visit. The CAD system for Lee Control is Motorola. It was described as very functional, it includes mapping, AVL for the apparatus and has the routing function. In 2015, Lee Control upgraded the CAD Server to HP Non-Stop CAD
Server. This upgrade was done in order that critical software upgrades would be more streamline.

ProQa was upgraded to the Paramount Version along with Medical Priority Dispatch Systems Version 13 and Fire Protocol Version 6.1 in 2015 as well. Servers for Automatic Vehicle Locater, Mobile Data Computer and the Database were also upgraded in 2015, along with the change over from physical machines to virtual machines.

A new and improved paging system called Hiplink was installed in 2015. This program improved the capability of the previous paging system.

One capital project is being developed to build a new emergency operations center. This project will house Lee Control, public safety administration, E911 and Lee County Sheriff’s Office. A CAD upgrade will take place in the next couple of years.

**Lee Control Dispatch**

The Study Team noted that, although 9-1-1 calls for emergency medical and fire services are answered by the City of Fort Myers Police Department and the Lee County Sheriff’s Office 9-1-1 dispatchers, all medical and fire calls are transferred to Lee Control. The 9-1-1 dispatchers clarify the call by determining the nature of the call, transfer the call to Lee Control to have either a fire unit or EMS dispatched and dispatch any law enforcement resources needed for the call. There does not appear that this practice hampers call processing times. Once the 9-1-1 operators realize the call is a medical or fire call, the call is connected to Lee Control. 9-1-1 Operators stated they stay on the phone to see if law enforcement is needed.

**Accreditation**

Lee Control provides pre-arrival instructions for both medical and fire calls. The programs that are utilized are from the International Academies of Emergency Dispatch. Lee Control is accredited for medical and fire programs since 2007 for medical and 2011 for fire, receiving re-accreditations in 2015. Lee Control is considered an Accredited Center of Excellence (ACE) from International Academies of Emergency Dispatch.

The Quality Assurance program is designed to review calls with the operators whether the call is done properly or some type of improvement is needed. Lee Control contracts
with an outside vendor to review and score calls that are pulled for quality assurance. The calls are reviewed on a monthly basis with the operators. The operators who have the highest compliance scores for both medical and fire are rewarded at the end of the year.

**Cooperative Services Initiatives**

After speaking with several fire chiefs regarding cooperative services, all were highly complimentary of Lee Control. The only issue that was brought up to the Study Team was the policy of all tones. This new policy went into effect March of 2016. Many of the chiefs felt that they did not have a say in the change for their departments. The new policy of all tones is during the hours of 7 am to 7 pm, Lee Control tones out all stations for all calls. From the hours of 7 pm to 7 am, stations are toned out individually. The chiefs advised that many of the station’s staff head toward the apparatus as soon as the tones go out, whether it was for that station or not. The consensus was this puts more stress on the staff and increased the time from when the station is toned to when the staff acknowledges the call. After looking at the data, the time factor was found not to increase. Figure 12.3 illustrates the effect of “All Call’ on average turnout time.

**Figure 12.3**

**Average Turnout Times, Pre and Post “All Call”**

![Average Turnout Times Chart](chart.png)

Lee Control advised the reason behind this policy was to send out the call without stacking it, expedite dispatches, alleviate the dispatcher need to check for an available unit, and the dispatcher is able to announce more than one call at a time.
Shift Staffing

The Myers Study Team was advised that Lee Control dispatchers work 12-hour shifts and bid once a year for vacations by seniority.

Dispatcher Training

Lee Control dispatchers complete a 232-hour State of Florida Telecommunication Certification for all dispatchers. The final test is completed online by Jackson State University. In addition, call takers complete training for medical and fire protocols, along with on-the-job training with training officers. The training program is approximately three to six months. Radio training mirrors the call-taking training program and takes approximately three to six months, as well. All dispatchers have ongoing training to ensure they have enough training hours for re-certifications.

Consolidation or Co-Location

During the course of this project, it appeared to the Study Team that there is no desire to consolidate or co-locate the county’s three PSAPs. With the new facility project in the future, Lee Control and Lee County Sheriff’s Office will be housed in the same facility, but not consolidate. The City of Fort Myers Police Department did not indicate that a move was in the works.

The administrative and overhead costs to operate three centers is a sizeable sum. Effectiveness and efficiency improvements, such as shorter call and alarm processing times, may be realized through consolidation or co-location of the PSAPs. Additionally, the costs of operating multiple full-time facilities, providing security, and maintaining emergency standby generators could be avoided by co-locating CAD and 9-1-1 equipment and personnel.

