Fire Operational Study
Town of Southwest Ranches, Florida

Submitted by:
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March 20, 2014

Mr. Andy Berns
Town Administrator
Town of Southwest Ranches
13400 Griffin Road
Southwest Ranches, FL 33330

Dear Mr. Berns:

I am pleased to submit with this letter our Report on the Fire Operational Study for the Town of Southwest Ranches, Florida.

The Study Team would like to acknowledge the excellent cooperation that we received from Town officials, officers and members of the Southwest Ranches Volunteer Fire-Rescue Department and leadership and staff of the Davie Fire Department. If you have any questions relative to this Fire Operational Study, please contact my office.

Sincerely,

Leslie D. Adams
President

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ACKNOWLEDGMENTS

The Study Team extends genuine appreciation to the Town of Southwest Ranches officials and staff and members of the Southwest Ranches Volunteer Fire-Rescue and Davie Fire Department's officers and firefighters for their cooperation and assistance in conducting this Study to develop this Fire Operational Study for Southwest Ranches.

This project was unique given the extensive support and assistance provided to the Study Team by Southwest Ranches project members. A sincere "thank-you" is extended to each individual for their contribution, support and assistance towards the completion of this Study.

EVALUATION METHODOLOGY

This Study (also called Plan) was developed through a process of interviews, data collection, research, literature review, on-site observations, analysis of data and comparative evaluations with "Best Business" practices and standards in fire protection and emergency medical services. The Study Team's experiences as fire and EMS officials and fire and EMS consultants in every region of the U.S. were incorporated as appropriate.

STRUCTURE OF THE STUDY REPORT/PLAN

This Study Report contains 12 chapters. To assist the reader, the Study Team has included detailed background information on state-of-the-art fire and EMS practices and standards to assist in understanding the basis for our conclusions and suggestions.

In Chapters Two through Ten, there are recommendations at the end of each chapter. The recommendations are numbered to correspond with the subject matter in the chapter.

Chapter Eleven contains a suggested Implementation Plan and a suggested timeline. Chapter Twelve contains a listing of all options and recommendations from preceding chapters for consideration.

For the reader, it is important to note that there are different terms for agencies providing fire and EMS in Southwest Ranches, such as department, platoon, companies, team and

staff. These terms are used interchangeably or as specifically appropriate in the report for ease of reading.

STUDY TEAM MEMBERS

This Study of the fire protection services in the Town of Southwest Ranches was conducted by two primary consultants and two office staff of Public Safety Solutions, Inc. (PSSi). The consultants each have more than 40 years of fire and EMS experience, and they have supervised and served as fire and EMS services providers. The two primary consultants have worked as a "Study Team" for more than 15 years. One has served as a Peer Assessor with the Commission on Fire Accreditation International (CFAI). They are hereinafter referred to as the Study Team.

Leslie D. Adams

Mr. Les Adams, Public Safety Solutions, Inc. (PSSi) President, served as the full-time project director. Mr. Adams, the former Deputy Fire Chief of the Montgomery County, Maryland Fire and Rescue Department, has 28 years of fire/EMS management experience. He has served as the operations deputy fire chief of a combined fire department that serves 850,000 residents. As a practitioner in the fire service, Mr. Adams has managed fire operations with 33 fire stations, 818 firefighters, 31 engines, 14 ladder trucks, 35 Basic Life Support units, 13 Advanced Life Support units and 120 paramedics. He has been responsible for all duties of fire services, including personnel management, planning and research, facilities, apparatus, training, dispatch, administration, and operations.

Mr. Adams has served as a paid firefighter/officer for 23 years and as a firefighter for more than 30 years. He has served as a fire/EMS consultant with Public Safety Solutions, Inc., for 19 years. Additionally, he is a certified peer fire department assessor with the Commission on Fire Accreditation International and **Mr. Adams was qualified as an expert witness in the Rhode Island Superior Court regarding all facets of the Performance Study**.

He has taught at the National Fire Academy on modern techniques in fire services operations and has been on the faculty of Montgomery Community College teaching Fire Science Administration.

Mr. Adams has served as the Chairman of the International Association of Fire Chiefs (IAFC) Personnel Management Committee.

He holds a B.S. in Business Administration from the Columbia Union College and a Master's Degree in General Administration.

John M. Best

Mr. John Best served as assistant project director for this Study. He is the former fire chief of an Orlando, Florida, fire, rescue and EMS department serving a diverse area, including Walt Disney World. As fire chief, he was responsible for the administration, management and fiscal control of a progressive fire services delivery agency with a $17 million budget and 165 employees. He previously served as the deputy chief of administration, fire marshal and arson investigations chief of a 600-square-mile urban/ suburban/rural county adjacent to Washington, D.C.

Throughout his fire and EMS career, Mr. Best served as firefighter/paramedic, unit officer, station commander, captain, battalion chief and deputy fire chief. During his tenure as deputy chief, Mr. Best was responsible for training, communications and dispatch, fire prevention and arson investigations, budget management, personnel and procurement. As a volunteer, in a combination paid/volunteer system, he was an active operational member and officer in one of the busiest volunteer fire departments in Maryland.

As a consultant, Mr. Best provided public safety services to local governments involving fire, rescue and EMS management, organization, code application and enforcement. He also is a recognized strategic planning expert having completed more than 40 public safety agency analysis and strategic plans nation-wide.

Mr. Best has lectured as an adjunct faculty member of John J. College in New York City extensively in fire services curricula, including emergency management planning and response, risk analysis and management, fire prevention and education, administration and contemporary fire protection issues.

Robert K. McNally

Mr. McNally provided the operational data & geographic information system (GIS) analysis for the project. He was integral in the planning of future deployment strategies. Mr. McNally has consulted for over 110 municipalities of all sizes across the United States and Canada.

Mr. McNally has a Master's Degree from the University of North Carolina-Charlotte in Urban/Regional Planning. The emphasis of his academic research has been on the application of geographic information systems (GIS) in public safety and homeland security sectors. As an award-winning researcher, Mr. McNally has been a speaker at several academic conferences and industry seminars. In addition, he has been published in several academic journals and reports based upon his collegiate work that helped earn him the prestigious Graduate Research Award from the North Carolina Association of GIS. Earlier, he graduated magna cum laude from Kean University with a B.A. in Public Administration

Mr. McNally has been involved in emergency services for over 20 years. Beginning in the volunteer ranks as a firefighter, his experience includes 14 years of urban emergency medical services (EMS) as a paramedic in Metropolitan Newark, New Jersey. He also served as an EMS manager in suburban New Jersey and as an EMS training officer in Charlotte, North Carolina. Mr. McNally has been the recipient of several professional awards in excellence for his EMS professional work.

EXECUTIVE SUMMARY

THE TOWN

The Town of Southwest Ranches is in Broward County fifteen miles southwest of Fort Lauderdale on the eastern edge of the Florida Everglades.

The Town is approximately 13 square miles and, according to the 2010 U.S. Census, had a population of 7,345. As stated in the Town's website, it is "a rural environment, filled with grazing animals, nurseries, farms and exquisite and unique scenery and an abundance of wildlife." The Town is in close proximity to I-75, I-595 and US 27.

Town History

The Town of Southwest Ranches was incorporated on March 14, 2000. Subsequently, the Charter was drawn up by a Charter Committee and approved by the residents on June 6, 2000. Since the area had many horse ranches and is located in the southwestern part of the County, residents involved in the incorporation process chose "Southwest Ranches" as the name of the new Town after considering 122 different names.

Demographics

According to the 2010 U.S. Census, the Town's population was 7,345. Previously, the Town was unincorporated and a part of a census-designated place that included other unincorporated areas that have since been annexed into other jurisdictions. An estimated population in 2000 was 7,076 persons, which indicates a 0.4% annualized growth rate. The estimated 2012 population is 7,601, which shows an increased rate of growth.

Governance of the Town

The government of the Town is comprised of a Council and an Administrator. The Southwest Ranches Charter defines the governing body as a five-member council: a Mayor and four council members. The Town Administrator is one of three Charter positions and is responsible for the day-to-day operations of the Town.

THE FIRE AND EMS SERVICES PROVIDERS

A key fire and EMS organizational principle relates to the basic responsibility for public safety within the community. In most areas of North America, it is widely accepted that the provision of fire and EMS service is considered to be a local government responsibility. Local government is broadly interpreted to include municipalities, such as cities, towns, villages, and townships.

By contract, the Town of Davie Fire Department (DFD) and the Southwest Ranches Volunteer Fire-Rescue Department (SRVFRD) provide fire, EMS, and related services to Southwest Ranches in a team approach.

CRITERIA FOR FIRE & EMS DELIVERY

Fire Department Accreditation Criteria

The Commission on Accreditation of Law Enforcement Agencies (CALEA) had previously developed a police department accreditation process for use by police departments. The Commission on Fire Accreditation International developed a similar analysis model for fire department use on a voluntary basis. Inclusion of this model as a framework for this Southwest Ranches Study will assure that the "latest thinking" is considered in this Study.

There are ten major analysis categories included in this CFAI accreditation model. The analysis categories included in this CFAI accreditation 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 Resource
8. Training and Competency
9. Essential Resources
10. External Systems Relations

Within each of these categories, specific criteria and considerations were weighed by the Study Team in the process of conducting this Southwest Ranches analysis. The applicable performance indicators associated with these categories and criteria were considered and addressed where appropriate in this Study.

Standards and Accepted Practices

The Study Team also used published fire protection standards and information on accepted principles and practices for the operations and management of fire services as background and guidelines for the conduct of this Southwest Ranches Study.

Some of the key organizations with standards and publications that were utilized as part of this Study are the following:

- National Fire Protection Association (NFPA)
- ISO Commercial Risk Services, Inc. (ISO)
- International Association of Fire Chiefs (IAFC)
- American Heart Association (AHA)
- American Medical Association (AMA)

The National Fire Protection Association follows a nationally recognized process for the establishment of many standards that are applicable to fire protection operations and administration. In many jurisdictions, some of the NFPA standards have been adopted and fully implemented, while in others NFPA standards are utilized as general guidelines for pursuing further improvement in safety and services.

Suggested Fire and EMS Model Criteria

Based on the previous sections of this Study Report that discuss the various aspects of fire and EMS department model criteria, the Study Team suggests that the Town of Southwest Ranches consider adopting and implementing the following criteria for the selected fire and EMS services delivery model. Shading indicates partial or complete compliance.

1. Directed and managed by a full-time professional chief who reports to and is accountable to the Town Administrator of the Town of Southwest Ranches;
2. Provides incident command on a 24-7 basis at the chief officer level, battalion, or other chief officer;

3. Provides first-line unit and fire station supervision 24 hours per day;
4. Includes fully qualified firefighters and officers who are cross–trained to meet national and state fire and training and certification requirements;
5. Includes a comprehensive set of guidelines, policies and standard operating procedures to ensure a well-managed organization, high quality, and safe service delivery;
6. Includes state-of-the-art human resources management practices relative to record recruitment, hiring, training, supervising, assigning, and promoting staff;
7. Maintains in service two fire pumper units for immediate response;
8. Places apparatus in appropriately designed and maintained fire stations;
9. Provides a comprehensive fire training and recertification program;
10. Provides monthly, year-to-date and annual reports to the Town Administrator;
11. Provides annual building inspections and fire preplans for all non-residential occupancies in Southwest Ranches;
12. Prepares and submits National Fire Incident Reporting System (NFIRS) reports that comply with State and National NFIRS reporting standards;
13. Meets State and National service delivery standards, including NFPA Standard 1710/20 relating to apparatus and staffing deployment and response standards;
14. Responds and participates fully in mutual aid with Broward County fire agencies to provide improved fire protection services on a seamless integrated basis and provides necessary fire and rescue resources and services for incidents;
15. Provides fire/EMS supervisors available to any customer in the Town on a 24-hour basis;
16. Includes fully-qualified firefighter and officers cross-trained at the EMT and paramedic levels;
17. Responds with an engine from at least one centrally located fire station;
18. Staffs each engine with a minimum of three (3) cross-trained firefighters providing paramedic level patient service;
19. Responds with an advanced life support (ALS) rescue unit (ambulance type patient transport unit) from at least one centrally located fire station;
20. Staffs the ALS rescue unit/s with a minimum of two (2) cross-trained firefighters providing paramedic level patient care;

21. Assures that staffing of the fire apparatus includes ALS trained firefighters and/or officers to provide paramedic level care on an integrated basis with the rescue unit;
22. Includes a comprehensive EMS-related policies and standard operating procedures manual;
23. Participates in a comprehensive "closest unit dispatched" mutual aid program with adjacent and County fire/EMS units; and,
24. Provides a comprehensive EMS quality assurance program integrated with County and State quality assurance processes and requirements.

Appropriate aspects of the criteria are considered in the discussion of each of the various models or approaches for providing fire and/or EMS service/s to the residents and businesses of Southwest Ranches.

The **Fire & EMS Model Criteria** options and recommendations include:

1. Utilizing the suggested model criteria in the implementation of the selected fire and EMS services delivery model/s.

FIRE & EMS FACILITY LOCATIONS

The number and type of fire, rescue and EMS risks, as well as workload, in a municipality typically drives the number and location of stations. As a general rule, response times are utilized in locating fire and rescue stations. In some instances, availability of land and funding has a major bearing on locations of stations.

The location of a fire station for a specific community depends on the ability to travel within the geography, demographics, and the distribution of commercial, industrial, and residential property. There are nationally recognized benchmarks for locating a fire station that are discussed.

ISO Criteria

The Fire Suppression Rating Schedule used by the Insurance Services Office (ISO) in its evaluation of municipal fire suppression capabilities includes fire station location analysis with objective mileage-based criteria. Item 460 in the Fire Suppression Grading Schedule, Edition 6-80, reads as follows:

> "The built-upon area of the Town should have a first-due engine company within 1.4 miles and a ladder-service company within 2.4 miles."

NFPA 1710 Standard

There are a number of applicable NFPA standards and practices that include response-time considerations important to labor and fire officials nationwide. NFPA 1710 (Standard for the Organization and Deployment of Fire Operations) response time-related provisions are described in the following sections.

NFPA 1710 is an industry standard that serves as a benchmark for the fire department organization and deployment of services offered by firefighters. It is the standard for paid/career fire departments that describes the requirements for delivery of services, response capabilities, incident management, and strategy.

Response-Time Criteria

The response time of fire and EMS apparatus to the scene of an emergency incident is an essential determining factor as to the magnitude of the fire or medical emergency that the fire department must handle upon arrival. The theory is the shorter the response time, the smaller the fire that must be extinguished and the better opportunity for paramedics to save critical patients.

Time-related criteria for determining and evaluating fire station locations may be viewed from the perspective of two broad categories of types of incidents: (1) fire and (2) emergency medical service related incidents.

It should be noted that the various standards and criteria discussed in previous sections placed a high priority on both the effective delivery of fire and EMS service in the protection of life and property. Moreover, the safety of the firefighters and officers delivering the services and safety for the customer and stakeholder were important considerations to the development of these standards and to their application. Not all requests for services to the fire department ought to be construed as requiring apparatus to respond emergently or within the short-time constraints. These should be limited to the critical emergencies.

The **Fire Station Facilities** options and recommendations include:

1. Taking action to assure that actual address locations are input into the dispatch record to facilitate future analysis completion with less difficulty.
2. Considering an additional fire station in order to improve travel time and ISO distance coverage.
3. Consider separating the resources of the two fire departments to improve both utilization and delivery of services through reduced response times.

FIRE SERVICES VEHICULAR APPARATUS

Foremost, the selection and purchase process must be based on community needs. Careful research and planning are crucial to meeting these needs. Fire apparatus and equipment are very specialized and technical in their nature.

Fire departments must be knowledgeable regarding 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 several factors. One of the most important factors 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." Another factor is how the apparatus or equipment complements the previous purchases.

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

The **Fire Services Apparatus** options and recommendations include:

1. Conducting as soon as practical an analysis of its current standard operating procedures as they relate to apparatus and equipment acquisition, maintenance and associated safety considerations.
2. Developing and implementing formal, optimal replacement cycle policies for each of the key types of apparatus in the fleet (pumper/s, utility, and car/s).

3. Replacing the 1995 Pierce 1250 GPM pumper which is approaching 20 years of active.
4. Confirming that all automotive fire apparatus equipment inventory is in compliance with NFPA 1901, Standard for Automotive Fire Apparatus.

TOWN OF SOUTHWEST RANCHES FIRE & EMS DEPARTMENT

This Study Report provides a description of a possible stand-alone, full-service, all-paid, Southwest Ranches Fire and EMS Department (SRFED). All primary aspects of the Town having its own fire and EMS department are addressed.

Characteristics of a Standalone SRFED

As outlined in this Report, the characteristics of a standalone SRFED would be a full-service fire and emergency medical services delivery agency including the following characteristics:

- Commanded and administered by a full-time uniformed fire chief;
- A uniformed chain of command that includes chief, battalion chiefs, captains, lieutenants, paramedics, and firefighters;
- Captains could serve as program managers (training, EMS, or prevention) or station commanders (one per station) serving also as engine unit officers;
- Administrative support for accounting, human resources, labor relations, purchasing, and other similar services provided by a civilian;
- Fire prevention activities headed by a uniformed captain;
- Fire training programs supervised and coordinated by a uniformed captain;
- EMS quality assurance and EMS training programs managed by a uniformed captain;
- Medical direction provided by a qualified physician;
- Secretarial support provided by a civilian staff member;
- Incident and shift command provided by battalion chiefs 24-7;
- Engine companies commanded by unit commanders, captains, and lieutenants;
- Incident response provided from two fire stations—Station 82 and Station 112;
- Two staffed engines, one responding from each of the two fire stations;
- Two staffed rescue units, one responding from each fire station;
- Each engine staffed 24-7 with a unit officer (captain or lieutenant) and two firefighter/paramedics;

- Each rescue staffed 24-7 with a minimum of an EMT-A and a paramedic;
- All incident responses would involve the dispatch of the closest available fire/EMS unit;
- Full participation in a regional fire/EMS automatic mutual aid system; and,
- The operations staff (battalion chiefs, apparatus-assigned captains, lieutenants and firefighters/paramedics) would work a 24-hour shift on an average 48-hour Fair Labor Standards Act compliant work schedule.

Services Provided by a Standalone SRFED

The primary services to be provided by the SRFED as envisioned by the Study Team would be as follows:

1. Fire mitigation;
2. Pre-hospital EMS;
3. Basic special operations, e.g., dive, technical rescue, and large animal rescue;
4. Fire safety inspections, education, and fire investigations;
5. Community training and education; and,
6. Emergency management.

Uniformed Staffing

The uniformed staff of the SRFED would consist of the following ranks:

1. Fire Chief;
2. Deputy/Assistant Fire Chief;
3. Battalion Chief;
4. Captain for EMS
5. Captain for Training;
6. Captain for Fire Prevention;
7. Captain Station Commander / Unit Officer;
8. Lieutenant Unit Officer;
9. Fire Inspector;
10. Driver Engineer; and,
11. Firefighter/Paramedic.

The **Town Fire & EMS Services Department** (SRFED) options and recommendations include:

1. Considering the services delivery and related estimated costs associated with the possible standalone fully staffed Southwest Ranches Fire and EMS Department model options.
2. Implementing the standalone SRFED model and developing a detailed implementation plan should the Town select this option.

CONTRACTUAL FIRE & EMS DELIVERY MODEL

This Report describes the model involving another municipal fire department providing all aspects of fire and emergency medical services for the Town of Southwest Ranches. All primary aspects of fire, EMS, and related services provided to the Town are discussed in this chapter.

As the reader will note, Chapter Ten–Cooperative Services Provision, contracting for fire and EMS services is an important and typically very effective way for a municipality not having its own full-time fire department (such as Southwest Ranches) to assure the provision of fire and EMS services related public safety services.

The Study Team has observed and recommended that many municipalities provide various municipal services, including fire and EMS services, to other municipalities on a contractual basis. There are a number of types of fire and EMS services (e.g., inspections, command and training) that may be provided by contract. The most comprehensive and beneficial approach is contracting for full fire and EMS delivery.

The benefit to the receiving municipality could be the provision of a service too costly for it to otherwise fund and provide. The benefit to the providing municipality could be provision of revenue to offset the cost of providing its services or the opportunity to fund a costly service it might not otherwise financially be in a position to precede.

The current contract between the adjacent towns of Davie and Southwest Ranches for the Davie Fire Department to provide substantial fire and EMS services to Southwest Ranches is an excellent example of cooperative services delivery via contract. Having previously contracted for the services of two other adjacent fire and EMS services providers, the Broward County Sheriff's Office and the City of Pembroke Pines, the

Town of Southwest Ranches has a rich history of contracting for full-time fire and EMS services to work in conjunction with its Southwest Ranches Volunteer Fire-Rescue Department (SRVFRD).

Apparatus and Stations

For the delivery of fire and EMS services the following primary apparatus (pumpers and rescues) are provided by Davie and Southwest Ranches at the fire stations indicated.

Fire Station 112/82 - 17220 Griffin Road

DFD provides the following primary apparatus for Fire Station 112 on Griffin Road:

- Pumper, ALS Type I Class A
- Rescue, ALS transport, medium duty, Type I (KKK) ambulance

SWRFRD provides the following primary apparatus for Fire Station 82 on Griffin Road:

- 1995 Pierce 1250 GPM pumper (recommended for replacement)

Fire Station 91 - 6101 SW 148th Avenue (Volunteer Road)

DFD provides the following primary apparatus for Fire Station 91

- Pumper, ALS Type I Class A
- Rescue, ALS transport, medium duty, Type I (KKK) ambulance

The **Contractual Fire & EMS Services Delivery** options and recommendations include:

1. Utilizing the current Davie–Southwest Ranches contract as a model template for future contracts.
2. Considering the annual percentage increase to be paid is reviewed for appropriateness.
3. Renewing future contracts in five-year increments.
4. Staffing of a minimum of three firefighters and officers for pumpers and two for rescues.
5. Considering response-time goals to be based on NFPA 1710.
6. Implementing services delivery by implementing closest unit dispatch mutual aid.
7. Periodically an operations contract audit should be conducted to verify contract compliance and identify means for improvement in the contract.