Further, it has been the Study Team’s observations through the years that one well run consolidated or co-located PSAP as compared to multiple (two or more) PSAPs is more efficient and cost effective. A consolidated or co-located PSAP provides the opportunity for more seamless communications and dispatch operations, as long as it is well-run, managed and the telecommunicators are properly trained and supervised by qualified dispatch supervisors.
SUMMARY

An emergency communications center is the nerve center of police, fire, and EMS service delivery agencies. It is the critical link—the lifeline—between the public and its protectors.

Typically, emergency dispatch centers in a municipality are managed by a number of agencies, including fire, separate municipal agencies, regional agencies, or a police department. Predominantly, the public safety dispatch function is the responsibility of the police department. In Lee County, the emergency dispatch function for law enforcement is provided by Lee County Sheriff’s Office and the City Fort Myers Police Department. Fire and Rescue service is provided by Lee Control, which is under the Lee County Public Safety umbrella.

The radio system is the backbone of the emergency dispatch system as it is the means for communications between the dispatchers and the service delivery personnel, and among the service delivery personnel—police, firefighters, fire officers, EMTs, and paramedics. Radio systems have progressed technologically through the years to the point where today many radio systems are computer controlled, digital signal-based radio systems. Lee County public safety agencies utilize a state-of-the-art 800 MHZ digital trunking radio system.

Lee Control is a well-designed and more than adequately furnished facility with state-of-the-art E9-1-1, radio, and CAD systems and equipment. With several upgrades in 2015, Lee Control has kept abreast of changing technology. Personnel assigned to Lee Control appear to be well trained and dedicated to providing high quality dispatch services.

OPTIONS AND RECOMMENDATIONS

12-1 Lee Control should continue to monitor and analyze the turnout time performance for the daytime “All Call” station dispatches in the future.

12-2 The city should continue to support Lee Control in placing a high priority on continuing the completion of the upgrades to the communications system infrastructure.

12-3 The Fire Chief should continue to encourage the development of county-wide response standard equipment assignments.
12-4 The Fire Chief is encouraged to work to develop and implement standardized move-up or fill-in procedures for backfilling stations engaged in prolonged incidents.

12-5 The city and Fire Chief should assure that the closest available fire unit with appropriate capabilities is dispatched on all calls.

12-6 The city should support efforts to ensure that 9-1-1 calls for Lee EMS unit services are handled in a seamless manner between the City 9-1-1 and CCSO 9-1-1 from call receipt to dispatch no matter the source of the 9-1-1 call.

12-7 The city and the Lee County Sheriff are encouraged to establish a common goal of planning for the implementation of a consolidated or co-located PSAP.

12-8 The city and the Lee County Sheriff should consider establishing both policy level and technical task forces to assess the feasibility, plan, implement and subsequently manage a consolidated or co-located PSAP with the involvement of both the Lee County EMS Department and fire districts.
CHAPTER THIRTEEN
VISION FOR THE FUTURE

This chapter provides a suggested implementation plan and vision for the future for the City of Fort Myers to consider. Clearly, the City of Fort Myers and the FMFD need to make the final decisions on whether to implement changes and the timing of those changes. The City Manager should make the final decision on recommendations and timelines after gaining input from fire administration.

In developing this Fire Department Master Plan, the Study Team has drawn on its experiences as practitioners in fire departments, trained assessors with the Commission on Fire Accreditation International, chairpersons of International Association of Fire Chiefs (IAFC) committees, lecturers at Georgetown University School of Medicine, and consultants in fire departments of similar size to Fort Myers, smaller agencies, and larger agencies to frame the findings and advisory recommendations for the City of Fort Myers and the FMFD to consider.

There are nearly 93 recommendations in this Report. The firm typically suggests no more than 100 recommendations in public safety studies. The primary reason is for the detailed recommendations to be as specific as possible in terms of suggestions for the future.

TIMING

This plan should be viewed as a strategic planning tool during the next three to five years (2017-2022). The findings, observations and suggestions represent the professional judgment of the Study Team members at this time and are only advisory in nature. In the future, additional issues may need consideration; therefore, the plan should be used as a flexible guide for decisions relative to the management and provision of fire and emergency medical services.

For example, there may be changes in Fort Myers in fire/EMS funding, new demands on the FMFD, increased risks in some areas, and changes in City of Fort Myers policies on various public safety issues. Accordingly, this vision for the future should be utilized as a flexible document to be updated annually.

Moreover, in considering changes in the delivery of public safety services, incremental steps in some cases are necessary.
REVIEW OF REPORT

In public safety studies, the Study Team suggests a three-month period for a review of the findings and recommendations. One cannot expect to review several hundred pages of complex material and immediately decide on which suggestions, if any, to implement and the timing for change. Accordingly, the City Manager is encouraged to conduct a review of this report for up to three months.

As part of the review by the City Manager, the Fire Chief should be given an opportunity to provide input relative to any observations, findings and recommendations.

As noted in all reports by the Study Team, it is important to view this report in its entirety, rather than identifying one or two issues. The report should be seen as a seamless approach to expand qualitative and quantitative fire protection and emergency medical services for Fort Myers stakeholders.

FORT MYERS FIRE DEPARTMENT AT A CROSSROADS

The Fort Myers Fire Department has a long history of providing quality fire, rescue, emergency medical and marine services in Fort Myers. The FMFD has been a regional and national leader in a number of fire and EMS service delivery areas, including implementation of mobile data terminals and consolidation of dispatch services to Lee Control.

The FMFD appears to be at another crossroads in its history. The increasing cost of public safety services has been a major constraint on City of Fort Myers administration and the City Council. Notwithstanding the fact that most cities are experiencing similar fiscal problems, there is substantial interest in keeping the best of the best and exploring new initiatives and alternatives to the delivery of qualitative services.

In the judgment of the Study Team, the Fort Myers Fire Department has the opportunity to act boldly: continue its innovative philosophy and programs; refocus the resources and personnel to meet the needs of stakeholders in 2017 and beyond; seek additional funding streams; and actively pursue further partnerships with surrounding municipalities, State of Florida, and Federal officials to fund and protect Fort Myers and surrounding waterways.
Fiscal constraints preclude public safety departments in many cases from continuing with “business as usual.” The tax issues are requiring a reassessment of the often repeated seven-word phrase: “We have always done it that way.”

IMPLEMENTATION OBSTACLES

It is not unusual for anyone to resist change. In public safety, personnel become accustomed to specific shifts, staffing models, days off, and assignments. As with other public safety studies, a number of the recommendations in this report were expressed by members of the FMFD at all ranks and from stakeholders. Clearly, there will be resistance to someone losing a specific rank or being reassigned.

Although personnel and other issues may surface, open communication and input should assist in “getting beyond” these types of implementation issues.

ORGANIZATIONAL CHANGE

Organizational structures in fire and EMS agencies should be flexible in meeting the unique management style of a fire chief and particular staff strengths. Some fire chiefs, for example, need strong senior subordinates so that the fire chief may work with stakeholders, officials and labor leaders, while other fire chiefs assign the community and labor relations duties to their senior staffs.

The current FMFD organizational structure appears to be traditional and similar to other paid urban fire departments. A number of revisions are suggested. The primary changes relate to implementing an organizational structure that supports the provision of fire services by the FMFD and changes to operations.

Responsiveness to the Community

Based on stakeholder input and Study Team observations during the on-site work on this project, the FMFD appears to need to enhance its relationship with the community and its various neighborhood organizations. A number of its programs are progressive partnerships with members and organizations in the community. Participation of FMFD staff in various city-wide and community organizations would continue to serve the Fire Department well in its relation with the public.
Chapter Thirteen
Vision for the Future

POTENTIAL BENEFITS

In upgrading the personnel, operations, management and administration of a fire department, it is not possible to delineate all the positive outcomes. Improving the quality of life in a community and saving lives do not necessarily involve quantitative analysis.

A number of the anticipated returns on investment for the operations and management recommendations in this Study include:

1. Improved management of the Fort Myers Fire Department by upgrading the senior uniformed staffing through programmatic oversight;
2. Increased pride in the organization;
3. Decreased apparatus response time through sending closest units;
4. Reduced loss of time on the job through comprehensive firefighter safety programs;
5. Improved cost effectiveness through program revisions and reductions;
6. Enhanced fire protection of buildings through fire prevention program improvements;
7. Improved responsiveness of FMFD senior management via schedule and assignment changes;
8. Enhanced management of human resources;
9. Improved cost effective service through further implementation of automatic mutual aid;
10. Improved firefighter effectiveness through upgraded training;
11. Improved morale within the FMFD;
12. Improved image of the FMFD through program upgrades and accreditation;
13. Improved incident scene accountability;
14. More effective use of key senior staff members; and
15. Enhanced status of the city being served by an accredited fire agency.
CUSTOMER ORIENTATION

In the judgment of the Study Team, the City of Fort Myers is encouraged to embark on a course that will enhance the delivery of fire protection and EMS services. All decisions should be based on what is best for the customer in the City of Fort Myers.

FIRE DEPARTMENT ACCREDITATION

Over a ten-year period, a committee of the IAFC, in cooperation with the International City Management Association, developed an analysis model for self-assessment fire departments and services. That fire department self-assessment process is now under the auspices of the Commission on Fire Accreditation International. The Study Team utilized portions of this model as a framework for this City of Fort Myers Study to provide established criteria for review and the reader with information on the latest trends in the fire service.