VOLUNTEER FIRE DEPARTMENT MODELS

This Report provides information regarding the history, administration, and operations of the Southwest Ranches Volunteer Fire-Rescue Department, Inc. (SRVFRD). All primary aspects of the fire, EMS, and related services provided by the SRVFRD are discussed in, including compensation. In addition, options for the future of the SRVFRD in terms of fire and EMS services delivery to the Town of Southwest Ranches are discussed.

This Study also provides information regarding other options for consideration by the Town of Southwest Ranches that relate to the following models:

1. Stand-alone town fire department comprised of paid and volunteer staffing—a combination paid-volunteer town fire department;
2. Maintaining contractual paid staffing model and SRVFRD volunteer staffing—continuing the paid-volunteer approach to services delivery;
3. Split model volunteers for fire protection response and paid (town or contractual) staffing for emergency medical services response;
4. All volunteer staffed standalone Southwest Ranches Fire and EMS Department (SRFED); and,
5. Reliance only on either a town or contractual paid staffed model for fire and EMS services.
6. Diminish or eliminate the role of the SRVFRD in fire and or EMS services delivery.

The **Volunteer Fire Department Model/s** options and recommendations include:

1. Modifying the Mission Statement of the Southwest Ranches Volunteer Fire-Rescue Department (SRVFRD) as appropriate.
2. Considering the approach to stipends for SRVFRD firefighters and officers.
3. Placing a high priority on updating policies, procedures, and guidelines.
4. Considering the various fire and EMS services delivery models and implementing the appropriate option/s relating to the SRVFRD.

VOLUNTEER RECRUITMENT AND RETENTION

The Report reviews information relative to fire, EMS and rescue volunteer recruitment and retention. Additionally, associated options and recommendations are outlined for consideration by the Southwest Ranches Volunteer Fire Department (SRVFD) and the Town. It further includes information regarding volunteerism generally; recruitment of volunteers; retention of volunteers; current efforts in recruitment and retention; length of service awards program; and other related topics associated with possible volunteer involvement.

The **Volunteer Recruitment & Retention** options and recommendations include:

1. Place periodic articles in local newspapers regarding activities of the volunteer component.
2. Implementing a comprehensive volunteer recruitment and retention program to include:
    a. Recommendations for volunteer retention programs based on input received from exit interview or forms;
    b. Budget recommendation for the recruitment and retention programs;
    c. Recommendations for volunteer recruitment programs;
    d. Volunteer handbook that can be given to prospective members of the fire departments, explaining the benefits and requirements of being a volunteer;
    e. Programs focusing on retention of members during their first four years of membership; and,
    f. Programs focusing on the recruitment and retention of volunteer members to participate in the provision of fire and rescue services.
3. Financially supporting the volunteer recruitment and retention efforts.

COOPERATIVE SERVICES PROVISION

Cooperative services provision initiatives and successes are a national trend in the provision of public safety services. The Study Team has extensive knowledge and experience with the consolidation and regionalization options and related benefits available to cities and towns for consolidation and regionalization of various functions, including fire and emergency medical services. It is for that reason that a full chapter of

this Report is dedicated to this subject for consideration by Town officials, services providers, and taxpayers.

There are many benefits that may be attained through fire, emergency medical, and dispatch services consolidation and regionalization, including:

1. Increased efficiency;
2. Improved effectiveness;
3. Seamless delivery of services;
4. Elimination of overlaps in positions;
5. Elimination of duplicate equipment;
6. Reduced response time for units dispatched;
7. Increased opportunity for staff specialization;
8. Upgrading recruit training programs;
9. Opportunity for increased promotional selectivity;
10. Increased promotional opportunity for personnel;
11. Potential revised perspective/outlook of personnel;
12. Enhanced or expanded services;
13. Improved safety of customers and services providers;
14. Reduced costs;
15. Improved incident command coverage;
16. Improved allocation and utilization of staffing;
17. Cost avoidance;
18. Coordination of planning;
19. Standardization of services and programs;
20. Improved and more effective training;
21. Potential improved ISO rating; and
22. Impact on future state and federal grants funding.

This Report outlines a number of fires, emergency medical, and dispatch cooperative services options available to the Town for consideration.

The **Cooperative Services Provision** options and recommendations include:

1. Encouraging the full implementation of closest available automatic mutual aid between all area fire departments, as circumstances allow.
2. Establishing a cooperative services implementation task force with adjacent municipalities and fire and EMS services delivery agencies.

CONSIDERATIONS FOR STUDY DECISIONS

There are many varied considerations that, either directly or indirectly, enter into any analysis and resulting plan involving a determination of the total number of firefighters and officers needed to staff a fire department. These may include:

1. The public's fire services delivery expectations of the fire department, as determined by municipal or other decision makers;
2. How soon after arrival at the scene of a fire is the fire department to initiate interior firefighting, e.g., immediately or when the second fire unit arrives.
3. Geographic layout of the fire services area;
4. Geographic barriers to apparatus response, e.g., bays, lakes, canals and creeks;
5. Age of the community and building stock;
6. Density of population and development;
7. Level of consistency with national standards/guidelines and accepted practices;
8. Number of fire stations in the service area;
9. Distance between fire stations;
10. Roadways and their design;
11. Type and age of fire apparatus;
12. General fiscal condition of the municipality;
13. Community water supply;
14. Type of staffing approach, paid, volunteer or combination;
15. Actual and projected response times of apparatus;
16. Availability and use of mutual aid fire apparatus response;
17. Unique aspects of the service area, e.g., canals;

18. Current and projected call workload;
19. Quality of dispatch agency;
20. Relative level of training of personnel;
21. Is the fire department to provide emergency medical first responder and/or transport services;
22. Is the fire department to provide unique services, e.g., boat service, large animal rescue;
23. Is the fire department to provide light vehicle extrication;
24. Is the fire department to provide a level of fire prevention services, e.g., building inspections, fire investigations, building plans review and public fire education;
25. Is the fire department responsible for its own apparatus repair and maintenance; and,
26. Is the fire department responsible for its own radio maintenance and repair?

The reader will come to understand, as this Report is reviewed, how these and other considerations enter into the determination of a fire department's uniformed and civilian staffing levels. Further, the reader will come to understand that decisions regarding the overall staffing of a fire department are driven by many factors and considerations that are largely based on the nature of the service area; the type and quality of services to be delivered; and relative cost of fire and EMS services delivery. For these reasons, it should be understood there is no single factor in determining the appropriate overall staffing of a fire department and that municipal decision makers have a complex job to perform in determining the appropriate level of staffing for their fire and EMS department. **A major goal of this Southwest Ranches Fire Operational Study is to provide decision makers and services providers with the information and tools with which to make informed decisions**.

FISCAL IMPACTS

Fiscal impact will vary based on which, if any, options and recommendations are implemented by the Town of Southwest Ranches. The primary areas related to costs and savings (cost avoidance) include:

1. Upgrading the SRVFRD fire station facilities;
2. Upgrading the fire EMS apparatus fleet; and,
3. Implementing training program upgrades.

As the Town decides on a specific course of implementation, appropriate technical assistance should be provided to assess the fiscal impacts and plan for any changes.

RETURNS ON INVESTMENT

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. Often they are mutually exclusive.

A number of the anticipated returns on investment for the operations and management recommendations in this Study include:

1. Increased pride in the organization;
2. Reduced loss of time on the job through comprehensive firefighter safety programs;
3. Improved cost effective service through automatic mutual aid;
4. Improved firefighter effectiveness through upgraded training;
5. Improved morale;
6. Improved accountability;
7. Reduced dispatch processing time;
8. More effective use of key senior staff members; and,
9. Improved level of services.

While a suggested timeline is provided as a guide for consideration of changes, the Town Council should make the final decisions relative to implementation.

ANNUAL UPDATES

The Town is encouraged to assign both Town and fire and EMS staff to update this Study on an annual basis.

CUSTOMER ORIENTATION

In the judgment of the Study Team, the Town of Southwest Ranches is encouraged to embark on a course that will enhance the delivery of fire protection and EMS services. All decisions should be based, within financial constraints, on what is best for the customer in the Town of Southwest Ranches.

CHAPTER ONE
INTRODUCTION

A brief overview of the Town of Southwest Ranches in this chapter includes: the setting; governance of the Town and the history; and the organization and operations of the fire and emergency medical services (EMS) providers. This chapter also summarizes the methodology for conducting this Fire Operational Study, referred to in this report as the Study.

THE SETTING

The Town of Southwest Ranches is in Broward County fifteen miles southwest of Fort Lauderdale on the eastern edge of the Florida Everglades.

The Town is approximately 13 square miles and, according to the 2010 U.S. Census, had a population of 7,345. As stated in the Town's website, it is "a rural environment, filled with grazing animals, nurseries, farms and exquisite and unique scenery and an abundance of wildlife."

The Town is in close proximity to I-75, I-595 and US 27.

History of the Town

The Town of Southwest Ranches was incorporated on March 14, 2000. Subsequently, the Charter was drawn up by a Charter Committee and approved by the residents on June 6, 2000. Since the area had many horse ranches and is located in the southwestern part of the County, residents involved in the incorporation process chose "Southwest Ranches" as the name of the new Town after considering 122 different names.

Town Governance

The government of the Town is comprised of a Council and an Administrator. The Southwest Ranches Charter defines the governing body as a five-member council: a Mayor and four council members. The Town Administrator is one of three Charter positions and is responsible for the day-to-day operations of the Town.

DELIVERY OF FIRE AND EMS

By contract, the Town of Davie Fire Department (DFD) and the Southwest Ranches Volunteer Fire-Rescue Department (SRVFRD) provide fire, EMS, and related services to Southwest Ranches in a team approach.

SCOPE OF THE STUDY

The scope of this Study is to review multiple scenarios and make appropriate recommendations. In that regard, PSSi will, at a minimum, consider and assess the following fire and EMS services delivery model options:

1. **Establishing a stand-alone Fire Department, eliminating outside contractor reliance.** This evaluation will include a summary of the infrastructure and equipment needs, staffing requirements, administration and training needs in a proposed timeline consistent with current contractual status and all projected costs. All models of possible services delivery shall be analyzed, including but not limited to, consideration of a split model—volunteers for fire response and professionals for EMS services, similar to Plantation, Florida.
2. **Maintaining contractual fire and EMS services.** This evaluation will include a summary of the benefits and deficits of maintaining contractual services. This evaluation will also consider whether the SRVFRD is necessary, and will evaluate the costs of such services when compared to the potential need for additional contractual services, if necessary.
3. **Maintaining existing outside contractual services in conjunction with the VFD services.** We will develop models to accurately define volunteer services and recommend the most cost-effective method to ensure public safety as provided by outside contractual providers in tandem with the SRVFRD. Multiple models may be proposed, as appropriate, for consideration. Projected costs will include the cost of bringing facilities and equipment up to standard, proposed staffing, training and administrative needs.
4. **Identify other viable models**, as appropriate, not included above that will also be presented and broken down into component details and related costs.

STUDY METHODOLOGY

In conducting this Study for the Town of Southwest Ranches, the Study Team used a proven and consistent approach to conduct and complete fire department analysis. This methodology incorporates eight distinct, but interrelated phases: data collection; interviews with key individuals; on-site observation; analysis of data; comparative analysis (which included the computerized fire station location analysis); alternatives and recommendations; submission of a written Study; and an oral briefing.

In addition, the following Study guides were considered.

Fire Department Accreditation

The framework for this analysis incorporated the model developed by the Accreditation Committee of the International Association of Fire Chiefs (IAFC) [now the Commission on Fire Accreditation International (CFAI)].

The Commission on Accreditation of Law Enforcement Agencies (CALEA) had previously developed a police department accreditation process for use by police departments. The Commission on Fire Accreditation International developed a similar analysis model for fire department use on a voluntary basis. Inclusion of this model as a framework for this Southwest Ranches Study will assure that the "latest thinking" is considered in this Study.

There are ten major analysis categories included in this CFAI accreditation model. The analysis categories included in this CFAI accreditation 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 Resource
8. Training and Competency
9. Essential Resources
10. External Systems Relations

Within each of these categories, specific criteria and considerations were weighed by the Study Team in the process of conducting this Southwest Ranches analysis. The applicable performance indicators associated with these categories and criteria were considered and addressed where appropriate in this Study.

The CFAI's manual, entitled "Creating and Evaluating Standards of Response Coverage for Fire Departments," provides guidance and direction on the conduct of fire rescue station, apparatus, staffing, and related risk assessment studies. The Study Team utilized the latest (4th Edition) of this CFAI guide in the performance of this Study for the Town of Southwest Ranches.

The reader will note that many of the chapters and sections of this Study report include performance indicators for the respective subject covered in the material following the CFAI reference.

Standards and Accepted Practices

The Study Team also used published fire protection standards and information on accepted principles and practices for the operations and management of fire services as background and guidelines for the conduct of this Southwest Ranches Study.

Some of the key organizations with standards and publications that were utilized as part of this Study are the following:

- National Fire Protection Association (NFPA)
- ISO Commercial Risk Services, Inc. (ISO)
- International Association of Fire Chiefs (IAFC)
- American Heart Association (AHA)
- American Medical Association (AMA)

The National Fire Protection Association follows a nationally recognized process for the establishment of many standards that are applicable to fire protection operations and administration. In many jurisdictions, some of the NFPA standards have been adopted and fully implemented, while in others NFPA standards are utilized as general guidelines for pursuing further improvement in safety and services.

The following list includes some of the key NFPA standards utilized by the Study Team in conducting this Study for Southwest Ranches.

Name of Standard	**NFPA Number**
Standard for Fire Fighter Professional Qualifications	1001
Standard for Fire Officer Professional Qualifications	1021
Developing Fire Protection Services for the Public	1201
Fire Department Occupational Safety and Health Program	1500
Standard for the Organization and Deployment of Fire Ops.	1710

These and other written standards and nationally recognized documents, such as the *NFPA Fire Protection Handbook*, were also utilized by the Study Team as reference materials.

CHAPTER TWO
RISK ANALYSIS

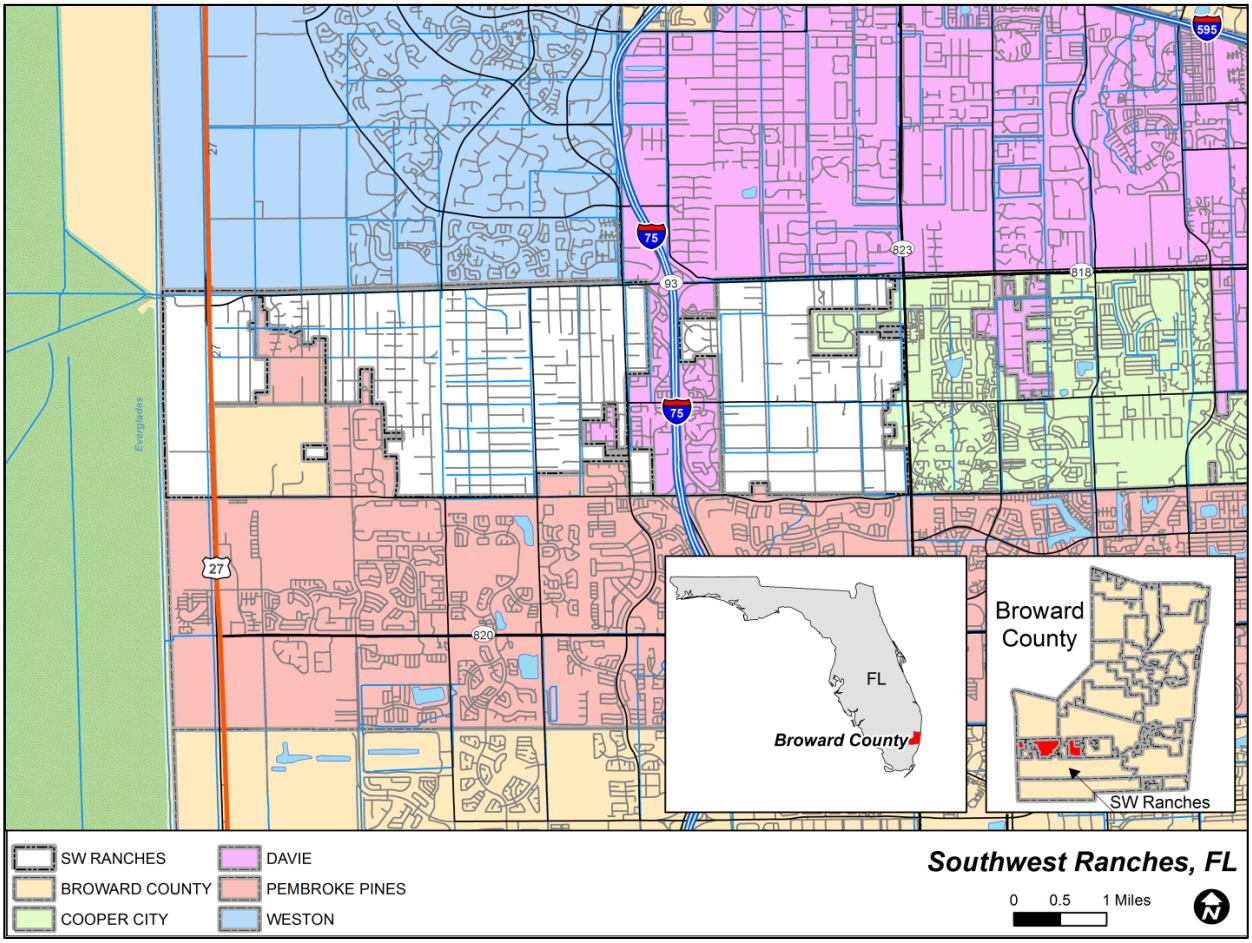
This chapter provides an analysis of the fire and EMS risks faced by public safety services providers in the Town of Southwest Ranches.

SERVICE AREA DESCRIPTION

The Town of Southwest Ranches is located in Broward County, Florida, and is 15 miles southwest of Fort Lauderdale. The Town, incorporated as a municipality in 2000, is located on the eastern edge of Everglades National Park. Its 13-square-mile rectangular shaped geography is zoned mostly rural and agricultural in nature, primarily for large-lot estates and equestrian facilities. Its location along Interstate 75 positions it as a convenient community for workers commuting to nearby cities, such as Miami.

The busy transportation corridor of I-75 splits the Town's area, but fortunately several exits provide access to the Town. The majority of the Town is a collection of residential streets split by necessary drainage canals; these dead-end streets create a lack of traffic connectivity that, although desirable for residents, becomes a challenge for first responders.

Figure 2.1
TOWN LIMITS



POPULATION & HOUSING

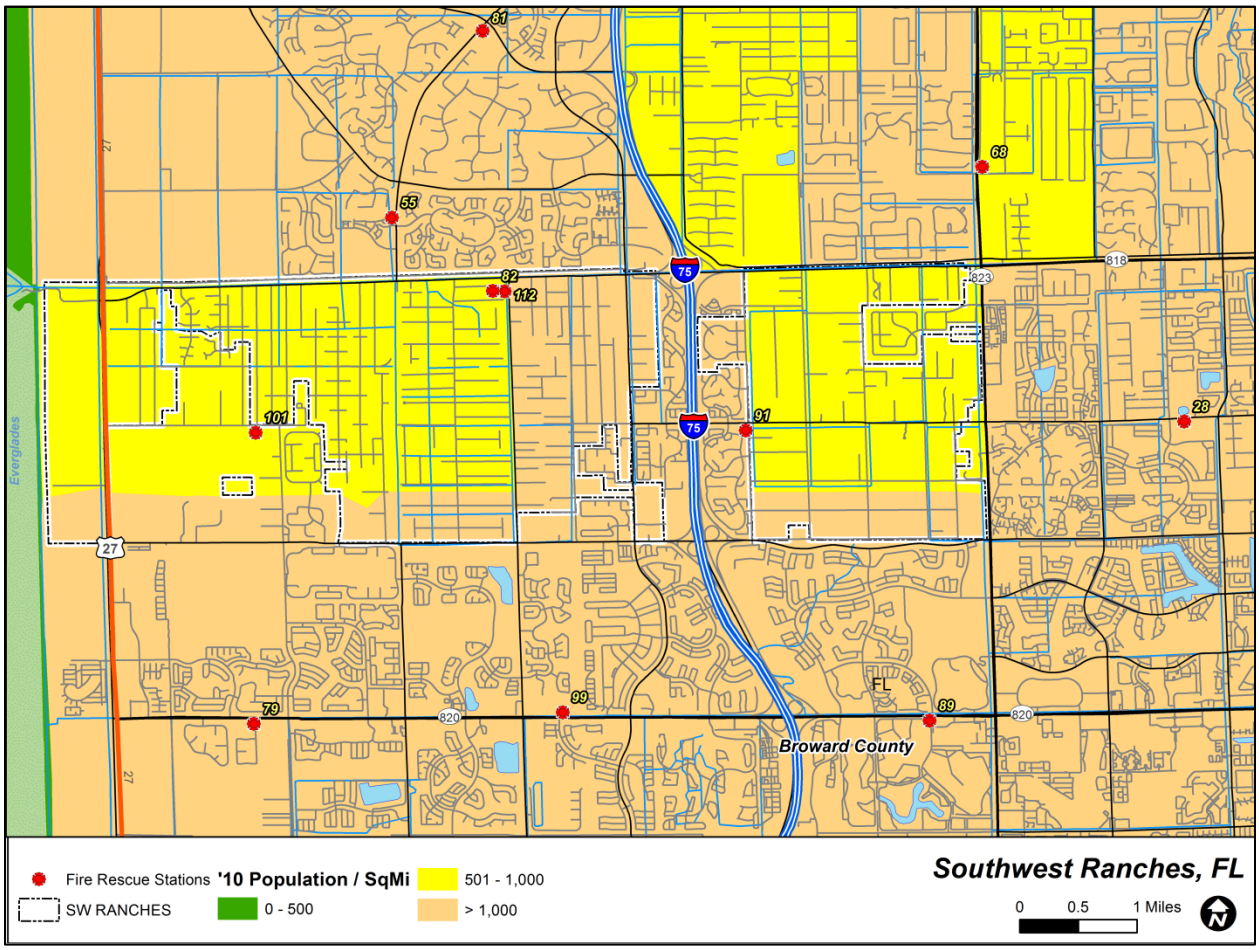
According to the 2010 U.S. Census, the Town's population was 7,345. Previously, the Town was unincorporated and a part of a census-designated place that included other unincorporated areas that have since been annexed into other jurisdictions. An estimated population in 2000 was 7,076 persons, which indicates a 0.4% annualized growth rate. The estimated 2012 population is 7,601, which shows an increased rate of growth.