In years past, standards available to the fire service have been the product of collaborative efforts involving organizations such as the National Fire Protection Association (NFPA). There have been other systems of standards and measurements for the fire and emergency services available; however, they were created to serve interests relating to the fire service, but not specific to the fire service. A good example of this type of process is the Insurance Services Office (ISO) grading schedule.

In 1988, the International City/County Management Association (ICMA) and the International Association of Fire Chiefs (IAFC) executive boards signed a memorandum of understanding that committed both organizations to the development of a voluntary national fire service accreditation system. Over a period of the intervening years, the framework for a fire department accreditation model was developed, beta test fire department accreditations were conducted, and an accreditation model was finalized and implemented under the management of the Commission on Fire Accreditation International.

The accreditation analysis categories included in the model are as follows:

1. Governance and Administration;
2. Assessment and Planning;
3. Goals and Objectives;
4. Financial Resources;
5. Programs;
6. Physical Resources;
7. Human Resources;
8. Training and Competency;
9. Essential Resources; and
10. External Systems Relations.

The Study Team considered appropriate aspects of this CFAI accreditation model for this Study, and a member of the Team has been a peer fire department assessor. Additionally, the preparation made by the Fort Myers Fire Department for this Study and the data and information collected are very similar to that necessary for the FMFD to pursue accreditation.

As stated in the CFAI accreditation manual, the City of Fort Myers and the FMFD could benefit from becoming an accredited fire agency. Benefits include:

1. Further promotion of excellence in the FMFD;
2. Quality improvement through self-assessment;
3. Provision of assurance to peers and the public that the FMFD has defined missions and objectives and strives to go beyond them;
4. Identification of strengths and weaknesses within the FMFD;
5. Provision of detailed evaluation of the FMFD and its services;
6. Establishes a method or system for addressing deficiencies and building on the strong points;
7. Growth for the FMFD and its personnel;
8. Establishment of a forum for the communication of management and leadership philosophies;
9. National recognition for the FMFD by peers and the public;
10. Creation of a mechanism for developing concurrent documents, such as strategic and business plans and a “desktop manual” inclusive of all areas the FMFD is involved in; and
11. Further development of pride in the organization, from FMFD members, community leaders and citizens.
The Study Team recognizes that the Fort Myers Fire Department exhibits a number of the characteristics of an excellent fire department. It appears that the City of Fort Myers, the FMFD, and stakeholders could benefit in many ways from the FMFD becoming an internationally accredited fire agency with the CFAI.

**UPDATING THE PLAN**

The City of Fort Myers and the FMFD are encouraged to update this Plan each year. The update should include progress, obstacles, fiscal impacts, and anticipated outcomes. The PSSi Study Team is available to assist with a number of implementation tools.
STUDY OPTIONS AND RECOMMENDATIONS

The following are the chapter-by-chapter options and recommendations listed in sequential order for quick reference by the reader.

ORGANIZATION & ADMINISTRATION

2-1 The city is encouraged to update the City Code related to the duties and responsibilities of the Fire Chief.

2-2 The Fire Chief should consider the development and communication of revised Mission, Vision and Values Statements for the Fort Myers Fire Department.

2-3 The city and the Fire Chief should consider creating a Public Information/Community Liaison position as part of the General Staff, reporting directly to the Fire Chief.

2-4 The Fire Chief is encouraged to request adequate staff to fulfill the responsibilities of the Training Division.

2-5 The Fire Chief should consider assigning ancillary administrative and support functions to all field battalion chiefs and captains assigned to the Operations Division.

2-6 The Fire Chief should consider changing the name of the Training Division to the Training/EMS Division and designate a paramedic certified assistant chief as the Fort Myers Fire Department EMS Officer. This change will demonstrate the FMFD organizational emphasis on the provision of emergency medical service.

2-7 The city and the Fire Chief should consider staffing the Medical/Training Officer positions as an EMS Training Officer position at the rank of Captain. This officer should be paramedic certified would be assigned to the Training/EMS Division to provide quality assurance, training and field oversight of FMFD emergency medical service. Additionally, this officer would supervise the efforts of the EMS Field Training Coordinators and be designated as a Fire Ground Safety Officer.
2-8 The city and the Fire Chief should consider creating a Fire Training Officer position at the rank of Captain. This officer would be assigned to the Training/EMS Division to coordinate fire suppression, special operations, pre-incident planning and post-incident critique training for all field resources. Additionally, this officer would supervise the efforts of the Fire Field Training Coordinators and be designated as a Fire Ground Safety Officer.

2-9 The Fire Chief should consider changing the name of the Special Service Division to the Planning and Logistics Division. This division would be responsible for the planning and logistical functions of the FMFD.

2-10 The city and the Fire Chief should consider creating a Logistics Coordinator position that reports directly to the commander of the Planning/Logistics Division.

2-11 The Fire Chief should establish a committee to strengthen the effort to review, revise, and communicate state-of-the-art policies and procedures for the FMFD.