These population figures represent the residential population and do not account for the variation for commuters, shoppers, and out-of- area employees during the daytime hours.

It is estimated that the Town decreases in population by over 30% due to commuting patterns.[1]

The demand for emergency services correlates with areas of higher population. Figure 2.2 illustrates the concentration of residential population for the Town of Southwest Ranches by Census block group areas.

Figure 2.2
POPULATION DENSITY

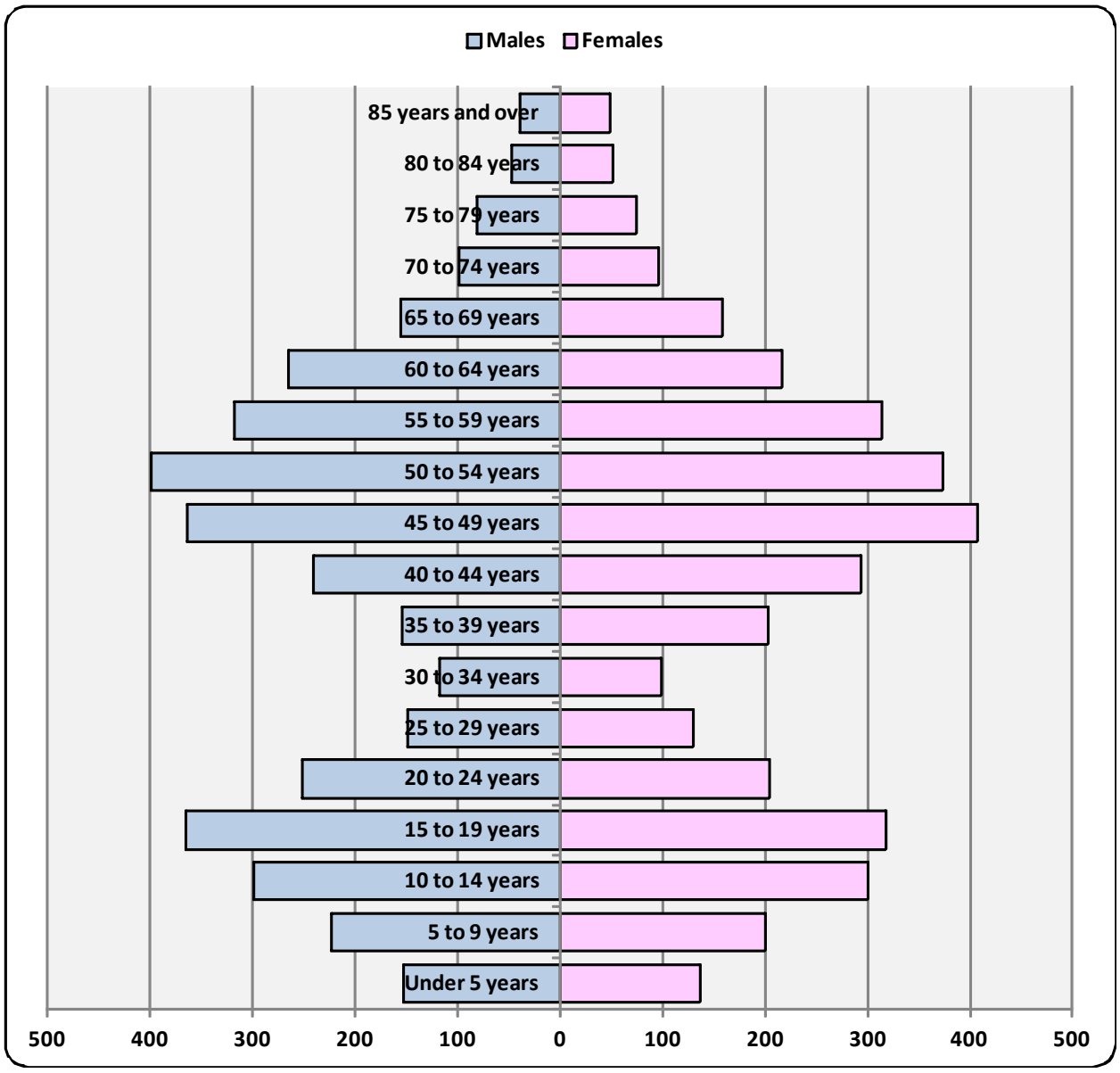


Although population levels play a role in the geographic distribution of demand for fire and medical services, it is important to examine the composition of the population. Aged and pediatric populations are more prone to serious medical emergencies and to succumb to smoke and fire due to their behavioral tendencies during a fire. Children often hide

[1] Broward County Planning Services, "By the Numbers," March 2013, Edition 60

making an interior search by firefighters more difficult, while mobility issues limit the ability of elder residents to escape. Figure 2.3 illustrates the levels of population by age group in the Town of Southwest Ranches.

Figure 2.3
CURRENT POPULATION BY AGE GROUP

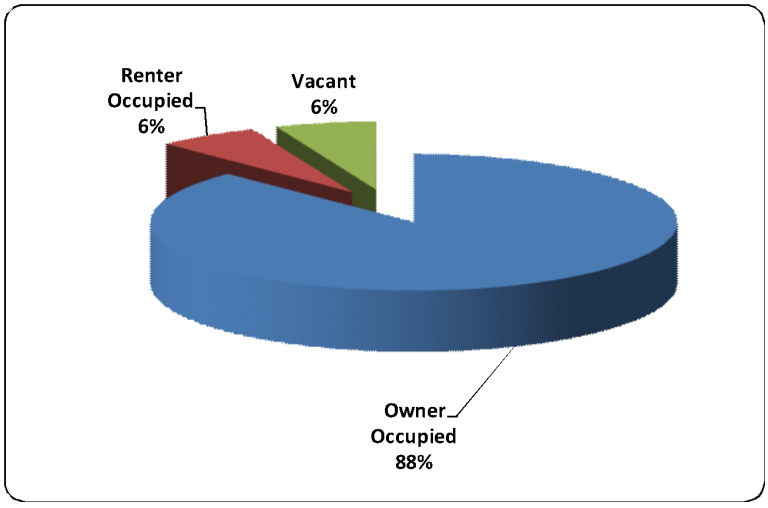


The median age of the Town's residents is 43.7, compared to 40.7 for the state and 37.2 for the nation. Four percent of the Town's population is less than five years of age and 12% are over age 65. Efforts for fire prevention and fire escape procedures should be emphasized with these two age groups.

The older age cohorts (ages 45 to 64) have relatively larger amounts in population numbers. It should be noted that within the next ten years the bulk of this "baby boomer" population (those born between 1946 and 1964) are poised to enter the ranks of "senior citizen" (generally those above the age of 65). It is expected that demand for medical emergencies will rise and the threat of fatal fire death may also increase based upon the age progression of the population.

Figure 2.4 examines housing by type of occupancy. It should be noted that a higher than average national and statewide rate of owner-occupied properties exists in the Town. This is important because areas with lower vacancy and rental properties are typically reflective of better economic means, which correlate with lower demand for emergency services.

Figure 2.4
HOUSING BY OCCUPANCY



Rural/agricultural areas typically have less vacant and rental properties, which is the case with the Town of Southwest Ranches.

CHAPTER THREE
FIRE & EMS SERVICES MODEL CRITERIA

This chapter outlines various criteria that should be considered in determining the proper optional criteria to be considered by the Town of Southwest Ranches when determining the model to be implemented or maintained for the delivery of fire and emergency medical services to residents, taxpayers and business owners/operators.

The reader will note that the specific application of applicable aspects of the criteria contained in this Chapter will be discussed in each of the various models or approaches relative to the provision of fire and/or EMS service/s to the residents and businesses of Southwest Ranches. It should be noted that some aspects of these references to National guidelines and standards do not currently or may never apply to Southwest Ranches, however, each subject area reference is presented in its entirety to provide overall context to the reader. Further, it will be noted that fire station facilities and apparatus criteria is also discussed in each respective chapter, Fire & EMS Facility Locations and Fire Rescue Apparatus, later in this Study Report in order to address all criteria in this single Chapter, as well as, in each subject's overall subject context.

ORGANIZATION

Overview

Organizing fire and emergency services within a community to provide the most efficient and cost-effective delivery of quality service is one of the most important functions of local government. Historically, many fire/EMS services were developed and organized on the basis of local neighborhood need and initiative and, in many instances, volunteer fire departments were initially formed. However, as communities have become increasingly urban, calls for service have increased resulting in the need for increased coordination and direction of fire and rescue services and resources through paid services.

A key fire and EMS organizational principle relates to the basic responsibility for public safety within the community. In most areas of North America, it is widely accepted that the provision of fire and EMS service is considered to be a local government responsibility. Local government is broadly interpreted to include municipalities, such as cities, towns, villages, and townships.

To attain the delivery of optimum fire and emergency medical service, it is essential that local government recognize and accept this responsibility and fulfill the obligation to provide appropriate guidance and direction in order to:

- Oversee the formation process of the organization of fire and EMS services;
- Ensure that the fire/EMS organization reflects the public interest;
- Protect the service from undesirable external interference;
- Determine basic policies for providing services; and,
- Legally define the duties and responsibilities of service providers.

Identification of this authority and responsibility is addressed in Section 3-1 of NFPA 1201, Developing Fire Protection Services for the Public, as follows:

> "The government agency responsible for establishment and operation of the fire department shall adopt a formal statement (bylaw, statute) of purpose and policies for the fire department that includes the type and levels of services that are to be provided, the area to be served, and the delegation of authority to the fire chief and other officers to manage and operate the fire department."

Accepted Principles And Practices—Organization

Both the National Fire Protection Association (NFPA) standards and Commission on Fire Accreditation International (CFAI) criteria provide guidance to municipalities and fire departments relating to organization structure.

NFPA 1201 - Standard for Developing Fire Protection Services

NFPA 1201 provisions relate further to the organization structure of fire departments providing guidance to this Fire Operational Study as follows:

> **"Chapter 5: Organizational Structure of the Fire Department**
>
> 5-1 Purpose. The fire department shall have an organizational structure that facilitates efficient and effective management of its resources to carry out its mandate.
>
> 5-2 Management/Fire Chief.
>
> 5-2.1 The manager of the fire department shall be the fire chief. The fire chief shall be governed in the development of regulations and orders by the

provisions of all applicable laws or ordinances and shall maintain a file of such documents.

5-2.2 The fire chief shall be appointed on the basis of merit and ability.

5-2.3 The fire chief shall communicate closely with the local government chief executive and governing body.

5-2.4 The governing body shall establish only the primary policies of the fire department and shall not act as an administrative agency or direct day-to-day management of the department."

CFAI Governance and Administration Criteria

The CFAI accreditation criteria related to fire department organization governance and administration that is relevant to this Fire Operational Study is as follows:

Performance Indicators

The governing Board and/or agency manager has been legally established to provide general policies to guide the agency, approved programs and services, and appropriated financial resources.

1. The agency has been legally established.
2. The governing body having jurisdiction over the fire service organization or agency periodically reviews and approves programs and ensures compliance with basic agency policies.
3. The governing body approves the administrative structure that carries out the agency's mission.

There is an established administrative structure and environment for achievement of the agency's mission, purpose, goals, strategies and objectives.

1. There exists an administrative structure which reflects the agency's mission, goals, objectives, size and complexity.
2. Allocation of resources reflects the agency's mission, goals and objectives.
3. The agency administration demonstrates compliance with legal requirements of local, state, and federal governments.
4. Personnel functions, roles and responsibilities are defined in writing and a current organization chart exists.

The Study Team considered these criteria as the organization of the Town's emergency services was reviewed as part of this Fire Department Study.

FIRE & EMS FACILITIES

CFAI Fixed Facilities Criteria

The Study Team considered criteria from the Commission on Fire Accreditation International (CFAI) as the fire and EMS facilities are considered as part of this Fire Department Study.

The CFAI accreditation criteria related to fire department fixed facilities are as follows:

Fixed facility resources are designed, maintained, managed and adequate to meet the agency's goals and objectives.

Performance Indicators

1. Space allocations are adequate for agency functions such as operations, fire prevention, training, support services and administration.
2. Buildings and grounds are clean and in good repair. Maintenance is conducted in a systematic and planned fashion.
3. Physical facilities are adequate and properly distributed in accordance with stated service level objectives and standards of cover.
4. Facilities are in compliance with federal, state and local regulations.

Criteria for Facility Locations

The model criteria related to the location of fire and EMS facilities is outlined in Chapter Four, Fire and EMS Facilities.

APPARATUS STAFFING

This section reviews apparatus staffing generally as it relates to the staffing levels of fire and EMS apparatus—engines, ladders, heavy rescue units, and rescue patient transport units that support the treatment and transport of patients. The Study Team has developed

an overview of fire services staffing based on practical experience and fire and EMS consultant assistance in the United States.

The major cost of a fire rescue department is salaries and wages for the personnel, firefighters, and officers. For that reason, staffing levels become a crucial budget consideration, as well as service level issue, for municipalities and their fire departments. Depending on which of the various fire rescue service models is utilized, staffing has been justified by experts to include from three individuals per piece of apparatus to as many as six. The variables in this decision process involve:

1. The demographics of the community;
2. The numbers of fire and EMS calls to which the units respond;
3. The location of the fire stations and their distance of travel and response time for back-up;
4. The type and age of buildings in the community, as well as the building occupancies—residential, commercial and industrial—that exist within the community; and,
5. The nature of the fire rescue protection and related risks in the service area.

From the perspective of operations, the Study Team believes the minimum staffing for any fire unit (engine, squad, and truck) should be at least three individuals. Specialty or multifunctional units, such as quints (combination pumper/truck units), may require increased staffing to upgrade safely and be fully operational.

For water flows of 150 gallons per minute or less, it takes two individuals to maneuver the hose line and one operator at the pumper. For water flows higher than this amount, at least three firefighters are needed to maneuver the hose line into the correct position and hold the hose line in place during suppression activities.

Raising ladders for rescue requires two to three firefighters, depending upon the length of the ladder. Ground ladders longer than 35 feet require as many as four firefighters to raise the ladder in place. If a rescue is to be made, these ground ladders must be removed from their storage on the unit, carried to the correct location, and raised in place. Without sufficient personnel, this activity would likely be delayed, resulting in the potential for injury or death to civilians and firefighters.

The key objective is maintaining sufficient personnel on each piece of apparatus in order to use it effectively and safely.

Studies and staffing trials have shown that the performance of critical firefighting tasks can be performed in a safer and quicker manner with an increased number of firefighters and officers. The purpose of one such study, conducted in Milwaukee, was to determine the relative times required to lay and advance a hose line to the fourth floor using three-, four-, five-, and six-member engine companies. That study showed, for example, that it may take 34 percent more time for three firefighters to accomplish the work than it does four firefighters, and it may take 82 percent more time for two firefighters to complete the tasks.

The successful completion of critical tasks during emergency fire and EMS operations has a direct impact on the overall success of incident mitigation (e.g., fire suppression and patient medical care) and upon the level and quality of service delivery to the public. Fire and EMS tasks must be completed in both a timely and safe manner.

For reasons of economics, there are few fire rescue departments in the United States that operate with the optimum apparatus staffing (e.g., 5 or 6 firefighting staff members on engines and ladders). The actual number of firefighters and officers available to staff the fire rescue department apparatus will ultimately be a municipal policy decision and reflected in the fire department's budget allotment for personnel. The fundamental policy decision must determine how many firefighters and officers are to be on duty for each fire and EMS company (engines, ladders and EMS transport units) every day.

Firefighter Utilization

One might assume that if three personnel are on an engine or truck, all three of those personnel are available for interior fire attack when they arrive on the scene of a working fire. That perception is not accurate because, most often, the unit driver must remain with the unit to operate the pump, the aerial ladder, or set up equipment to support firefighting operations.

In a real situation, using engine operations as an example, the following are the functions initially performed by a crew of three:

Driver/Operator

- Sets and operates the pump
- Develops water supply

- Provides equipment to part of building
- Relays radio communications
- Guides apparatus placement for incoming units

Officer

- Provides initial incident command
- Sizes up the incident
- Performs circle check of building
- Directs crew of one in interior attack
- Is part of two person interior fire attack crew
- Handles radio communications for crew
- Provides interior command as necessary

Third Person

- Lays out supply line
- Pulls and advances hand lines
- Begins interior fire attack with officer as crew of two

This example presumes that there are no immediate incident complexities, such as medical or rescue emergencies. A similar example could be outlined for the staffing of a ladder truck.

The purpose of this discussion is to point out the justification of staffing engines and ladder trucks with three personnel as the absolute minimum. Personnel on primary units staffed by one or two personnel cannot function as independent crews on the scene of emergencies. Personnel responding on units staffed by one or two personnel must join up with other personnel from other units, after arriving on the scene, to develop crews for a fire attack.

Staffing levels should be carefully monitored, with optional firefighter and officer absences (vacation leave, etc.) being controlled in order to maintain minimum staffing levels and assure that an excessive number of personnel are not authorized leave at the same time. This staffing information is invaluable in assessing the level of service.

Rescue Staffing

Two qualified personal is generally accepted by municipalities and their fire departments to be the minimum staffing requirement for ambulance rescue units providing pre-hospital basic or advanced life support services. A number of metropolitan fire/EMS services staff their busier units with a minimum of three personnel due to call loads or the generally serious nature of EMS calls being handled. Rescue units cannot function with less than two personnel.

Apparatus Staffing Goals

The standard for fire department deployment and operations is NFPA 1710, which is discussed in the Fire Services Deployment Chapter later in this report in relation to response times. It is an industry guideline that serves as a benchmark for the fire department organization and deployment of services.

NFPA 1710 addresses fire, EMS, special, wildland and marine operations. These various operational areas are addressed with benchmark requirements based on a fire involving a 2,000-square-foot detached single-family occupancy. Fire departments are expected, under the approach taken by 1710, to deploy additional resources according to occupancies and hazards in their jurisdictions.

This NFPA standard, which includes provisions relating to apparatus staffing, has been adopted and implemented, in whole or in part, in a number of cities, counties, and towns. It has also been utilized in many fire departments as a guide for goal planning documents and policies and procedures, due largely to economic impact considerations.

Staffing of fire apparatus is a key component of NFPA 1710. In developing the staffing component of the standard, the NFPA Technical Committee reviewed numerous studies, evaluations, and stakeholder reports containing empirical data on departmental response and mitigation of fire. These studies clearly documented that for safe, effective, and

efficient fire suppression, each responding company needs a minimum number of firefighters and officers.

NFPA 1710 specifies the following minimum staffing levels by type of company and function:

1. Engine Companies—Fire companies whose primary functions are to pump and deliver water and perform basic firefighting at fires, including search and rescue, are known as engine companies to be staffed with a minimum of four on-duty personnel.

   In jurisdictions with tactical hazards, high-hazard occupancies, high incident frequencies, geographical restrictions, or other pertinent factors are to be staffed with a minimum of five or six on-duty members.

2. Ladder Truck Companies—Fire companies whose primary functions are to perform the variety of services associated with truck work (such as forcible entry, ventilation, search and rescue, aerial operations for water delivery and rescue, utility control, illumination, overhaul and salvage work) are known as ladder or truck companies. Ladder truck companies are to be staffed with a minimum of four on-duty personnel.

   In jurisdictions with tactical hazards, high hazard occupancies, high incident frequencies, geographic restrictions, or other pertinent factors shall be staffed with a minimum of five or six on-duty members.

3. Other Companies (heavy technical rescue squads, etc.)—Other types of companies equipped with specialized apparatus and equipment shall be provided to assist engine and ladder companies (and provide other services, e.g., heavy rescue) deemed necessary as part of standard practice. These units shall be staffed with a minimum number of on-duty personnel required by the tactical hazards, high incident frequencies, geographic restrictions, or other pertinent factors.

4. Quint Apparatus Companies—Fire companies that deploy with quint apparatus, designed to operate either as an engine company or a ladder company shall be staffed with a minimum of four on-duty personnel. If the company is expected to perform multiple roles simultaneously, additional staffing, above the level of four, shall be provided to ensure that those operations can be performed safely, effectively and efficiently.

5. EMS Units (Rescues)—On-duty EMS units shall be staffed with the minimum numbers of personnel necessary for emergency medical care relative to the level of EMS delivery provided by the fire department. EMS staffing requirements shall be based on the minimum levels needed to provide patient care and member safety.

6. Advanced Life Support (ALS)—Personnel deployed to ALS emergency responses shall include a minimum of two members trained to the emergency medical technician-paramedic level and two members trained to the emergency medical technician-basic level arriving on the scene within the established response time. These staffing patterns ensure efficient and effective on-scene operations as evidenced and supported by the American Heart Association and the National Institutes of Health.

Based on these standards and guidelines, the apparent current and future projected nature of Southwest Ranches' fire and emergency medical risks, tactical hazards, hazard of occupancies, incident frequencies and geographic restrictions the Study Team suggests the following as a possible maximum/desired primary fire rescue per unit apparatus staffing level for the Southwest Ranches.

- 4 Engines—including one paramedic;
- 4 Engine/tankers co-located at a fire station with another major unit (ladder, heavy rescue squad or rescue)—including one paramedic;
- 4 Ladder trucks;
- 5 Quints operating as both engine and ladder;
- 4 Heavy rescue squad providing technical rescue services;
- 3 Rescue units providing emergency medical transport services with at least two certified paramedics; and,
- 1 Shift command units.

All other fire rescue apparatus (i.e., brush, light, and SCBA air units and boats) would be staffed on a cross-staffed basis by on-duty personnel assigned to primary units.