2-12 The city, Fire Chief and the FMFD are encouraged to pursue accrediting the Fort Myers Fire Department through the Commission on Fire Accreditation International model.

STAFFING

3-1 The Fire Chief should consider staffing each truck company with a company officer.

3-2 The Fire Chief should consider three-person staffing, with one company officer, as the minimum staffing level for engines and trucks deployed by the FMFD.

3-3 The city and Fire Chief should work to increase the funded positions on the FMFD by 21 to retain staffing at current levels when the SAFER grant expires.

3-4 The Fire Chief and IAFF Local 1826 work together to implement a formal professional development and succession-planning program.
3-5 The Fire Chief is encouraged to work with IAFF Local 1826 and the Fort Myers HR Department to develop fire department specific planning and evaluation process.

3-6 The FMFD employee performance evaluation process should incorporate performance notes, maintained throughout an evaluation period, on critical positive and negative performances.

3-7 The FMFD should work with the Fort Myers HR Department to provide all supervisors with a minimum of two hours of training on the Employee Performance Evaluation System.

3-8 The city and Fire Chief should work to increase the minimum staffing on all engine and ladder companies to four persons with one company officer, as outlined in the NFPA 1710.

DEMOGRAPHICS AND RISKS

4-1 The FMFD, through its training division chief, should provide training to firefighters to be able to communicate with the Latino community that does not understand English.

4-2 The Fire Marshal should support fire prevention methods aimed at the senior population through programs at senior community centers and neighborhood associations.

4-3 The FMFD recruiting and hiring efforts should have a goal to increase the racial, ethnic, and gender diversity of the department to more closely match the community it serves.

4-4 The FMFD and the city should support the use of alarm and sprinkler systems in high density residential buildings.
FIRE STATION LOCATIONS

5-1 The city should install an emergency stoplight at Dr. MLK Jr. Blvd & Cummins Court to aid in fire apparatus left turns and motorist safety.

5-2 The city should modify stations and new stations should be designed for gender specific facilities and Americans with Disability Act (ADA) requirements.

5-3 The city should consider direct exterior venting of vehicular exhaust and bunker room air for the health of its firefighters.

5-4 The FMFD should monitor its turnout-time performance for any additional impact due to daytime “All Call” dispatch announcements.

5-5 The FMFD should maintain its automatic aid agreement with South Trail Station 62 for the Paseo and Reflection Isles communities.

5-6 The FMFD should relocate the ladder company from Station 12 to the new Station 11 as soon as construction is complete and the building can be occupied.

5-7 No additional fire stations are currently recommended for Fort Myers.

APPARATUS AND EQUIPMENT

6-1 The Public Works–Fleet Maintenance Superintendent should develop a plan to ensure that at least three of the city’s mechanics are certified Emergency Vehicle Technician’s (EVTs) certified through the EVT Certification Commission, Inc.

6-2 The Fire Chief and the Public Works–Fleet Maintenance Supervisor should develop a formal vehicle life cycle plan based on industry standards. Fleet Maintenance should evaluate every piece of FMFD apparatus and equipment on an annual basis on the adopted standards and report out to the Fire Chief annually.

6-3 The Fire Chief should develop and implement a 25-year formal apparatus and equipment replacement schedule for guidance during budgeting.

6-4 As part of the replacement schedule, the Study Team recommends a reserve aerial be added.
The Fire Chief should assign the appropriate staff to identify those SOPs that have been omitted or are missing and initiate the process, in priority, to promulgate a complete and updated set of SOPs.

The Department should continue to conduct annual pump testing, aerial ladder testing, ground ladder testing, hose testing and SCBA testing in compliance with NFPA standards and ISO guidelines.

The Fire Chief should confirm that all automotive fire apparatus equipment inventory is in compliance with NFPA 1901, Standard for Automotive Fire Apparatus.

The Fire Chief should consider changing the Special Service Division to the Planning and Logistics Division. This division would be responsible for the planning and logistical functions of the FMFD. (See Chapter 2 for details.)

The city and the Fire Chief should consider creating a Logistics Coordinator position that reports directly to the commander of the Planning/Logistics Division. (See Chapter 2 for details.)

**EMERGENCY MEDICAL SERVICES**

It is recommended that the Fire Chief explore with his staff further opportunities for FMFD EMS trained personnel to formalize an EMS outreach program and to provide these additional services and education opportunities to the community.

The FMFD leadership and staff need to work with the other public safety and health care agencies to develop a culture of action through public awareness and training as recommended in the recently released Institute of Medicine publication on *Strategies to Improve Cardiac Arrest and Survival*.