APPARATUS

As discussed in further detail in the Fire Rescue Apparatus Chapter of this Study Report, an important part of any fire departments business is the selection and purchase of fire department apparatus ―usually second to salaries and benefits.

Foremost, the selection and purchase process must be based on community needs. 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 several 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." Another factor is how the vehicle or equipment fits in with the previous purchases.

In addition, the 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."[1]

Commission On Fire Accreditation International - Apparatus

The Commission on Fire Accreditation International (CFAI) emphasizes the role fire, EMS and support apparatus and vehicle acquisition and maintenance plays 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] Tutterow, Robert, *Fire Protection Handbook, Fire Department Apparatus and Equipment*, 2008, National Fire Protection Association.

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, staffs 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.

TRAINING

Overview of Fire Services Training

The main objectives of 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 personnel no longer just respond 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 due to the changing environment in which it exists. Numerous changes in technology 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, in addition to the traditional fire and rescue incidents.

In the past decade, society has placed more emphasis on environmental concerns, which also pose 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 department 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 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 are even a few universities in the United States that have bestowed 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.

Commission on Fire Accreditation International - Training

The Commission on Fire Accreditation International (CFAI) emphasizes the role training and education have in the operation of an efficient, safe, effective fire department. Progressive fire departments use this 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 accessible.

8C.4 Apparatus and equipment utilized for training is properly maintained in accordance with the agency's operational procedures and is readily accessible to trainers and employees.

8C.5 There is current inventory of all training equipment and resources.

Criterion 8D: Selection of Training Materials

Materials selected for the training program are based on agency needs.

Performance Indicators

8D.1 There is a process in place for the selection of training and educational resource materials.

8D.2 Training materials are evaluated on a continuing basis, and reflect current practices.

The Study Team considered the CFAI criteria during the Team's review of training functions.

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 32 states using 72 levels of 16 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.

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, Leading 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 before being allowed to take the next course. 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 NFA also offers courses at the college and university levels for staff and command officers, technical specialists, and executive fire officers. 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.

SAFETY

The following sections address fire and emergency medical services providers' safety programs and processes related criteria.

Overview

Over the last decade, there has been increased focus on the safety and health of emergency responders, especially those who are engaged in the delivery of fire and EMS. 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 safety and health 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 stated, "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, there have been more than 300,000 fire-scene related injuries and more than 1,000 firefighters have lost their lives in the line of duty in the United States. According to a recent USFA report, 83 firefighters died in the line of duty in 2011.

Commission on Fire Accreditation International - Safety

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: Risk Management and Personnel Safety

There is a risk management program designed to protect the organization and personnel from unnecessary injuries or losses from accidents or liability.

Performance Indicators:

1. There is a specific person or persons responsible for implementing the Risk Management program.
2. There is a system for identifying and evaluating workplace hazards.
3. There are methods and procedures for correcting unsafe or unhealthy conditions and work practices once they have been identified, and a record system kept of steps taken to implement risk reduction through corrections.
4. There is an occupational health and safety training program designed to instruct the work force in general safe work practices, from point of initial employment to each job assignment and/or whenever there are: new substances, new processes, procedures or equipment. It should provide specific instructions with respect for operations and hazards relative to the agency.
5. There is a system for communicating with employees on occupational health and safety matters, including provisions designed to encourage employees to inform

the agency of hazards, and to minimize occupational exposure to communicable diseases or chemicals.

6. There is a management information system in place to investigate and document accidents, loss time injures, legal actions, etc.

The Study Team considered the CFAI criteria as the health and safety functions of the Town was assessed.

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." 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. All fire departments, and the municipalities that support those fire departments, are urged to discuss the NFFF initiatives and develop a plan by which they can address how their organization can improve the safety of all personnel.

According to the National Fire Protection Association's (NFPA) report, *Firefighter Fatalities in the United States—2011*, half of the firefighter deaths occurring in 2011 resulted from overexertion, stress, and related medical issues. "Of the 32 deaths in this category, 31 were classified as sudden cardiac deaths (usually heart attacks) and one was due to a stroke."

With the leading cause of firefighter deaths consistently being related to health and fitness, it is clear to see why organizations such as the IAFF and the IAFC have taken a strong stance on the importance of health and wellness programs for all firefighters. Today, fire service leaders are seeing the importance of a healthy and fit workforce and are striving to implement health and wellness programs in their departments.

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 using 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 a healthy and safe workforce is a more productive workforce.

In relation to fire department operations, several OSHA regulations have implications: 29 CFR 1910.95 *Occupational Noise Exposure*, 29 CFR 1910.120 *Hazardous Waste Operations and Emergency Response*, 29 CFR 1910.134 *Respiratory Protection*, 29 CFR 1910.146 *Permit-Required Confined Spaces*, and 29 CFR 1910.1200 *Hazard Communication*.

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, which 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 when civil litigation is involved. Because the NFPA standards are recognized by fire service peers as industry practices, non-compliance 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.

POLICIES AND PROCEDURES

The NFPA Fire Protection Handbook states the following:

> "Every Fire Department should have a set of rules and regulations that outline performance expectations for its members, the standard operating procedures for the department and disciplinary action that can be taken against personnel who do not follow the regulations. These rules and regulations can be, and often are, supplemented by orders from the fire chief who may add to or clarify the rules or change them for a special event or specific purpose. Both the rules and regulations and subsequent orders from the chief should be written and distributed in such a manner as to ensure all persons are made aware of them."

FIRE PREVENTION

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."[2]

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 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."*[3]

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

[2] Kirtley, Edward, N.F.P.A. *Community Risk Reduction, Fire Protection Handbook*
[3] Klinoff, Robert, 2007. *Introduction to Fire Protection*, 3rd Edition, Thomson Delmar, Clifton Park, NY.

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 firesetters.
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."

CFAI FIRE PREVENTION/LIFE SAFETY CRITERIA

The CFAI accreditation criteria related to Fire Prevention/Life Safety that is relevant to this Fire Operational 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 trans-actions 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.

CRITERIA FOR SOUTHWEST RANCHES FIRE/EMS MODEL

Based on the previous sections of this chapter that discussed the various aspects of fire and EMS department model criteria, the Study Team suggests that the Town of Southwest Ranches consider adopting and implementing the following criteria for the selected fire and EMS services delivery model. Shading indicates partial or complete compliance.

1. Directed and managed by a full-time professional chief who reports to and is accountable to the Town Administrator of the Town of Southwest Ranches;
2. Provides incident command on a 24-7 basis at the chief officer level, battalion, or other chief officer;
3. Provides first-line unit and fire station supervision 24 hours per day;
4. Includes fully qualified firefighters and officers who are cross–trained to meet national and state fire and training and certification requirements;
5. Includes a comprehensive set of guidelines, policies and standard operating procedures to ensure a well-managed organization, high quality, and safe service delivery;
6. Includes state-of-the-art human resources management practices relative to record recruitment, hiring, training, supervising, assigning, and promoting staff;
7. Maintains in service two fire pumper units for immediate response;
8. Places apparatus in appropriately designed and maintained fire stations;
9. Provides a comprehensive fire training and recertification program;
10. Provides monthly, year-to-date and annual reports to the Town Administrator;

11. Provides annual building inspections and fire preplans for all non-residential occupancies in Southwest Ranches;
12. Prepares and submits National Fire Incident Reporting System (NFIRS) reports that comply with State and National NFIRS reporting standards;
13. Meets State and National service delivery standards, including NFPA Standard 1710/20 relating to apparatus and staffing deployment and response standards;
14. Responds and participates fully in mutual aid with Broward County fire agencies to provide improved fire protection services on a seamless integrated basis and provides necessary fire and rescue resources and services for incidents;
15. Provides fire/EMS supervisors available to any customer in the Town on a 24-hour basis;
16. Includes fully-qualified firefighter and officers cross-trained at the EMT and paramedic levels;
17. Responds with an engine from at least one centrally located fire station;
18. Staffs each engine with a minimum of three (3) cross-trained firefighters providing paramedic level patient service;
19. Responds with an advanced life support (ALS) rescue unit (ambulance type patient transport unit) from at least one centrally located fire station;
20. Staffs the ALS rescue unit/s with a minimum of three (2) cross-trained firefighters providing paramedic level patient care;
21. Assures that staffing of the fire apparatus includes ALS trained firefighters and/or officers to provide paramedic level care on an integrated basis with the rescue unit;
22. Includes a comprehensive EMS-related policies and standard operating procedures manual;
23. Participates in a comprehensive "closest unit dispatched" mutual aid program with adjacent and County fire/EMS units; and,
24. Provides a comprehensive EMS quality assurance program integrated with County and State quality assurance processes and requirements.

Appropriate aspects of the criteria covered in this Chapter will be considered in the discussion of each of the various models or approaches for providing fire and/or EMS service/s to the residents and businesses of Southwest Ranches.

OPTIONS AND RECOMMENDATIONS

3-1 The Town should consider utilizing the suggested model criteria in the implementation of the selected fire services delivery model/s.

CHAPTER FOUR
FIRE & EMS FACILITY LOCATIONS

This chapter examines the locations of fire stations within the Town of Southwest Ranches in relation to geographic distribution, response capability, demographics, and insurance rating recommendations[1]. The performance of the respective fire crews to respond to emergency incidents is assessed based on time travel and service demand patterns. Additionally, the physical location of fire station facilities is reviewed. Finally, related conclusions and recommendations are provided for consideration.

STATION LOCATION ASSESSMENT

The location of a fire station for a specific community depends on the ability to travel within the geography, demographics, and the distribution of commercial, industrial, and residential property. There are nationally recognized benchmarks for locating a fire station that will be discussed in the sections that follow.

ISO Criteria

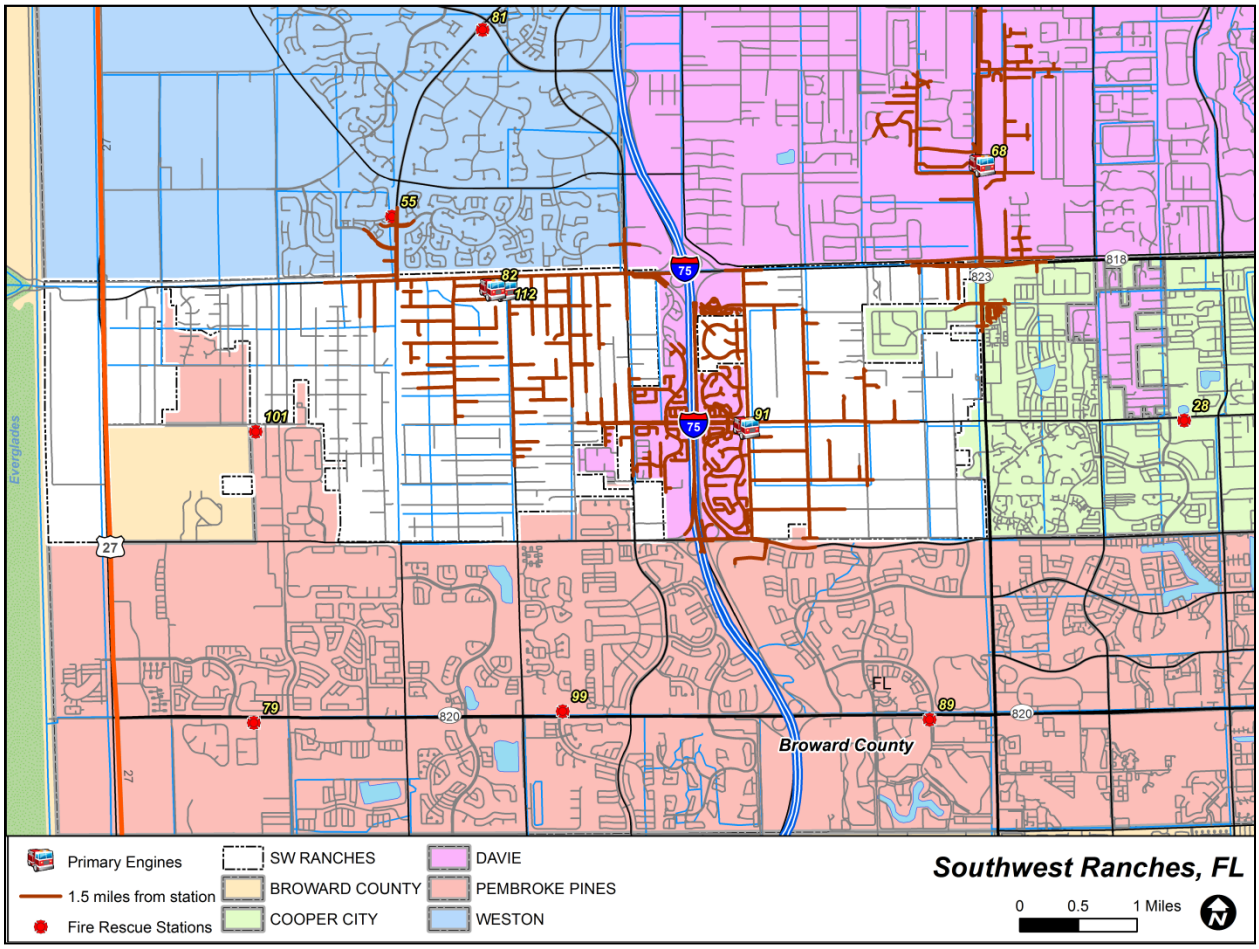
The Fire Suppression Rating Schedule used by the Insurance Services Office (ISO) in its evaluation of municipal fire suppression capabilities includes fire station location analysis with objective mileage-based criteria. Item 460 in the Fire Suppression Grading Schedule, Edition 6-80, reads as follows:

> "The built-upon area of the Town should have a first-due engine company within 1.4 miles and a ladder-service company within 2.4 miles."

The ISO considers the optimum physical location of engine companies and ladder companies essential to earning maximum credits under the Fire Department Item in the Schedule. Obviously, engine companies and ladder companies are placed in fire stations. So it is the location of the fire station that becomes important to the evaluation process used by the ISO. These are very conservative estimates. The problem with using mileage alone is that speed capability of the road affects the time travelled; the ISO criterion does not take this into account. It should be strongly noted that ISO apparatus distance is only one of many criteria upon which the ISO evaluates a department to include equipment, testing, and dispatching. Nonetheless, the following map (Figure 4.1) shows the 1.4-mile distance of Engine Company from the stations that primarily serve the Town.

[1] Raw GIS data used in visualizations and analyses were obtained from Broward County GIS.

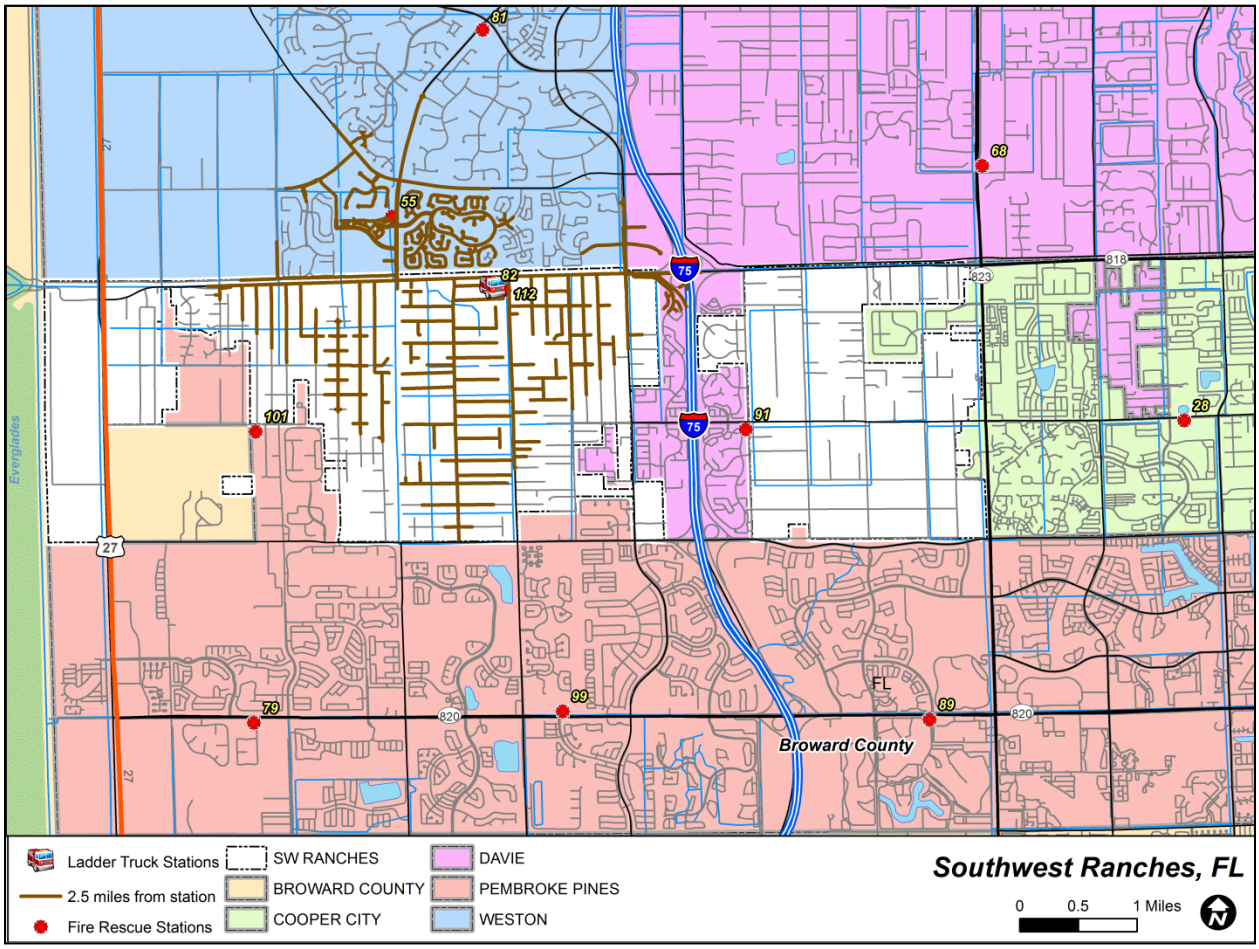
Figure 4.1
ISO ENGINE DISTANCE



From the stations that primarily serve Southwest Ranches, just fewer than 37% of the streets are covered within the recommended distance. The other stations near the Town and their effect upon distance criteria coverage will be discussed in a later section.

Figure 4.2 illustrates the 2.4-mile distance for a ladder truck from the stations that primarily serve the Town. Truck apparatus, with their long ladders, are able to reach higher buildings and larger square footage structures such as Lowes and other very large residential buildings in Southwest Ranches. Fire departments typically position them near an area that contains a number of such structures.

Figure 4.2
ISO LADDER DISTANCE



The lone ladder truck in Station 82 is able to provide 38% of roadway coverage according to ISO guidelines for truck apparatus. Once again, the other stations nearby the Town and their effect upon distance criteria coverage will be discussed in a later section.

Community Risk Criteria

Another way of approaching this issue is to define levels of land-use risk and assign a response-time requirement to each risk, rather than only using straight mileage response. These risks can be defined as follows:

1. Highest — Refineries, large industry, hospitals, school dormitories, lumber yards, and propane storage facilities without built-in suppression or detection systems;
2. High — High-rise hotels and residential buildings, large shopping centers, and industrial complexes;
3. Medium — Commercial and industrial facilities with sprinkler systems, small shopping centers, and high-density, medium density residential buildings;

4. Low — Lower density Single-family dwellings
5. Minimum — Wide separation of single family dwellings and farm land.

In the International Town Management Association's (ICMA) study on *Fire Station Location Analysis: A Comprehensive Approach*, the following data (Figure 4.3) on the response time requirements of some cities were provided in an article by Susan B. Benton and Neal B. Carpenter entitled, "A Computerized Approach to Fire Station Location."

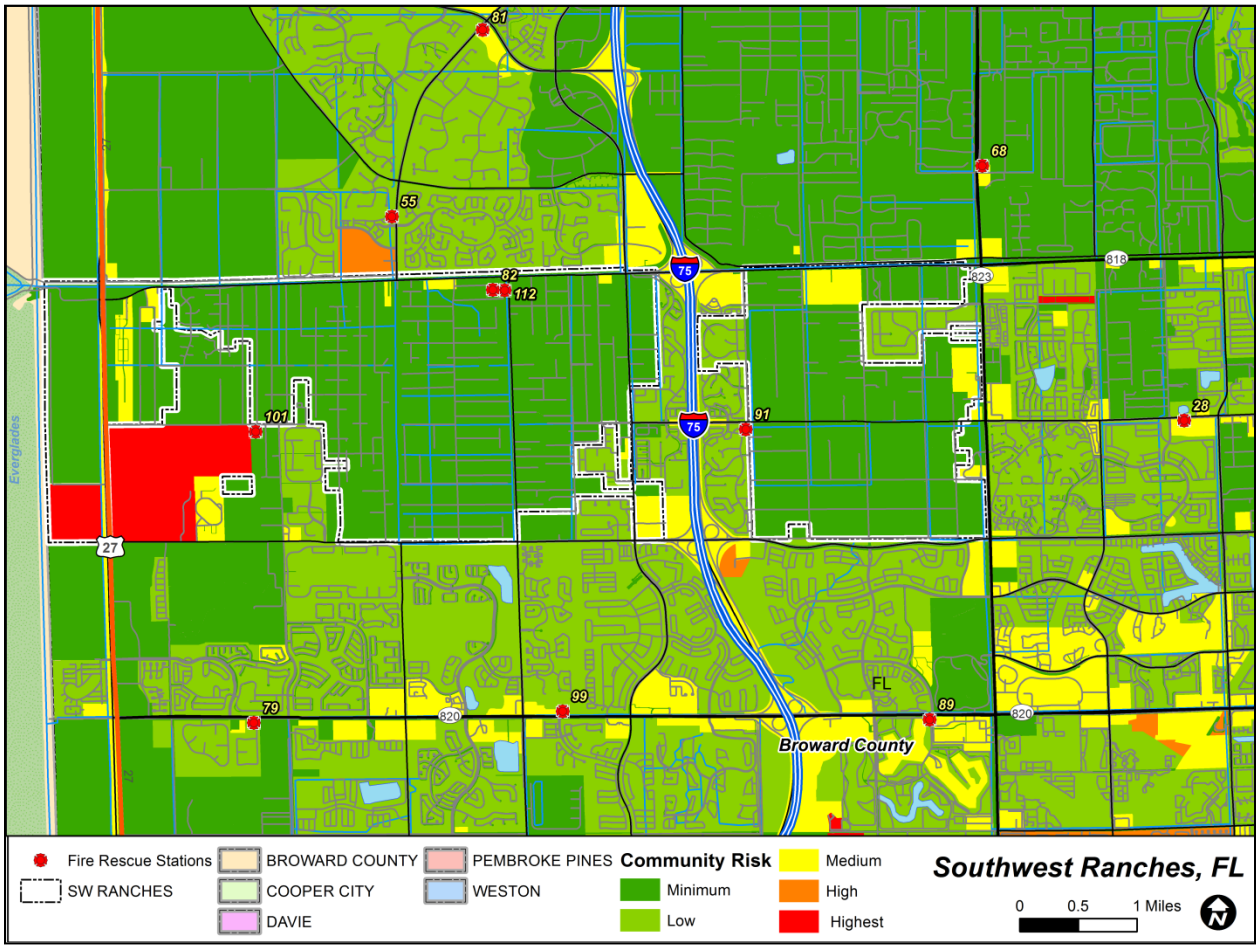
Figure 4.3
COMPARATIVE RESPONSE BY RISK

	Risk Category					
City	1	2	3	4	5	
San Antonio, TX	2.5	3	3.5	4	6	Minutes
Salt Lake City, UT	2.5	3	3.5	4	6	
Lynchburg, VA	3	4	5	6	7	
Memphis, TN	2.3	2.7	3.3	4.3	5.8	
Davenport, IA	3	3.5	4	4.5	5	

Some of these response time goals are conservative and the pattern of response is unrealistic given the scattered nature of land-use risk in most communities. Nonetheless, it is useful to examine Southwest Ranches' land-use risk relative to fire hazard in comparison to the fire station locations. In the following map (Figure 4.4), the Land Use classifications[2] were re-categorized generally into the five risk levels described above.

[2] Broward County Future Land Use GIS Data.

Figure 4.4
LAND-USE RISK



The majority of the Town of Southwest Ranches is classified as minimal risk according to the risk index. This is expected since the majority of the Town is ranch estates and rural in nature. Some higher risk areas along some bordering parcels of neighboring jurisdictions and near the interstate exits can be seen and may be an opportunity for mutual aid training and response.

Response-Time Capability Criteria

The response time of fire and EMS apparatus to the scene of an emergency incident is an essential determining factor as to the magnitude of the fire or medical emergency that the fire department must handle upon arrival. The theory is the shorter the response time, the smaller the fire that must be extinguished and the better opportunity for paramedics to save critical patients.

Time-related criteria for determining and evaluating fire station locations may be viewed from the perspective of two broad categories of types of incidents: (1) fire and (2) emergency medical service related incidents.

Fire-Related Response Time Considerations

In assessing response times to fires, one of the key factors to consider is the time from ignition to flashover. The instantaneous eruption into flames generates a tremendous amount of heat, smoke, and pressure with enough force to push beyond the room of origin through doors and windows. The combustion process then speeds up because there is an even greater amount of heat to move to unburned objects.

The time from ignition until water is applied to a fire should be no longer than the six to nine minutes it takes for flashover to occur with a free-burning fire. Flashover is defined as the instant burning of an explosive mixture of heated air, smoke, and gases that flashes through openings around the fire area, such as doors and windows. This does not include a smoldering fire, which can burn for hours before breaking out into the free-burning stage.

Flashover is a critical stage of fire growth for two reasons. First, no living thing in the room of origin will survive, so the chances of saving lives drop dramatically. Second, flashover causes a quantum jump in the rate of combustion, and a significantly greater amount of water is needed to cool the burning material below its ignition temperature. More firefighters are needed for fire attack and there exists the likelihood of reduced fire safety. Figure 4.5 is a summary of the significance of flashover in the process of fighting fire.

Figure 4.5
FLASHOVER COMPARISON

SIGNIFICANCE OF FLASHOVER	
Pre-Flashover	**Post-Flashover**
Limited to One Room	May Spread Beyond One Room
Requires Smaller Attack Lines	Requires Larger, More Attack Lines
Search & Rescue Is Easier	Compounds Search & Rescue
Initial Assignment Can Handle	Requires Additional Companies

Source: *Creating and Evaluating Standards of Response Coverage for Fire Departments, 3rd Edition,* Summer 2001, CFAI.

For these reasons, it is critical that fire suppression forces reach a fire as quickly as possible in order to initiate effective suppression efforts prior to flashover. **Travel time must be kept short enough to ensure that it does not exceed the six-to-nine-minute flashover requirement for a reported fire in a structure.**

EMS-Based Response Time Considerations

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 cardio-respiratory 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, strokes, and major traumas where time interval recommendations for emergency crews have been established by the American Heart and Stroke Associations and by trauma surgeons.

NFPA 1710 Standard

There are a number of applicable NFPA standards and practices that include response-time considerations important to labor and fire officials nationwide. NFPA 1710 (Standard for the Organization and Deployment of Fire Operations) response time-related provisions are described in the following sections.

NFPA 1710 is an industry standard that serves as a benchmark for the fire department organization and deployment of services offered by firefighters. It is the standard for paid/career fire departments that describes the requirements for delivery of services, response capabilities, incident management, and strategy.

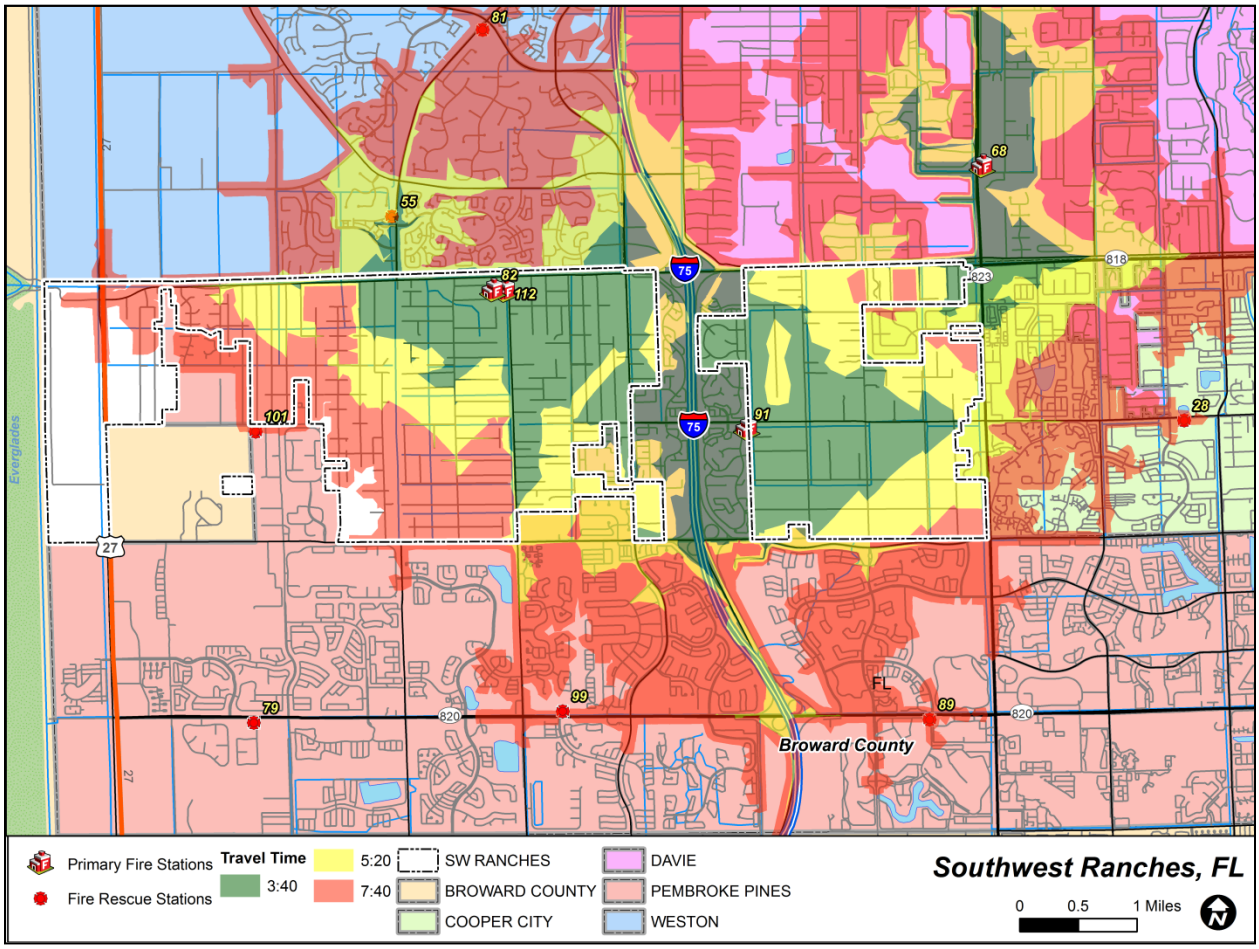
This Standard includes the following benchmarks related to call receipt and processing time, turnout time, and response (travel) time:

- Turnout time of 80 seconds on fire suppression calls and 60 seconds for EMS calls;
- The fire department's fire suppression resources deployed to provide for the arrival of an engine company within a four-minute travel time and/or the initial full alarm assignment within an eight-minute response time to 90% of the incidents;
- 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% of the incidents.

It should be noted that the various standards and criteria discussed in previous sections placed a high priority on both the effective delivery of fire and EMS service in the protection of life and property. Moreover, the safety of the firefighters and officers delivering the services and safety for the customer and stakeholder were important considerations to the development of these standards and to their application. Not all requests for services to the fire department ought to be construed as requiring apparatus to respond emergently or within the short-time constraints. These should be limited to the critical emergencies in which they were designed.

The following map (Figure 4.6) models the travel time of apparatus from each of the current fire stations. The model utilizes the street network of the Town and surrounding areas calculating the travel time extent via distance and speed capability of streets. Actual posted speed limits were utilized and time penalties were assessed for negotiating turns and intersections. This model assumes departure from the fire stations, which may not always be the case. It also does not take into account weather conditions, traffic congestion, construction, or detours. It does respect the one-way restrictions as they are in place.

Figure 4.6
TRAVEL TIME EXTENT



The model in Figure 4.6 represents the capability and geographic extent when responding to the most critical of incidents. Certain areas of Town will require slightly more time to reach than those areas are naturally closer to the existing fire stations. Forty percent of the roadway miles within Southwest Ranches can be reached within a four-minute response time, 74% in six minutes or less, and 26% within an eight-minute or less response time. It is estimated that 98% of the residential population can be reached within eight minutes or less, 73% in six minutes or less, and 34% in four minutes or less.

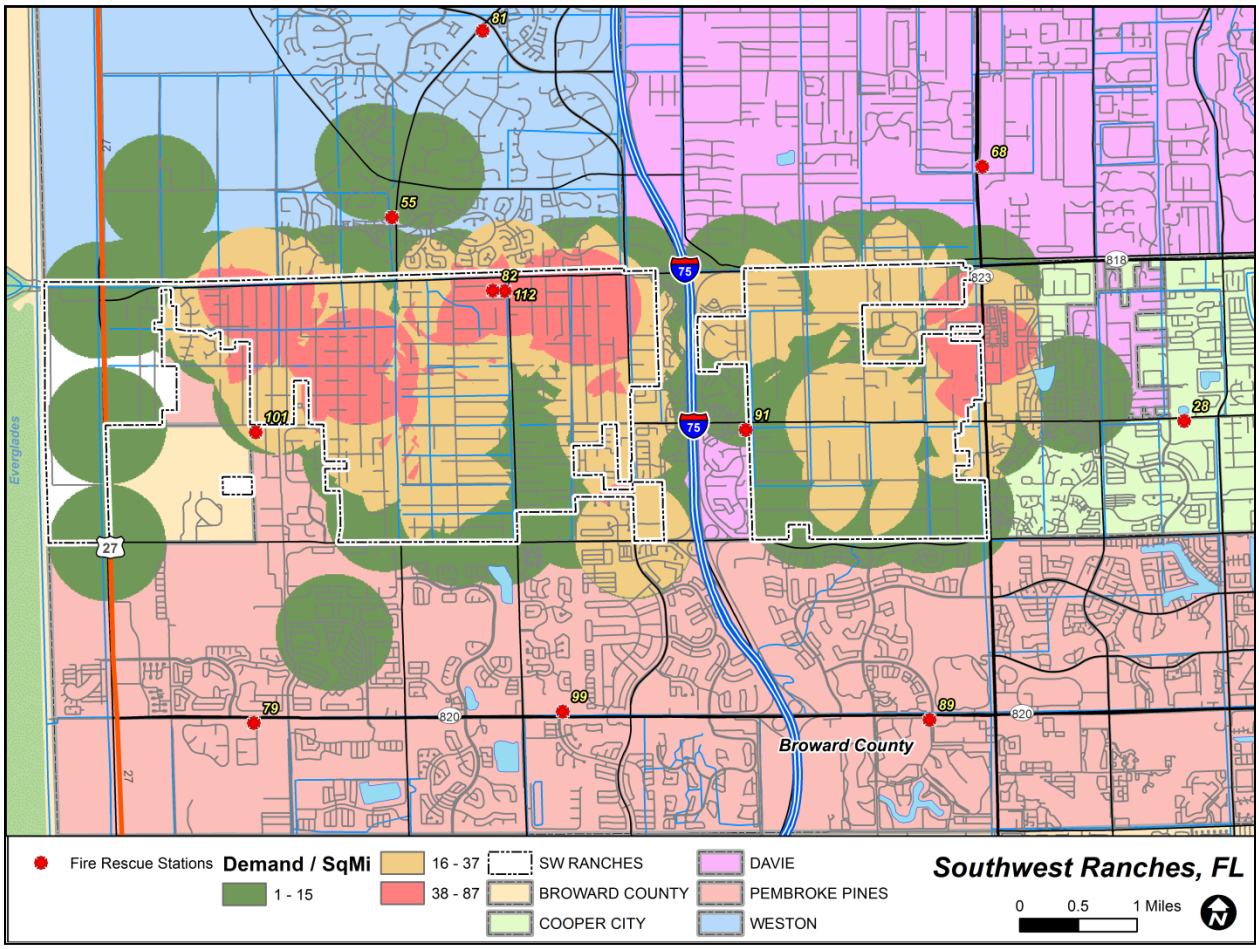
CURRENT SERVICE DEMAND ANALYSIS

Thanks to preventive programs, improved construction codes enforced, and sprinkler systems, actual fires are fortunately fewer than in decades past, but still remain a potential serious threat. The fire services agencies in Southwest Ranches typically respond to every perceived emergency outside of those involving the enforcement of law and civil order.

Demand for the services of the fire department ranges from medical incidents, to rescues, to trees down on wires, to calls for trapped people or animals, to name a few.

Typically, demand for service from the fire department is not distributed evenly within an area. There are areas where incident calls occur frequently and near each other, and there are other places where demand is less intense and the occurrence is further from each other. Service demand is typically higher in areas of higher population, not just residential but as offices and shopping centers fill with people, as well. Figure 4.7 illustrates the level of demand for services over the last year in Southwest Ranches.

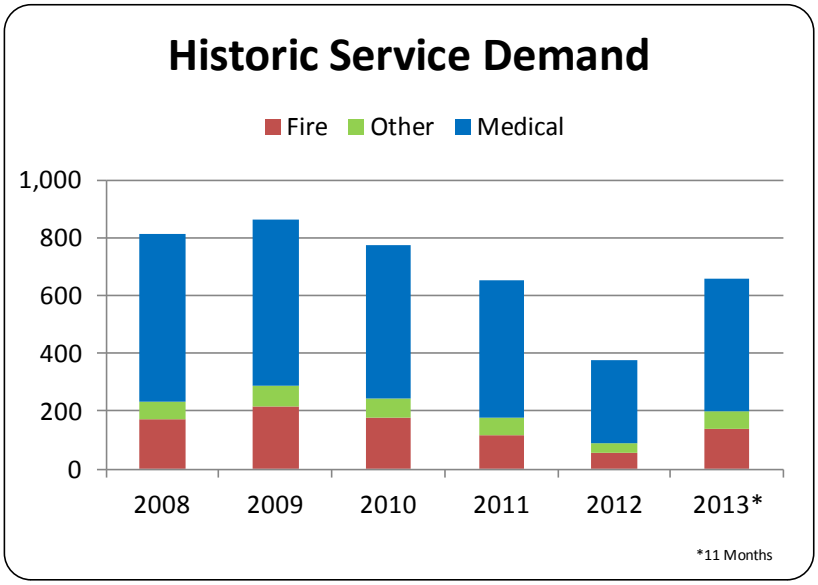
Figure 4.7
SERVICE DEMAND



When compared to modeled travel times from primary fire stations that serve the Town, nearly all incidents (99%) were reached within the longest travel time. This reduced to 41% of incidents for the shortest travel time modeled that represent a career level service response.

Records of incidents in the Town of Southwest Ranches were acquired from the computer-assisted dispatch (CAD) records of the Broward County Emergency Communications Center through the Sheriff's Department's Fire Rescue Division. The call types discussed in the following analysis are categorized as they were dispatched, not what may have been actually found upon arrival of fire personnel. For instance, someone may have reported a fire, but it was found to be a smoke condition due to burnt food. This disposition and reclassification reporting is the fire department's responsibility. Figure 4.8 illustrates the change in volume for categories of reported fire, medical, and all other categories of incidents (alarm, hazard, spill, etc.) over the past five years.

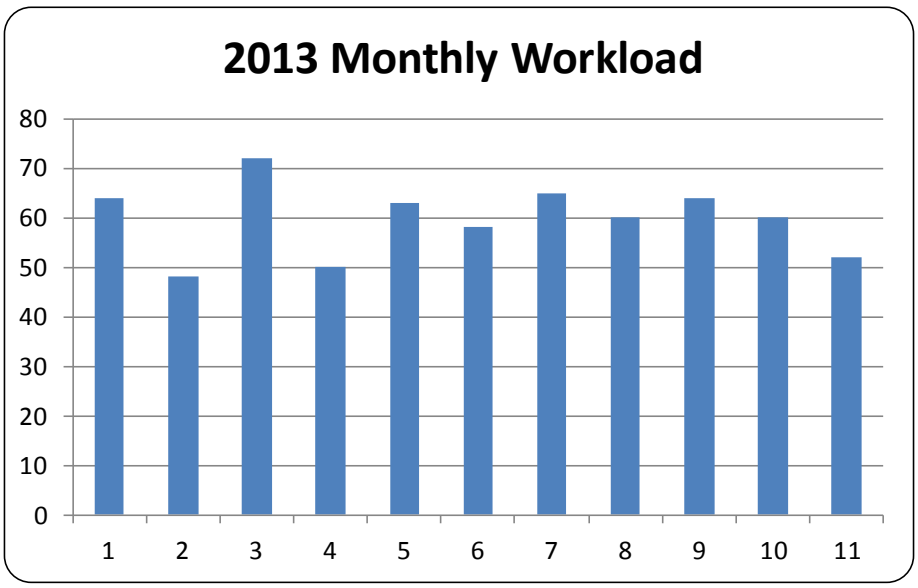
Figure 4.8
HISTORIC SERVICE DEMAND



It can be seen that medical calls account for about 70% of service demand within the Town of Southwest Ranches. Reported Fire calls are approximately 20%, while other types of service calls account for the remaining 10%. It is unusual for the demand for services to decline significantly without a significant loss in population as it had in 2011 and 2012.

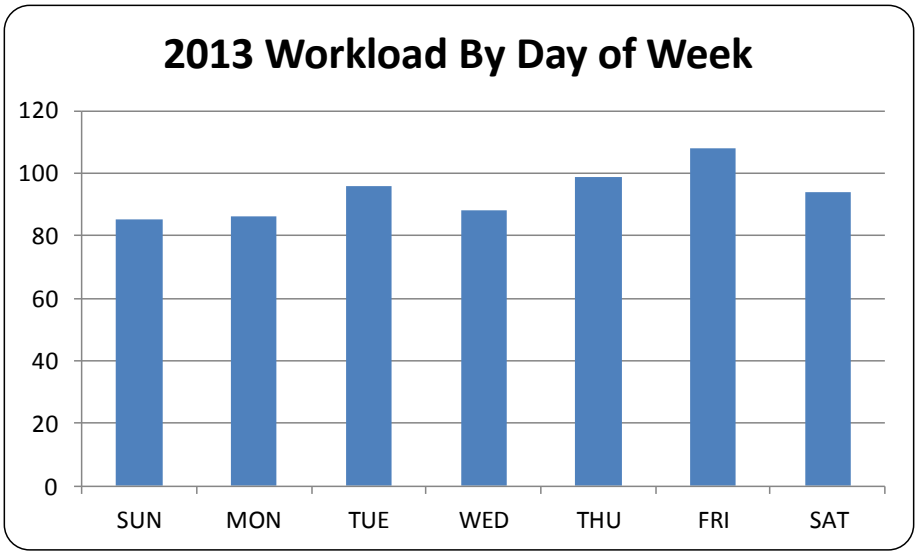
Examining the last year of data more closely, changes in demand can be seen on a monthly basis. Figure 4.9 illustrates that service demand averages about 60 calls per month or 2 per day. Service calls are especially higher in March, while calls are lower in February, April, and November.