It is recommended that the FMFD work more closely with the ongoing efforts in Lee County to participate in community education and prevention programs. This would include the programs for fall and drowning prevention, child care seat
safety and even blood pressure monitoring. It is further recommended that the FMFD assess the need for more CPR and AED training in the community.

7-4 The FMFD should research the various programs available to enhance AED utilization in Fort Myers and consider implementing one of the new smart phone applications to take advantage of the AEDs placed in public buildings in the response area. Utilizing early defibrillation as part of the EMS system can improve the survival rates for out-of-hospital cardiac arrests.

7-5 The FMFD staff needs to work with the components of the public health system to develop a mechanism for collecting and monitoring data regarding out-of-hospital cardiac arrests and to work further with LCEMS to establish a process for assessing data on successful resuscitation rates as a measure of determining effectiveness of system and to identify any weaknesses in the chain of survival.

7-6 The Fire Chief should assure that data are maintained to continuously evaluate this practice, especially in regards to which types of calls need additional personnel.

7-7 The Fire Chief should assign staff to work with LCEMS to capture and maintain response data specific to the city and city first responder units so that response data can be analyzed to ensure compliance with recognized standards.

7-8 The Fire Chief should have the requirement for Paramedic certification for hires as a “preferred” prerequisite, but not mandatory.

7-9 The Study Team recommends that the Fire Chief request an additional full-time, EMS dedicated staff, to assist the Division Chief of Training with EMS duties and responsibilities.

7-10 The Fire Chief should consider a more appropriate name for the Training Division to reflect that of its major responsibilities in EMS.

7-11 The Fire Chief should continue to assure that the Training Division meets the Florida State requirements to be a department-approved, continuing education provider by having the appropriate EMS trainers, as well as record keeping.
7-12 The FMFD and medical community should continue to observe what is going on in other communities and be prepared to take their system to the next level based on identified needs in the Fort Myers community.

7-13 The Fire Chief should assign staff to research soliciting customer feedback and develop a process for the FMFD to survey customers of its EMS service.

7-14 The FMFD needs to use the data available from the Image Trend RMS to track EMS deployment, performance and outcomes. Data dashboards should be implemented to monitor ongoing performance to ensure benchmarks and critical task completion.

OPERATIONS AND ISO

8-1 The City of Fort Myers and the FMFD should use ISO’s April 2016 results as an assessment tool, in conjunction with the findings of the Study Team’s report, as a basis from which to begin making additional operational improvements moving forward.

8-2 FMFD should evaluate existing SOPs on a regular basis by performing a needs assessment. The evaluation should include a review of the current operating environment, the standard of practice, and specific local needs. Based on the results of this, existing SOPs can be modified or deleted, and new ones added, as necessary.

8-3 FMFD should develop a more formal implementation plan when new and/or revised SOPs are issued to include: notification of members and others with a need to know; distribution of copies (electronic or hard copy) to potential users; placement and maintenance of reference copies; methods to identify and quantify training needs; training delivery and administration; competency testing and certification, ongoing performance monitoring and employee support.

8-4 FMFD should conduct a complete hazard-risk analysis for the city regarding “all-hazards” and that the current target hazard pre-planning program be expanded to include and address all commercial structures, residential properties (as allowed),
residential developments, mass gathering venues, marine facilities, beaches, hazardous materials threats and critical infrastructure that pose significant risk and/or are vital to the social, economic or safety of the community.

8-5 All pre-planning documents should continue to be kept electronically and readily available on mobile data computers (MDC). Responding companies should be required to refer to these while enroute to the incident. Incident Commanders should have access to the pre-fire plans on the fireground and use these as a tool during the course of an incident.

8-6 FMFD members should review all pre-fire plans on a regular basis, conduct regular refresher drills and visit all major target hazards utilizing this material on an annual basis. These annual visits should also be used to update the existing pre-fire plan to reflect and changes if warranted.

8-7 FMFD is encouraged to closely examine all special operations services to determine the demands for service and how to meet these demands moving forward, to include examining further regional partnerships.

8-8 Now that the HMT and the TRT are operating as a Special Operation team it is important that the standard level of training for both disciplines is being met and documented.

**HEALTH AND SAFETY**

9-1 The Fire Chief should ensure the development of a written risk management plan for the FMFD.

9-2 The Fire Chief should develop a comprehensive, written safety and health policy and implement an organized and effective safety and health program for the FMFD.

9-3 The Fire Chief and city HR department should develop and implement an injury reporting and investigation program that meets the requirements of NFPA 1500.
The Fire Chief and city should provide the Training Division with the staff necessary to fulfill the responsibilities as departmental Health and Safety Officer with full authority to act on health and safety matters as described in NFPA 1500. The officer should be trained in accordance with NFPA 1521 *Standard for Fire Department Safety Officer, 2015 Edition*, and be fully supported by the FMFD.