Figure 4.9
WORKLOAD BY MONTH OF YEAR



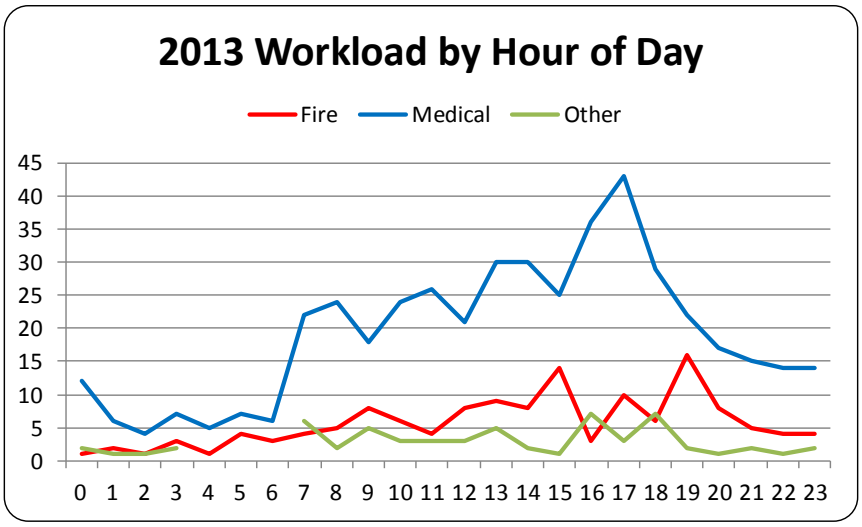
Examining the department service demand by the day of the week, Figure 4.10 shows that Thursdays and Fridays are the busiest days of the week calls for service in Southwest Ranches.

Figure 4.10
WORKLOAD BY DAY OF WEEK



Next, the workload is examined upon an hourly basis; it can be seen in Figure 4.11 that service demand increases with daytime human activity. Not surprisingly, EMS demand volume surges beginning at 7 AM and grows until after 4 PM when it steeply declines. Calls for fires begin to really ramp up after 2 PM after gradually rising since 8 AM. Two peaks in fire call volume can be seen at 3 PM and 7 PM. All other types of calls are highest in the late afternoon and early evening hours.

Figure 4.11
WORKLOAD BY HOUR OF DAY

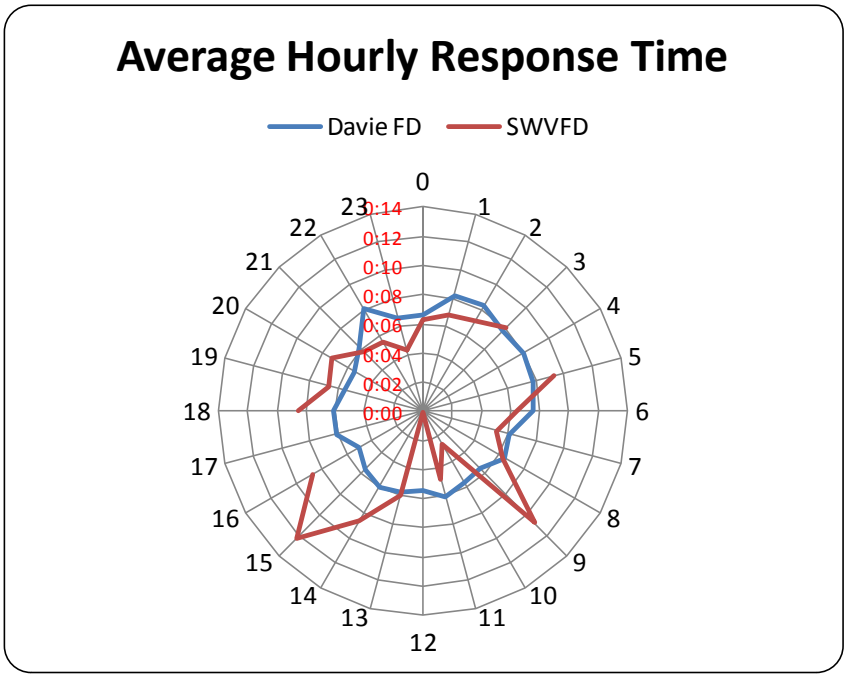


RESPONSE TIME ANALYSIS

The most important measure of performance of any emergency service provider especially to those they serve, is how fast does help arrive. Discussions of the reasons for and the specific parameters of the establishment of national response time guidelines from the NFPA have been outlined in an earlier subsection in this chapter. As a reminder, it is recommended that the first arriving apparatus to a fire alarm or a serious medical emergency arrive within five minutes of being dispatched 90% of the time. Subsequent apparatus are allowed additional time as also discussed previously. Figure 4.12 illustrates the response time performance for the first arriving fire apparatus using the CAD dataset.

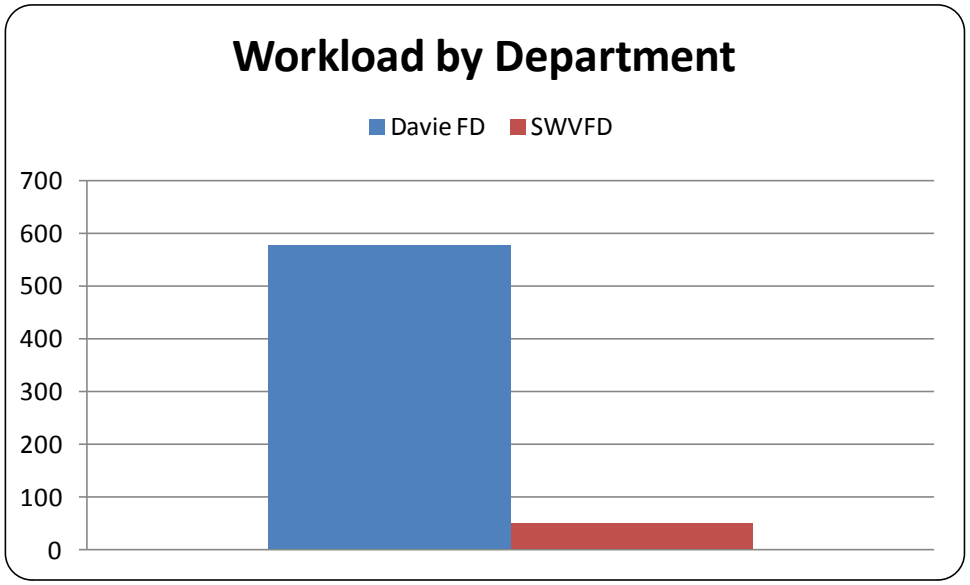
The average response time for first arriving units is six minutes and 34 seconds (0:06:34) minutes, while 90% of **all calls** were answered within nine minutes and forty-eight seconds (0:09:48) or less. Specifically, the Davie Fire Department (DFD) averaged six minutes and three seconds (0:06:03).

Figure 4.12
RESPONSE TIME PERFORMANCE



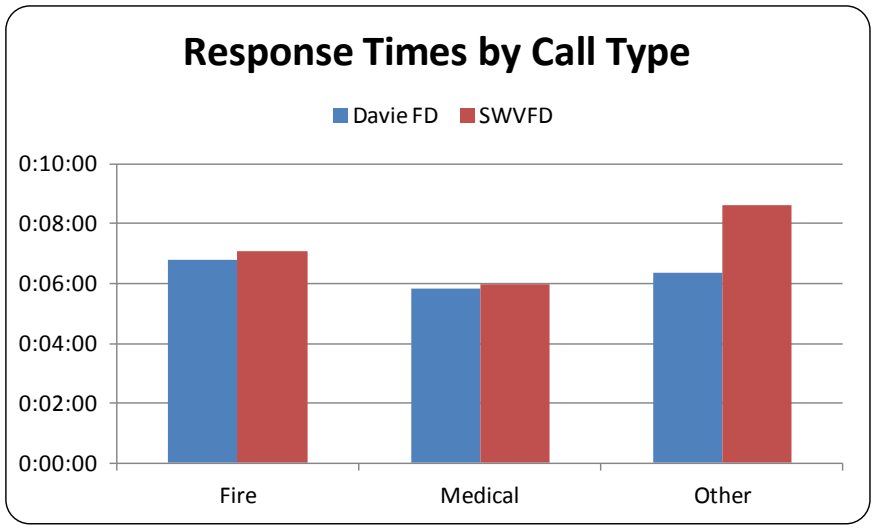
It can be seen in Figure 4.12 that the Davie Fire Department has an average response time of about four minutes during the daytime hours and longer during the overnight hours. The SRVFRDFD has a more erratic response time performance displayed due to the volume of data measured. As shown in Figure 4.13, it is clear that the Davie Fire Department is dispatched as the primary responder as listed in the dispatch record.

Figure 4.13
WORKLOAD BY DEPARTMENT



While the response time performance for all calls is longer than recommended benchmarks, it should be emphasized that these guidelines were established for the most serious and critical incidents. The fire department responds to a variety of calls, many of which do not necessarily require an absolutely urgent response. When response times are viewed by the call type dispatched, it can be seen that there is little difference between them. Considering that most of the calls are medical in nature, performance is just outside of recommended benchmarks (see Figure 4.14).

Figure 4.14
RESPONSE TIME BY CALL TYPE



FUTURE TRENDS

Part of the process in understanding the future trends facing the Town of Southwest Ranches is to obtain information regarding residential and commercial developments underway or proposed within the Town.

New Residential & Commercial Development

According to the Town's website:

"Southwest Ranches was formed to stop encroaching development, and 'Preserve Our Rural Lifestyle,' which includes donkeys braying, roosters crowing, and no sidewalks."

Therefore, it is not likely in the near term that any new major developments will be approved in the Town. The only new zoning designations are for open space preservation and for community facilities, such as recreation centers.

Population Projections

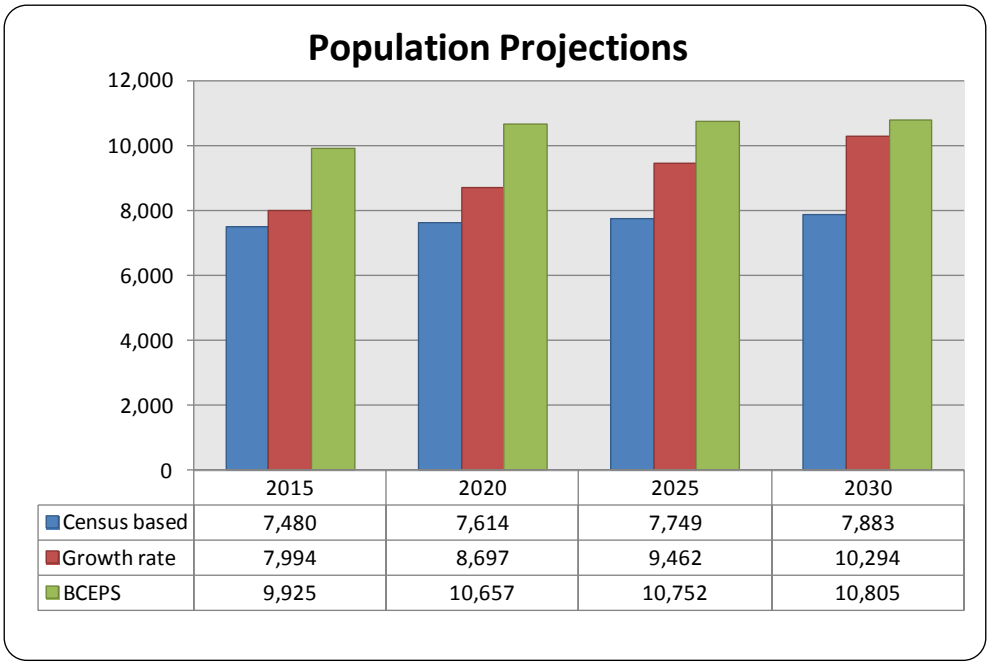
The population of the Town of Southwest Ranches has increased minimally over the past decade. Despite the Town's effort to encourage residential development, it is anticipated that additional population growth will continue into the future as the Town becomes more attractive to residents who desire less crowded environs. One method to project population growth is based on Census experience. For the Town of Southwest Ranches,

we used the estimated census figures from 2000 through 2010 to extrapolate figures through the year 2030.

However, this method can fail to account for expected trends in the growth rate of an area. These changes often result from redevelopment, changes in employment capacity, or other socio-economic factors not taken into consideration in a linear projection from historic rates. Because of this, local population projections from agencies with differing methodology are also reviewed.

For Southwest Ranches, information available from the Broward County Environmental & Planning Services Division indicates an expected population of 10,804 residents by 2030[3]. However, these projections over-estimated the 2010 official Census figure. Another methodology is to use the estimated annualized growth rate for the official and estimated figures and project them forward to the year 2030. The resulting population forecasts appear in Figure 4.15.

Figure 4.15
POPULATION PROJECTIONS



	2015	2020	2025	2030
Census based	7,480	7,614	7,749	7,883
Growth rate	7,994	8,697	9,462	10,294
BCEPS	9,925	10,657	10,752	10,805

[3] Broward County Environmental and Planning Services Division, "By the Numbers," Edition 41, March 2007.

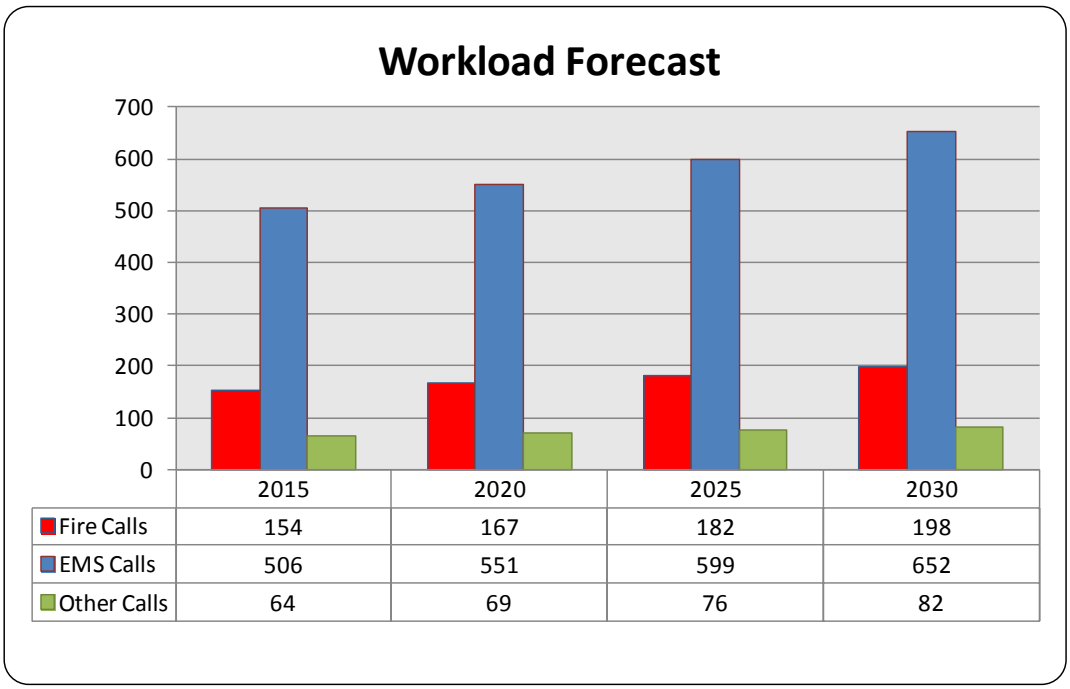
The growth rate population forecast is more conservative than the County population forecast, primarily due to local sentiment that is expected to persist in restraining population growth for the Town. While these projections are not the definitive authority of future population within the Town, they provide a way to base recommendations for future fire protection and emergency medical needs with expected service demand.

Workload Projections

In evaluating the deployment of facilities, resources, and staffing, it is imperative that potential changes in workload, which could directly affect such deployment, be examined in order to maintain acceptable levels of performance.

For purposes of this study, population projections from the growth rate projection was multiplied to an average of the forecasted incident rate calculated from a five-year history of incidents per capita to estimate workload through the year 2030. The result of the analysis is shown in Figure 4.16.

Figure 4.16
ESTIMATED FUTURE WORKLOAD



	2015	2020	2025	2030
Fire Calls	154	167	182	198
EMS Calls	506	551	599	652
Other Calls	64	69	76	82

Because of the projected increase in population, incident types can be expected to rise as more people call for more services within the Town.

RESOURCE DEPLOYMENT MODELS

This section discusses the current deployment model and various other models aimed at improving the deployment of fire and rescue resources within the Town of Southwest Ranches.

Current Deployment Model

Three issues exist regarding the current resource deployment model.

1. The volunteer department (Station 82) shares the station (112) with the contracted provider. This can provide redundant coverage over the same area when all crews are available.
2. While the Town of Davie also operates from Station 68 and Station 91, this provides coverage within the eastern part of the town while the southwestern town remains outside of coverage area.
3. The response time performance is slightly longer than the national guidelines suggest and this is, in part, due to resource deployment locations.

Standalone Fire Rescue Services Model

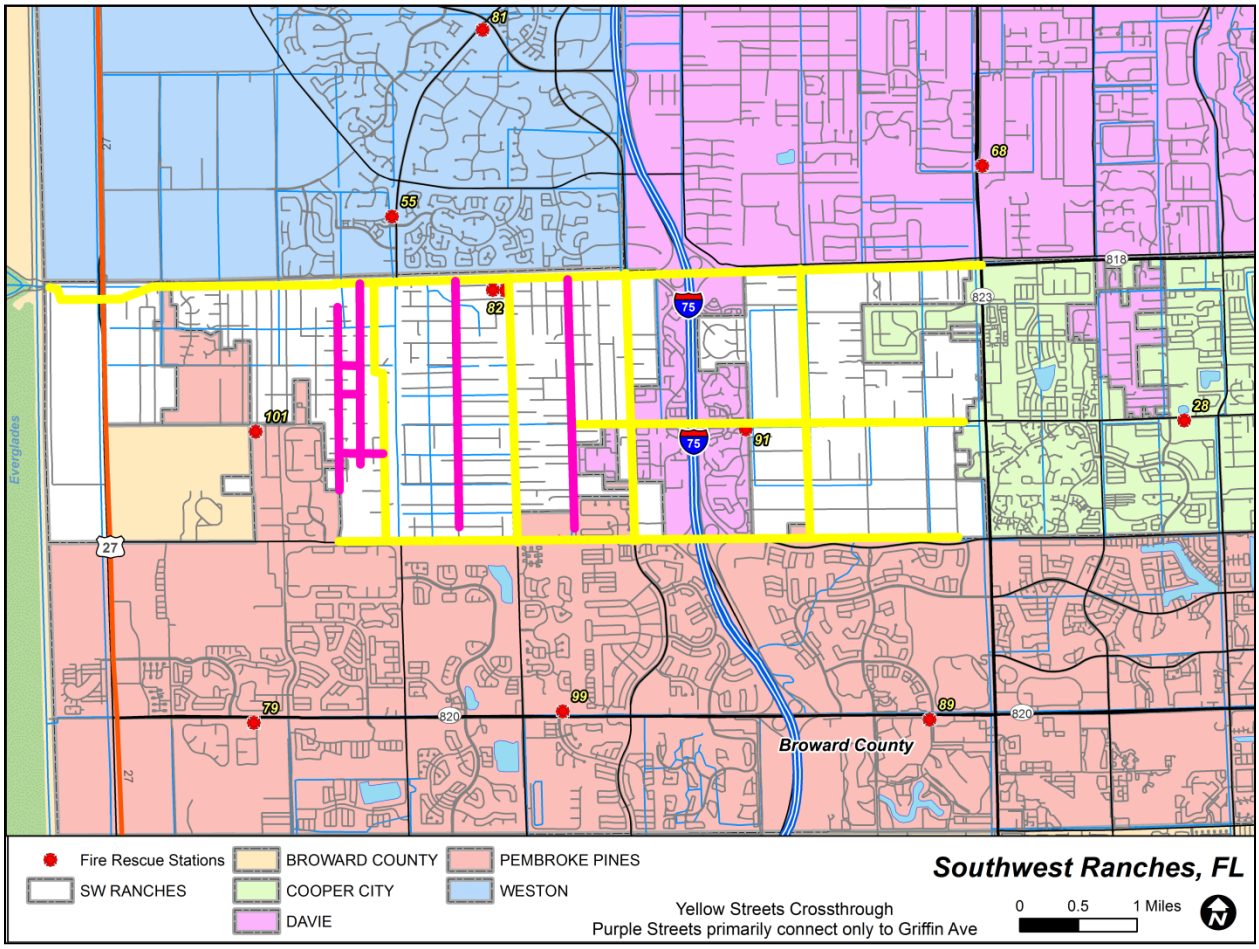
This model would eliminate the primary services from the Town of Davie and, therefore, Stations 68 and 91, unless automatic closest available dispatch is maintained. Such a loss in coverage would hinder response times from a single location and reduce the ISO distance coverage, potentially increasing insurance premiums for property owners. Additional stations would need to be built to replace coverage lost by Davie Fire Rescue and potentially improve the response coverage in the town based upon national guidelines for career departments. If cohabitation in Station 91 is not possible, then a station in the center of the eastern section near the corner of Stirling Road and SW 136th Avenue, just a mile away, may be necessary. Station 82 would remain, due to its advantageous placement near Griffin Road with quick access to the many roads that only connect off it. Still, another station would be necessary to improve demand coverage and reduce response times. This is not a recommended model due to the overall costs involved in building new stations, buying apparatus, hiring personnel, and administration.

Maintain Contractual Services Model

Scenarios with Current Transportation Infrastructure

An additional station for the volunteer department would minimize the redundant coverage and would optimize the results of ISO distance measure, as well as travel time demand coverage. One of the more challenging aspects of selecting a fire station location, especially in south Florida, is necessary drainage canals and the proliferation of cul-de-sac neighborhoods. These two factors account for the lack of street connectivity in Southwest Ranches (see Figure 4.17). There are few major crossroads in Town and most of them are at the edges of town limits. For example, Griffin Road traverses east-west across Town, but only at the northern edge. Similar edge cross streets are found with State Highway 27, Sheridan Street, and, for the most part, SW 160th Avenue. While canals can be bridged, cul-de-sac neighborhoods are desirable to residents and connecting them to other roadways is often met with citizen resistance. In Southwest Ranches, several canals would require bridging and subsequent roadwork would be necessary to connect multiple neighborhoods. For instance, the streets off of SW 178th Ave do not interconnect with SW 172nd Avenue or SW 184th Way, practically isolating the neighborhoods except at Griffin Road near the existing Station 82/112.