The Fire Chief and Division Chief of Training should develop clear and consistent incident management policies and procedures and implement a formal After Action Review (AAR) policy with guidelines on what incidents shall be reviewed. This policy should vest the authority of conducting AARs with the Division Chief of Training who shall implement and oversee AARs using a pre-agreed upon format. AARs should include of outside subject matter experts (SMEs) to avoid myopic reviews or conflicts of interest;

The Fire Chief and Division Chief of Training should implement consistent command officer training as outlined in the chapter on Training.

The Fire Chief should embrace the Lee County fire service operations “playbook,” and develop and implement response and mutual aid policies and procedures so that service delivery when running with other departments in the county is consistent.

The Fire Chief should develop and implement clear and consistent incident management policies and procedures using an “all-hazards” approach and be NIMS compliant.

The Study Team recommends that the FMFD implement a component of use of the accountability system in daily training and to ensure that the system used by the FMFD is interoperable with all mutual and automatic aid resources.

The Fire Chief should ensure that each work site be equipped with a commercial grade washer and dryer dedicated to the laundering of station uniforms and personnel clothing. A separate washer and dryer must be used for rags and apparatus towels.
9-11 The Fire Chief and the FMFD Occupational Health and Health & Safety Committee should implement a facility inspection program in compliance with NFPA 1500 and develop a comprehensive plan to bring all work sites into compliance with applicable codes.

9-12 The Study Team recommends that the Fire Chief ensure that adequate fire and life safety protection systems are in place such as smoke detectors, fire alarm systems, carbon monoxide detectors, and automatic sprinkler system.

9-13 The Fire Chief and the Health & Safety Committee, with city support, should develop and implement an occupational medical plan in accordance with NFPA 1582 Standard on Comprehensive Occupational Medical Program for Fire Departments.

9-14 The Fire Chief in conjunction with the Health & Safety Committee should review the current policies and procedures and processes regarding the employee assistance program, alcohol and substance abuse policy, and critical incident stress management and identify and implement any changes needed so policies are best-practice based.

9-15 The Fire Chief and the Health & Safety Committee should review the National Fallen Firefighter Foundation’s Firefighter Life Safety Initiatives in an effort to determine how the initiatives can best be supported or accomplished.

**FIRE & RESCUE TRAINING AND EDUCATION**

10-1 The Fire Chief and senior staff should develop and implement a command officer professional development program that includes initial training on incident command and incident scene safety for chief officer candidates and continuing education requirements for existing chief officers.

10-2 The Fire Chief should encourage officers to use the CPC model to strive toward achieving professional designation in their area of interest or specialty. The Fire Chief should set the example by going through the designation process and securing CFOD.
10-3 The Fire Chief should encourage and support his senior officers to participate in the Executive Fire Officer program.

10-4 The Training Division Chief should provide information to department officers regarding educational offerings at the NFA and encourage attendance.

10-5 The Fire Chief should develop a new position description that more clearly defines the role and responsibilities of the Training Division Chief.

10-6 The Fire Chief is encouraged to request adequate staff to fulfill the responsibilities of the Training Division.

10-7 The Fire Chief is encouraged to take the necessary steps to ensure that all Company Officers are supporting, following, and adhering to the ATP. Holding those who do not follow the ATP accountable must be a priority with no exceptions.

10-8 The Study Team recommends that the FMFD review the process by which all company-level training data are recorded, stored and retrieved and implement the changes needed to bring the recordkeeping more in line with Department requirements.

10-9 The Fire Chief and the city should implement the following minimum training, certification and education requirements for FMFD officers.

1. **Fire Chief**
   - Fire Officer IV
   - Hazmat First Responder Operations Level
   - Fire Instructor II
   - Emergency Vehicle Operator Course
   - EMT – Basic
   - Incident Management
   - ICS 100, 200, 300, 400, 700 and 800
   - National Fire Academy – Executive Fire Officer (EFO)
• Bachelor’s degree in Fire Science, Public Administration or related field; Master’s degree preferred.
• Chief Fire Officer (CFO) Designation

2. **Deputy Chief*/Division Chief **
   a. Fire Officer IV
   b. Hazmat First Responder Operations Level
   c. Fire Instructor II
   d. Emergency Vehicle Operator Course
   e. EMT – Basic (EMT-Paramedic preferred, required for EMS Division Chief)
   f. Incident Management
   g. ICS 100, 200, 300, 400, 700 and 800
   h. National Fire Academy – Executive Fire Officer (EFO) preferred
   i. Bachelor’s degree in Fire Science, Public Administration or related field; Master’s degree preferred.

   * Chief Fire Officer (CFO) Designation
   ** Chief EMS Officer (CEMSO)
   Chief Training Officer (CTO)
   Fire Marshal (FM)
   Fire Officer (FO)

3. **Battalion Chief**
   a. Fire Officer III
   b. Hazmat First Responder Operations Level
   c. Fire Instructor II
   d. Emergency Vehicle Operator Course
   e. Incident Management
   f. EMT-Basic (EMT-Paramedic preferred)
   g. ICS 100, 200, 300, 400, 700 and 800
   h. Fire Academy – Executive Fire Officer (EFO) [completed or in progress]
   i. Associate’s Degree in Fire or EMS Science or related field. Bachelor’s degree preferred.

4. **Captains**
   a. Firefighter III
   b. Fire Officer II
   c. Hazmat First Responder Operations Level
   d. Fire Instructor I
Study Options and Recommendations

10-9  The Fire Chief and FMFD senior staff should develop a delivery plan for the training courses needed for the existing officers so that the officers have an opportunity to comply with the revised training and certification requirements.

10-10 The Training Officer should establish a continuing education program for the officers of the department so that they can keep pace with the changes in service delivery, technology, and leadership practices.

10-11 The Study Team recommends that the FMFD require all certificate-based training (Firefighter I and II, Fire Officer I and II, etc.) have a Fire Instructor II certified instructor serve as the lead instructor for the program. If support instructors are needed, the Study Team recommends that all support instructors be certified to at least the Fire Instructor I level.

10-12 The Study Team finds that the FMFD must develop a formal process for promotions to include all positions. It is recommended that the Training Division Chief work with the Fire Chief in developing a more formal testing and promotional process. Since this is a specialized human resources process, outside assistance from either another department with experience, the city HR department, or private firm that offers these services should be obtained to validate the process.

10-13 The Study Team recommends that the FMFD develop and implement a command officer professional development program that includes initial training on incident command and incident scene safety for chief officer candidates and continuing education requirements for existing chief officers.

10-14 The Study Team believes that multi-company, multi-jurisdictional training events are important to the operational effectiveness for the city and the region. The Study Team recommends that FMFD add multijurisdictional training to the ATP.
10-15 The Study Team finds that the MLK Fire Training Field is underdeveloped to meet the training needs of the FMFD and recommends that the FMFD make plans to re-develop this site or make an organizational decision to abandon this site for use of other nearby facilities. The FMFD is fortunate to have access to the training sites operated by the Fort Myers Fire Academy. The Study Team recommends that this practice be continued.

FIRE PREVENTION PROGRAMS

11-1 The city should consider adopting inspection fees for initial annual inspections performed by the FMFD personnel related to the required inspections under the Florida Fire Prevention Code.

11-2 The Fire Chief should assure that the structures and target hazards that should be inspected on an annual, bi-annual, or otherwise “periodic” basis are defined and a plan for inspection implemented.

11-3 The Fire Chief is encouraged to have the FMFD adopt a system of “self-inspections” that can be conducted by the business in low-hazard occupancies that can relieve some of the current workload on the inspection staff.

11-4 The Fire Chief should ensure that the FMFD accurately defines the number of properties in the city that need to be inspected according to the Florida Fire Prevention Code.

11-5 The city and Fire Chief are encouraged to pursue hiring additional fire inspectors for the department to come into compliance with annual fire inspections.

11-6 The Study Team recommends that a formal fire investigations program be formed in the Fire Prevention Division under the direction of the FMFD Fire Marshal.

11-7 The Fire Chief should assure that the FMFD public fire and life safety program is formalized and placed under the direction of the Fire Prevention Division.
The Fire Chief should pursue employment of a dedicated public fire and life safety educator to deliver consistent public fire safety and injury prevention programs in schools, lodging and senior residential facilities, and the business community.

COMMUNICATIONS & DISPATCH

Lee Control should continue to monitor and analyze the turnout time performance for the daytime “All Call” station dispatches in the future.

The city should continue to support Lee Control in placing a high priority on continuing the completion of the upgrades to the communications system infrastructure.

The Fire Chief should continue to encourage the development of county-wide response standard equipment assignments.

The Fire Chief is encouraged to work to develop and implement standardized move-up or fill-in procedures for backfilling stations engaged in prolonged incidents.

The city and Fire Chief should assure that the closest available fire unit with appropriate capabilities is dispatched on all calls.

The city should support efforts to ensure that 9-1-1 calls for Lee EMS unit services are handled in a seamless manner between the City 9-1-1 and CCSO 9-1-1 from call receipt to dispatch no matter the source of the 9-1-1 call.

The city and the Lee County Sheriff are encouraged to establish a common goal of planning for the implementation of a consolidated or co-located PSAP.

The city and the Lee County Sheriff should consider establishing both policy level and technical task forces to assess the feasibility, plan, implement and subsequently manage a consolidated or co-located PSAP with the involvement of both the Lee County EMS Department and fire districts.