Figure 4.17
CROSS STREETS IN SOUTHWEST RANCHES



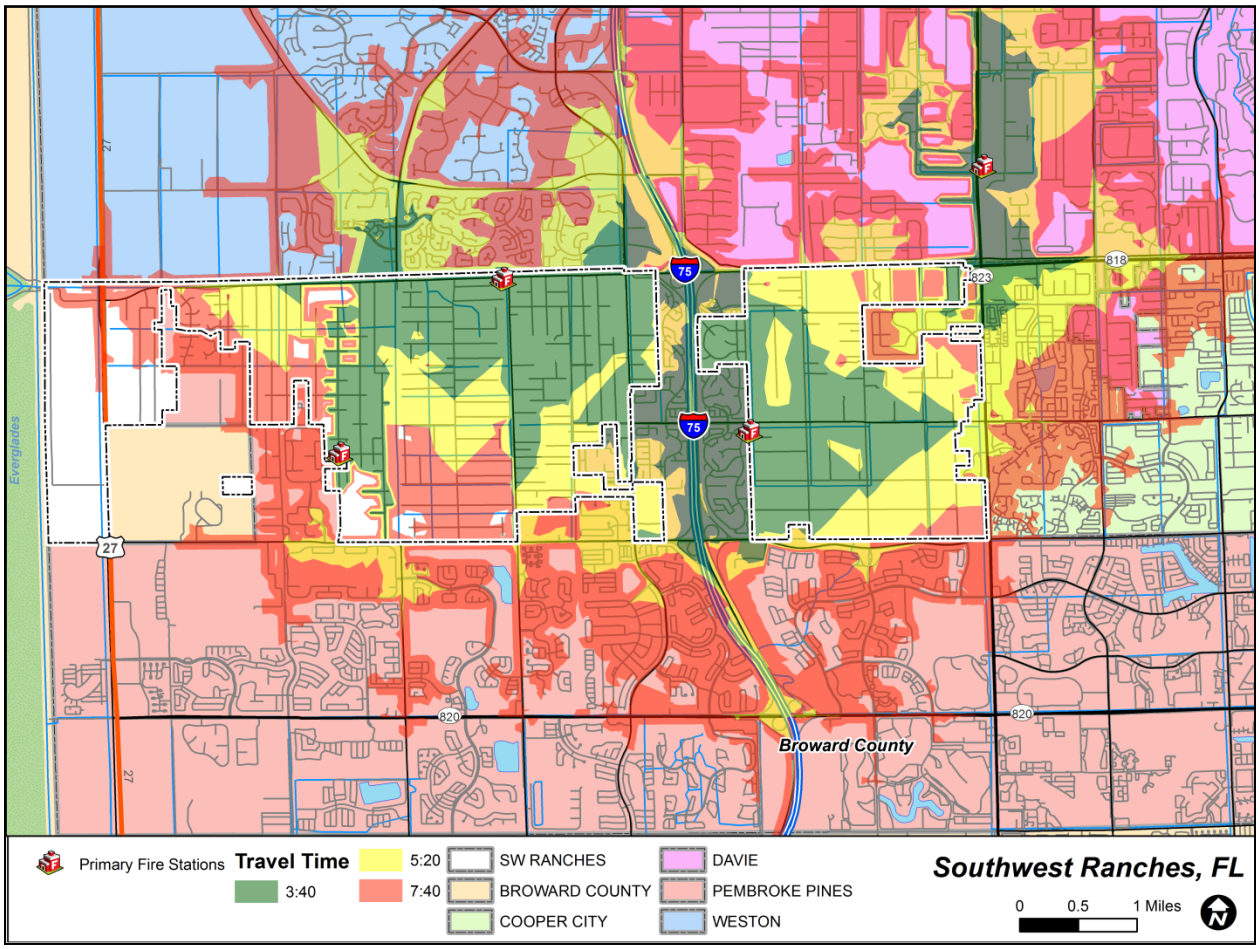
The town of Southwest Ranches, therefore, appears to be bisected into three parts: (1) the nearly four-square-mile area east of Interstate 74; (2) the area just west of Interstate 74 extending to SW 184th Way; and (3) the remainder west to the Everglades.

Adding transportation infrastructure would significantly inflate the overall costs of a new station and would also be difficult to implement given the potential lack of available/ acquirable property. Consequential citizen backlash of the industrial property with loud apparatus may result should new stations be sought in certain neighborhoods.

Given this, several locations were analyzed as to travel-time demand coverage and ISO distance measure improvement. Two of the better resulting locations are presented here for comparison as Scenario A and Scenario B. Scenario A (Figure 4.18) places the station

near the intersection of SW 190th Ave. and SW 63rd St. with corresponding modeled travel time capability.

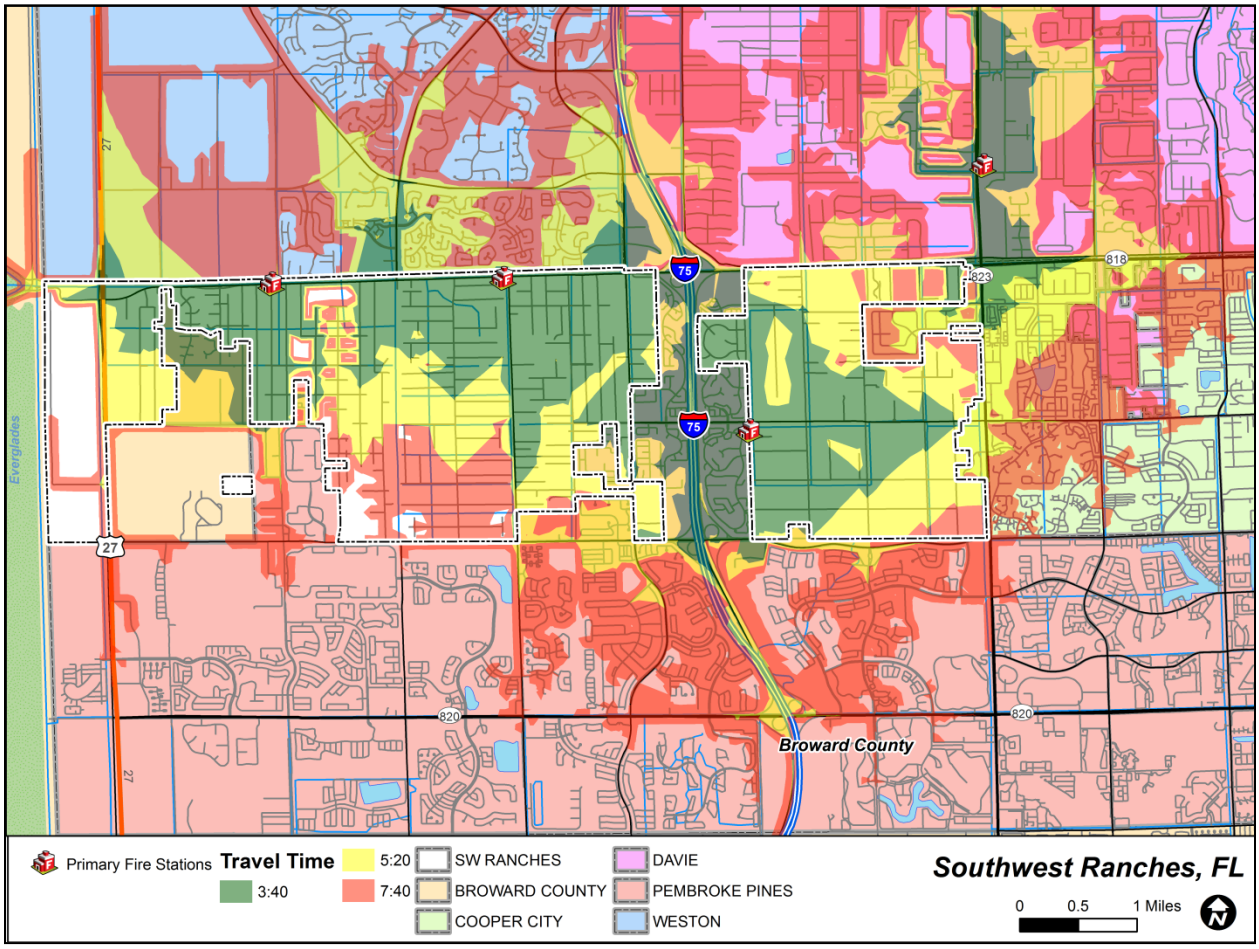
Figure 4.18
SCENARIO A — PRIMARY FIRE STATION LOCATIONS
WITH CURRENT TRANSPORTATION INFRASTRUCTURE



This location improves the shortest travel-time demand coverage from an existing 41% to 61%. This location allows for crews to provide services north and access to SW 188th Ave. and SW 184th Ave. connecting to the neighborhoods that intersect each of them.

Scenario B provides the second alternate location for an additional station near the intersection of Griffin Road and SW 194th Ave. (Figure 4.19). This allows for coverage on the west side and utilizes the main thoroughfare of Griffin Road to connect to the many roads intersecting it.

Figure 4.19
SCENARIO B — PRIMARY FIRE STATION LOCATIONS
WITH CURRENT TRANSPORTATION INFRASTRUCTURE



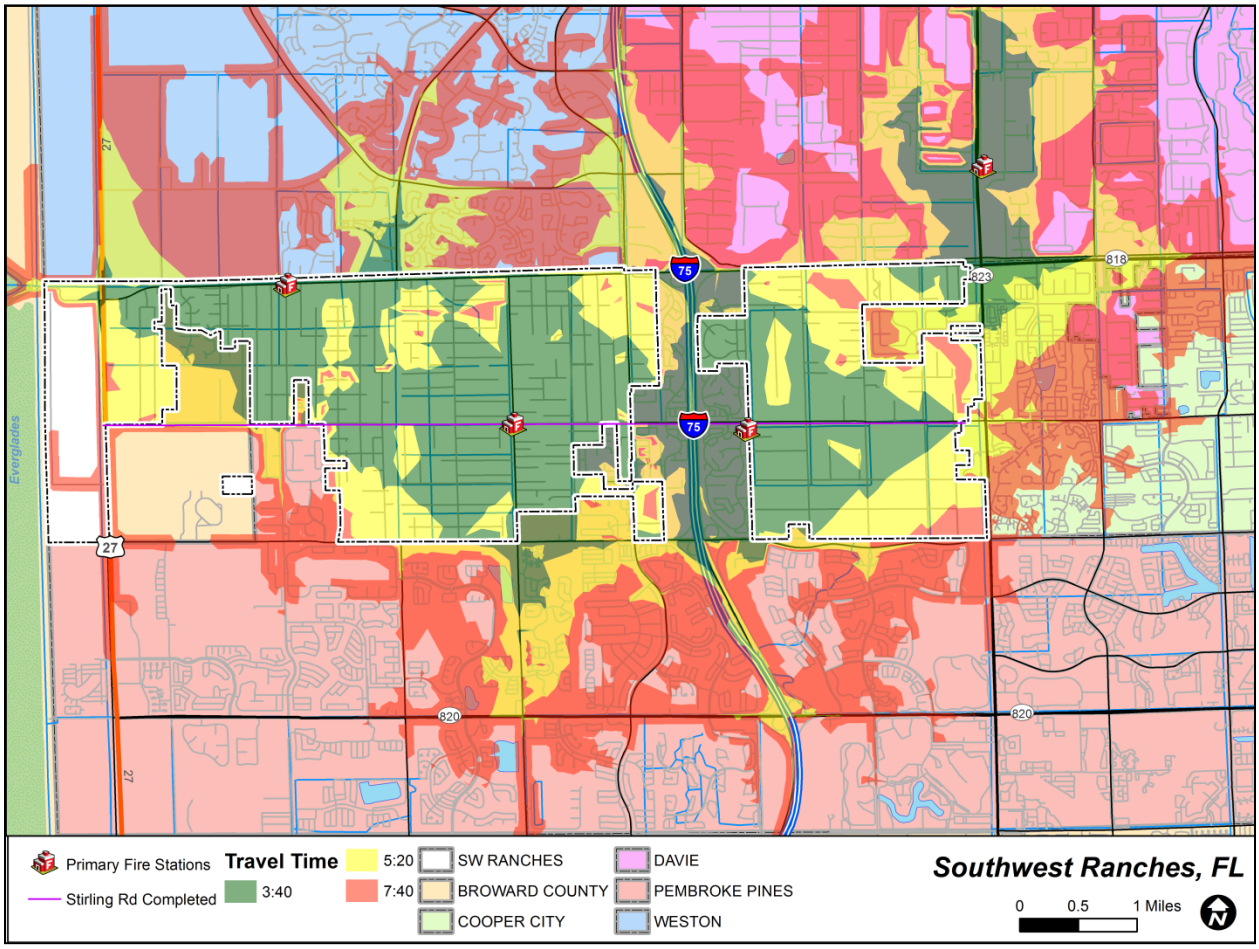
This additional station improves the travel time demand coverage to 68% and the ISO Distance measure from 37% of the Town's roadways to 48%.

Scenarios with Improved Transportation Infrastructure

There is a scenario in which a disconnected road, specifically Stirling Road / SW 60th St., is aligned and could be connected to add a thoroughfare across the center of the Town east to west. This would improve connectivity to current neighborhoods that are primarily reached via Griffin Road. As a main connector route, its (Griffin Road) speed along the corridor ought to be 34 mph. This now provides an opportunity to place a fire station along major axis routes to provide better coverage in Town. The best location found was to be at the intersection of SW 172nd Ave and the new Stirling Road. This fire station

would replace the current station 82/112 near Griffin Road on the northern side of town. While this does not eliminate the need for another new station to improve travel time demand coverage, it does increase the coverage percentiles. Without the new station identified in Figure 4.19, this scenario's coverage percentiles were not much better than the current deployment model. Figure 4.20 illustrates the locations and travel time capability of primary fire stations in this scenario.

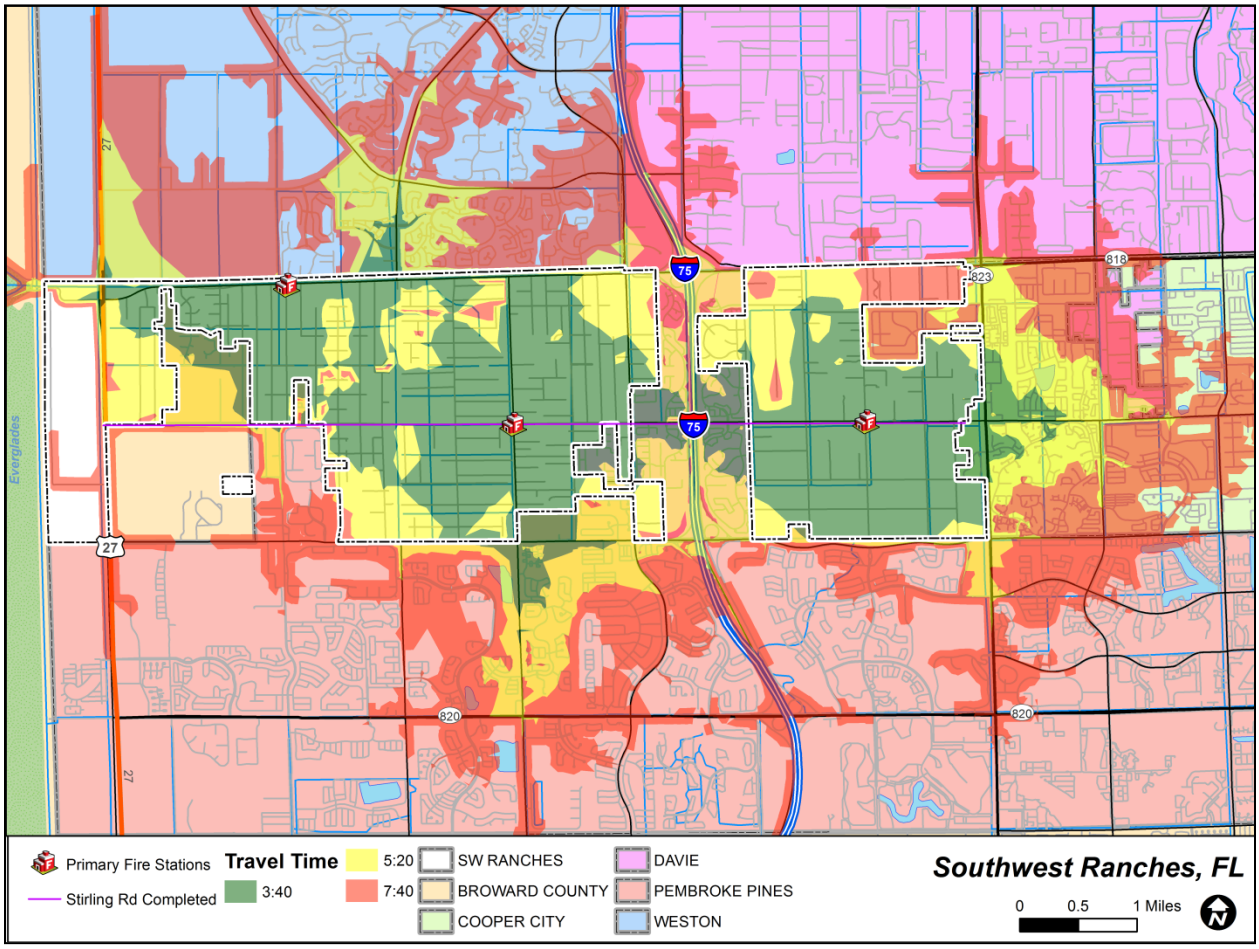
Figure 4.20
SCENARIO C — PRIMARY FIRE STATION LOCATIONS
WITH IMPROVED TRANSPORTATION INFRASTRUCTURE



With the deployment plan, the shortest travel time demand coverage increases to 73% and nearly all demand is reached within the next time interval. The ISO distance coverage increases to 46% versus 37% currently. With the ladder truck in the new station near Stirling Road, the ISO truck distance coverage also increases to 41% versus 38% from the current station 82/112.

With improved connectivity due to the Stirling Road extensions and, as a matter of completeness, a standalone department scenario is examined despite the potential high cost of establishment. This builds on the Scenario C, but without Davie Fire Rescue's (DFR) services from Station 91, a new station in the center of the eastern section of town is analyzed. Figure 4.21 illustrates the proposed fire station locations in for this scenario and the travel time coverage capability.

Figure 4.21
SCENARIO D — PRIMARY FIRE STATION LOCATIONS
WITH IMPROVED TRANSPORTATION INFRASTRUCTURE



While the ISO distance coverage is improved, the travel time demand coverage is found to be less than the previous scenario and similar to Scenario A (Figure 4.18). Figure 4.22 summarizes the coverage for the varying scenarios.

Figure 4.22
MODEL COVERAGE STATISTICS

	Travel Time Demand Coverage			ISO Mileage Coverage	
	3:40	5:20	7:40	1.5 miles Engine	2.5 mile Truck
Current Deployment Plan	51%	81%	98%	37%	38%
Station 82 Only	29%	51%	84%	25%	38%
Scenario A - DFR, Stn. 82 & Griffin Rd / SW 195 Ave	68%	95%	100%	48%	38%
Scenario B - DFR, Stn. 82 & SW 190th Ave / SW 63rd St	61%	87%	98%	43%	38%
Scenario C - DFR & 2 New Stations	73%	99%	100%	56%	51%
Scenario D - 3 New Stations (No DFR)	69%	96%	100%	62%	51%

The ISO Truck Distance coverage remains unchanged in Scenarios A and B as the ladder truck was not reassigned to a different station. In Scenario C and D, the ladder truck is located in the new station near Stirling Road and SW 172nd Ave.

CONDITION OF CURRENT FIRE STATION FACILITIES

The current Town-provided facilities are trailer designed mobile home RV park type facilities with unenclosed open canopy garage area. The facilities meet only the most basic needs of the six or more firefighters and officers assigned to live and work there on a 24-hour basis. In addition, the facilities are not Category Five hurricane certified and do not provide the proper security for the multi-million dollar fire and EMS apparatus located there.

For the following reasons, a high priority should be placed on providing a more appropriate, properly located fire station facility:

- The structures do not provide security for the personnel or fire and EMS apparatus;
- The trailers are not rated or otherwise designed for hurricanes, so personnel must be moved to fire station rated buildings out of Town with no personnel or apparatus left in the Town during such storms;
- Weather is damaging the fire apparatus paint, parts, and tires;
- The trailers serving as quarters are aging and in constant need of repair;
- The two trailers are inadequate in size;
- There is no training area; and,
- There is limited space for storage of equipment and supplies.

The Town should place a high priority on the provision of one or more appropriate facilities to support the fire and EMS personnel and apparatus needs.

FISCAL IMPACT

This chapter provides options and recommendations for the construction of a fire station to replace the current inadequate facility/s. Also, an optional second fire station is presented for use by either the SRVFRDFD to make better use of current apparatus and staffing resources or for a possible future second contract fire station, as determined appropriate by the Town Council.

As to the size of the potential new fire station/s, it is suggested that the first station built to replace the current facilities be approximately 12,000 square feet in order to support both typical fire station operations for engine, rescue and other apparatus (quick attack and/or brush unit) and Fire Department administration (SRVFRDFD and/or contract). A second fire station could be approximately 8,000 square feet to serve as a sub-station. The general location of the station/s should be as optionally outlined in this chapter.

In considering the possible cost for one or two fire stations the Study Team researched recent actual and estimated fire station construction cost per square foot in the Broward County area and State of Florida. As would be expected the cost per square foot varied considerably for many reasons including building size, design, and other factors. The information gathered by the Study Team indicated that a reasonable projected construction cost for a fire station facility would be at least $325 per square foot.

Using the $325-per-square-foot cost estimate, the projected cost for a new 12,000-square-foot headquarters fire station would be $3,900,000 and a fire sub-station of 8,000 square feet would be $2,600,000. Caution should be used in considering these estimated fire station construction costs. In determining potential costs for new fire station facilities, the following should be considered:

1. Basic construction approach to be taken;
2. Special features such as hurricane hardening and possible green construction;
3. Site preparation needs;
4. Size of facilities;
5. Professional services;
6. Permits and approvals;
7. Utility connection fees;
8. Off-site improvements (sidewalks, traffic lights, street lights);

9. Furniture;
10. Equipment;
11. State and County fees;
12. Contingencies;
13. Bid climate; and,
14. 24-hour nature of the facility.

OPTIONS AND RECOMMENDATIONS

4-1 The Town should take action to assure that actual address locations are input into the dispatch record to facilitate that future analysis completion with less difficulty.

4-2 The Town should consider an additional fire station in order to improve travel time and ISO distance coverage

4-3 With the current co-located contract and Southwest Ranches Volunteer Fire-Rescue Department fire and EMS apparatus and staffing, the Town should consider separating the resources of the two fire departments to improve both utilization and delivery of services through reduced response times.

CHAPTER FIVE
FIRE SERVICES APPARATUS

An important part of any fire department's business is the selection and purchase of fire department apparatus and equipment … it is usually second to salaries and benefits.

Foremost, the selection and purchase process must be based on community needs. Careful research and planning are crucial to meeting these needs. Fire apparatus and equipment are very specialized and technical in their nature.

Fire departments must be knowledgeable regarding 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 several factors. One of the most important factors 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." Another factor is how the apparatus or equipment fits in with the previous purchases.

In addition, the fire department must provide training on the proper use of all its apparatus and equipment, and it must also provide maintenance for the item purchased as described by the manufacturer.[1]

COMMISSION ON FIRE ACCREDITATION INTERNATIONAL (CFAI)

The Commission on Fire Accreditation International (CFAI) emphasizes the role fire, EMS, and support apparatus and vehicle acquisition and maintenance plays 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] Tutterow, Robert, *Fire Protection Handbook, Fire Department Apparatus and Equipment*, 2008, National Fire Protection Association.

Criterion 6B: Apparatus and Vehicles
Apparatus resources 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, staffs 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 applicable Criteria and Performance Indicators will be addressed in the body of the chapter and specifically in the chapter summary.

CURRENT APPARATUS AND VEHICLE INVENTORY

The primary Southwest Ranches Volunteer Fire-Rescue Department vehicle inventory, provided by the Town, is comprised of two pumpers (one of which is a parade unit), a mini-attach pumper, and a brush unit.

Engine 82

Attack 82

Brush 82

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. Although limited in number in the SRVFRDFD fleet, apparatus manufactured prior to 1991 usually included only a few of the safety upgrades required by the recent editions of the NFPA 1901, *Standard for Automotive Fire Apparatus*.

Based on these safety upgrade improvements, fire departments should seriously consider the risk to firefighters of keeping fire apparatus older than 15 years in first-line service. The current edition of the *NFPA Handbook* states, however, "In general, a 10- to 15-year life expectancy is considered normal for first-line pumping engines. In some types of service, including areas of high fire frequency, a limit of only 10 years may be reasonable for first-line pumpers."

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), and the Fire Apparatus Manufacturer's Association (FAMA).

FAMA developed the "Fire Apparatus Duty Cycle White Paper" in 2004. 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 know 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 ten 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 cost are exceeding the resale value
- Parts are obsolete
- Does not meet all NFPA 1901 and 1911 safety standards

Average Apparatus Service Life

Numerous resources are available as a guide for the average active and reserve life of emergency vehicles. The FAMA "Fire Apparatus Duty Cycle White Paper" (2004) provides the following:

Average Expected Years of Apparatus in Active Service

	Urban	Suburban	Rural
Pumper	15	16	18*

Average Expected Years of Apparatus in Reserve Service

	Urban	Suburban	Rural
Pumper	10	11	14

Average Expected Years of Service Life (Active Reserve*)

	Urban	Suburban	Rural
Pumper	25	27	32

*Review NFPA Requirements

The Fire Apparatus Manufacturers Association suggests that the active service life of an urban pumper is 15 years. Active pumpers in serviceable condition could move to reserve status, as needed, when reaching their rural (18 years) life span. For purposes of this Study, the Southwest Ranches Volunteer Fire-Rescue Department first-response district is considered a rural area.

Applying the Fire Apparatus Manufacturers Association's formula to Southwest Ranches Volunteer Fire-Rescue Department's pumper trucks suggests the average expected years of active service to be 18*.

The Henrico (VA) Fire Department recently implemented a different rationale for the determination of the replacement of fire department vehicles.[2] The rationale involves the comparison of the life-to-date maintenance costs to the original vehicle acquisition costs. Their 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.

It appears Southwest Ranches Volunteer Fire-Rescue Department has the data capability to initiate the retention of all maintenance cost for the life of fire department vehicles to determine M:A ratios. Policymakers could determine the M:A percentage benchmarks for movement to reserve status or replacement.

These sample replacement schedules are illustrations of the apparatus capital planning considerations required of every fire department.

Southwest Ranches Apparatus Replacement

The current apparatus fleet is aging. The 1995 Pierce 1250 GPM pumper is approaching 20 years of active service and should be replaced, if the Town determines to continue to provide some form of its own fire protection.

[2] McDowell, Tony, "No More Guess Work," *Fire Chief Magazine*, October 2012.
*Review NFPA Requirements

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.

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 N.F.PA., 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus,* will provide the department 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 unprecedented. Recent emergency response vehicle accidents 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 are recipes for disaster. Any of these issues may lead to unsafe vehicles, increased maintenance costs, and reduced apparatus life.

Along with these negatives 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, as well as an invitation for lawsuits.

The heartache of a line of duty death (LODD) is followed by board of inquiries, legal investigations and National Institute of Occupational Safety and Health (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, and 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 pumper 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.[3]

On-duty firefighter crews provide the daily checks of the Department's vehicles, tools, appliances and equipment at shift change under their respective company officers.

TOOLS, APPLIANCES AND EQUIPMENT ACQUISTION & 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.

SRVFRDFD should confirm that all automotive fire apparatus meet the NFPA 1901 equipment inventory requirement.

Maintenance of the Department's tools, appliances and small equipment is initially accomplished by the on-duty firefighters as supervised by their company officers. Routine maintenance needs are usually determine during daily apparatus and equipment checks and/or when returning from incidents.

Fire apparatus is an emergency vehicle that 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.

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

[3] IAFC, White Paper, *Apparatus Maintenance*

OPTIONS AND RECOMMENDATIONS

5-1 The Town and Fire Chief should conduct an analysis of its current standard operating procedures as they relate to apparatus and equipment acquisition, maintenance and associated safety considerations, as soon as practical

5-2 The Town and Fire Chief should develop and implement formal, optimal replacement cycle policies for each of the key types of apparatus in the fleet (pumper/s, utility, and car/s) using a recognized life-cycle cost analysis technique.

5-3 The 1995 Pierce 1250 GPM pumper is approaching 20 years of active service and should be replaced, if the Town determines to continue providing a form of its own fire protection

5-4 The Fire Chief should confirm all automotive fire apparatus equipment inventory is in compliance with NFPA 1901, *Standard for Automotive Fire Apparatus*.

CHAPTER SIX
SOUTHWEST RANCHES FIRE AND EMS DEPARTMENT

This chapter provides a description of a possible stand-alone, full-service, all-paid, Southwest Ranches Fire and EMS Department (SRFED). All primary aspects of the Town having its own fire and EMS department are addressed in this chapter.

As outlined in the Scope of Work for this Study and listed in the Introduction to this Study Report, the following is the requirement addressed by this chapter:

> "Establishing a stand-alone Fire Department, eliminating outside contractor reliance. This evaluation will include a summary of the infrastructure and equipment needs, staffing requirements, administration, and training needs in a proposed timeline consistent with current contractual status and all projected costs." (Underlining added)

GENERAL DESCRIPTION

This model would be the Southwest Ranches Fire and EMS Department (SRFED).

Characteristics of a Standalone SRFED

As outlined in this chapter, the characteristics of a standalone SRFED would be a full-service fire and emergency medical services delivery agency including the following characteristics:

- Commanded and administered by a full-time uniformed fire chief;
- A uniformed chain of command that includes chief, battalion chiefs, captains, lieutenants, paramedics, and firefighters;
- Captains could serve as program managers (training, EMS, or prevention) or station commanders (one per station) serving also as engine unit officers;
- Administrative support for accounting, human resources, labor relations, purchasing, and other similar services provided by a civilian;
- Fire prevention activities headed by a uniformed captain;
- Fire training programs supervised and coordinated by a uniformed captain;
- EMS quality assurance and EMS training programs managed by a uniformed captain;

- Medical direction provided by a qualified physician;
- Secretarial support provided by a civilian staff member;
- Incident and shift command provided by battalion chiefs 24-7;
- Engine companies commanded by unit commanders, captains, and lieutenants;
- Incident response provided from two fire stations—Station 82 and Station 112;
- Two staffed engines, one responding from each of the two fire stations;
- Two staffed rescue units, one responding from each fire station;
- Each engine staffed 24-7 with a unit officer (captain or lieutenant) and two firefighter/paramedics;
- Each rescue staffed 24-7 with a minimum of an EMT-A and a paramedic;
- All incident responses would involve the dispatch of the closest available fire/EMS unit;
- Full participation in a regional fire/EMS automatic mutual aid system; and,
- The operations staff (battalion chiefs, apparatus-assigned captains, lieutenants and firefighters/paramedics) would work a 24-hour shift on an average 48-hour Fair Labor Standards Act compliant work schedule.

Services Provided by a Standalone SRFED

The primary services to be provided by the SRFED as envisioned by the Study Team would be as follows:

1. Fire mitigation;
2. Pre-hospital EMS;
3. Basic special operations, e.g., dive, technical rescue, and large animal rescue;
4. Fire safety inspections, education, and fire investigations;
5. Community training and education; and,
6. Emergency management.

ADMINISTRATION

The SRFED administration would be responsible for overall coordination and direction of the Department's activities, operations, and financial management. The administration would establish, provide, and direct the following:

- Overall command;
- Policy development;
- Directive preparation;
- Development of rules and regulations;
- Purchasing oversight;
- Asset management;
- Fleet operations;
- Facility operations; and,
- Labor relations.

The SRFED administration would consist of the following:

- Office of the fire chief;
- Training;
- EMS quality assurance and training;
- Safety;
- Special operations, and,
- Administrative and clerical support.

FACILITIES

The two fire station facilities for potential use by the SRFED would be as described in Chapter Four–Fire Station Locations with Fire Station 82 and Fire Station 112 being separated and located in a manner to provide the quickest response times. Three optional scenarios are presented in Chapter Four for the implementation of a two-station configuration for Southwest Ranches with fire stations located in three approaches for the shortest projected travel times to the various parts of Southwest Ranches. The preferred optional configuration would need to be selected by Town Council, as determined appropriate.

As described in Chapter Four, the current fire station facilities being utilized by Southwest Ranches fire and EMS services providers (Town of Davie Fire Department and the Southwest Ranches Volunteer Fire Department) are inadequate and in need of replacement for a number of reasons outlined. Moreover, co-locating apparatus and personnel of both fire departments is inefficient and an improper use of valuable resources. Therefore, unless the Town chooses to maintain a one-fire-station configuration, two fire stations, a headquarters fire station, and a substation, should be built for the future.

The projected cost of a headquarters fire station and a sub-station was addressed in detail in Chapter Four and is summarized in the Fiscal Impact section later in this chapter.

APPARATUS

Engine/Pumper Units

The SRFED envisioned would include an engine/pumper and a rescue unit at each fire station. As discussed in detail in Chapter Five–Fire Services Apparatus, the current 1995 Pierce pumper is aging and in need of replacement. The implementation of this SRFED standalone fire services model would require the purchase of two pumpers—one to replace the current aging unit and a second to replace the pumper currently being operated under contract with the Town of Davie. The estimated cost per pumper is $550,000 and is included in the Fiscal Impact section later in this chapter.

Further, a reserve pumper would need to be included in the apparatus fleet. It is suggested that the current 1995 Peirce pumper currently utilized by the Southwest Ranches Volunteer Fire Department be retained in the fleet as a reserve unit and backup in the event one of the two first-line pumpers is out of service.

Rescue Units

The SRFED would operate two ALS rescued units—one from Fire Station 82 and one from Fire Station 112. One rescue unit would replace the unit currently operated under contract and the second to provide full Town coverage, given the fact that the contract services include backup rescue response into Southwest Ranches. It is estimated that each

rescue unit will cost $230,000 including equipment. The cost of these two units is included in the Fiscal Impact section later in this chapter.

STAFFING

The staffing and rank structure of the SRFED would consist of the following:

Uniformed Staffing

The uniformed staff of the SRFED would consist of the following ranks;

1. Fire Chief;
2. Deputy/Assistant Fire Chief;
3. Battalion Chief;
4. Captain for EMS
5. Captain for Training;
6. Captain for Fire Prevention;
7. Captain Station Commander / Unit Officer;
8. Lieutenant Unit Officer;
9. Fire Inspector;
10. Driver Engineer; and,
11. Firefighter/Paramedic.

Apparatus Staffing

A Formula for Calculating Staffing Needs

The Study Team typically utilizes a nationally recognized formula to assist in its determination of the adequacy of the total apparatus staffing of fire departments. That formula can provide a measure of budgetary accuracy in determining the actual number of firefighters and officers required to staff the fire and EMS apparatus, given the minimum staffing levels approved by the municipality.

Forty-Eight-Hour Work Week

Using current Davie Fire Department apparatus staffing levels, that formula is outlined as follows. To staff one position on a 24-hour basis and allow time off for training, vacations, sick leave, and on-the-job injuries requires 4.68* employees. This is based on the estimated time taken/required for vacation, sick, holiday, on and off the job injury, and other similar reasons for firefighters and officers not being available to staff apparatus. The average annual time off "the floor" for firefighters and officers has been determined to be 628 hours. Based on this average number of hours off, the number of personnel required could be calculated as follows for the envisioned SRFED:

*The 4.68 number is calculated as follows:

Total hours in a year:	8,760
Firefighters work 48 hours × 52 weeks	2,496
Minus estimated time off "the floor"	- 628
TOTAL HOURS AVAILABLE	**1,868**

8,760 (total hrs in a yr) ÷ 1,868 (total hrs is available) = 4.68 staff to cover one 24-hour constant staffed position.

Based on this approach for calculating firefighter and officer staffing requirements for the two fire station and apparatus deployment model, it appears that 51.5 firefighters and officers are needed.

Two-Station Model Apparatus Staffing

The following calculations illustrate the application of this calculated formula to determine fire and EMS operations employment needs.

2 engines × 3* staff × 4.68	=	28.1 staff
2 rescue × 2* staff × 4.68	=	18.7 staff
1 battalion chief × 1 staff × 4.68	=	4.7 staff
TOTAL	=	**51.5 staff**

*Note: includes an officer (lieutenant or captain) budgeted 24-7.

Based on this approach for calculating firefighter and officer staffing requirements for the two fire station and apparatus deployment model, it appears that 51.5 firefighters and officers would be needed in order for there to be sufficient firefighters and officers to staff the engines and rescues. The projected staffing needs outlined above will be utilized in determining the salaries and wages cost for the SRFED calculated later in this chapter.

Non-Uniformed Staffing

The non-uniformed staffing of the SRFED would consist of the following:

1. Administrative finance and purchasing officer;
2. Human resources and labor officer; and,
3. Secretarial clerical position.

TRAINING

The training function is necessary to provide the quality training to firefighters and officers so that they have the knowledge, skills, and abilities to safely handle fire/medical/hazardous emergency incidents while minimizing the risks.

Training and accreditation of SRFED personnel in the following areas includes:

1. Orientation and training of new hires;
2. Maintaining a state-of-the-art training effort;
3. EMS training to maintain skills;
4. Re-certification training;
5. Providing instructional media;
6. Coordinating the on-going in-service training;
7. Supporting the promotional examination process with human resources; and,
8. Conducting research and development involving new equipment and processes.

The training function consists of the Training Captain with medical coordination from the EMS Captain.

EMERGENCY MEDICAL SERVICES

The EMS function headed by the EMS Captain is responsible for the quality assurance program and assures that the Department's medical services comply with all local, state, and federal laws that govern pre-hospital emergency medical services in Florida.

The EMS Captain also assures that each paramedic and emergency medical technician (EMT) maintains the highest quality standards of care and training in coordination with the Training Captain. As required by the state of Florida, each paramedic and EMT must be recertified every two years.

FIRE PREVENTION

The fire prevention function is headed by the Fire Prevention Captain whose primary role involves building and community safety. The Fire Prevention staff conducts building inspection activities, including building inspection/alarm system tests, reviews of plans, fire drills, safety seminars, and demonstrations.

Fire Prevention is responsible for mitigating life safety hazards, compliance of building codes, approval of building plans, investigation of fires/arson, testing fire systems, and public education. It enforces provisions of the National Fire Protection Association (NFPA) Life/Safety Codes and Standards, Florida Fire Prevention Code, the Florida Building Code, and the Town ordinances related to life safety for the public. It conducts annual fire inspections on all commercial and a number of residential occupancies equal to three units and greater as mandated by law. Additionally, the Fire Prevention staff provides a public fire education program for the public.

The Fire Prevention staff consists of the Captain and the Fire Inspector / Firefighter.

FISCAL IMPACT

The following provides a summary of the estimated fiscal impact of implementing the Southwest Ranches Fire and EMS Department on a category basis, staffing, fire stations and apparatus. The apparatus staffing is calculated on a 48 hour, three platoon system.

STAFFING	**Annual Estimated Budget**
Uniformed Staff	
Fire Chief (1)	110,000
Deputy/Assistant Fire Chief (1)	$95,000
Battalion (3 × $85,000)	$255,000
Training Captain (1)	$85,000
EMS Captain (1)	$85,000
Fire Prevention Captain (1)	$85,000
Station Commander Captain (2 @ $90,000)	$180,000

Lieutenants (2-unit officers @ $75,000)	$150,000
Driver Engineer (2 for engines @ $75,000)	$150,000
Firefighter/Paramedic (38.5 @ 60,000)	$2,310,000
Sub-Total Uniformed Staff	**$3,505,000**
Benefits (calculated at DFD rate of 51%)	$1,755,000
Health Insurance (calculated @ $12,000)	$624,000
Total Estimated Salaries and Benefits	**$5,896,000**
Non-Uniformed Staff	
Administrative finance and purchasing officer	$65,000
Human resources and labor officer	$45,000
Secretarial clerical position	$38,000
Sub-Total Non-Uniformed Staff	**$148,000**
Total Uniformed and Non-Uniformed Staff	**$6,044,000**

Notes: 1. Apparatus staffing calculated on a 48 hour, three-platoon system.
2. Operations staff cost based on average Davie FD cost by position.
3. Fire Inspector included as Firefighter/Paramedic.
4. Benefits for non-uniformed staff to be determined.

Fire Stations	**Estimated Cost of Construction**
Headquarters Fire Station	$3,900,000
Sub-Station	$2,600,000
Total	**$6,500,000**

Note: Construction cost estimated base on potential cost per square foot as stated in Chapter Four.

In determining potential costs for new fire station facilities, the following items must also be considered in addition to the actual construction costs:

1. Basic construction approach to be taken;
2. Special features such as hurricane hardening and possible green construction;
3. Site preparation needs;
4. Size of facilities;
5. Professional services;
6. Permits and approvals;

7. Utility connection fees;
8. Off-site improvements (sidewalks, traffic lights, street lights);
9. Furniture;
10. Equipment;
11. State and County fees;
12. Contingencies;
13. Bid climate; and,
14. 24-hour nature of the facility.

Fire & EMS Apparatus	**Estimated Purchase Cost**
Engine (1 - Replacement for 1995 Pierce)	$500,000
Engine (1 – Substation)	$550,000
Rescue EMS Units (2 @ $260,000)	$520,000
Total Estimated Apparatus Purchases	**$1,570,000**

The reader should note that the cost estimates presented in this section are "ballpark" in nature. Caution should be exercised in using these cost projections because many aspects of staffing, fire station facilities, and fire and EMS apparatus must be considered. Careful consideration should be given in the use of these estimates since there are many aspects of each of these cost categories that must be refined and various related options and alternatives considered before costs may be viewed as firm.

OPTIONS AND RECOMMENDATIONS

6-1 The Town is encouraged to consider the services delivery and related estimated costs associated with the possible standalone fully-staffed Southwest Ranches Fire and EMS Department model options outlined to determine appropriateness and feasibility for the Town.

6-2 If the Town determines to implement the standalone SRFED model the development of a detailed implementation plan should be initiated including details relating to staffing, fire stations, and apparatus and related budget and timeline for implementation.

CHAPTER SEVEN
CONTRACTUAL FIRE & EMS DELIVERY MODEL

This chapter describes the model involving another municipal fire department providing all aspects of fire and emergency medical services for the Town of Southwest Ranches. All primary aspects of fire, EMS, and related services provided to the Town are discussed in this chapter.

As outlined in the Scope of Work for this Study and listed in the Introduction to this Study Report, the following is the requirement addressed by this chapter:

> "Maintaining contractual fire and EMS services. This evaluation will include a summary of the infrastructure and equipment needs, staffing requirements, administration and training needs in a proposed timeline consistent with current contractual status and all projected costs."

CONTRACTING AS A FORM OF COOPERATIVE SERVICES DELIVERY

As the reader will note, based on detailed discussion in Chapter Ten–Cooperative Services Provision, contracting for fire and EMS services is an important and typically very effective way for a municipality not having its own full-time fire department (such as Southwest Ranches) to assure the provision of fire and EMS services related public safety services.

The Study Team has observed and recommended that many municipalities provide various municipal services, including fire and EMS services, to other municipalities on a contractual basis. There are a number of types of fire and EMS services (e.g., inspections, command and training) that may be provided by contract. The most comprehensive and beneficial approach is contracting for full fire and EMS delivery.

The benefit to the receiving municipality could be the provision of a service too costly for it to otherwise fund and provide. The benefit to the providing municipality could be provision of revenue to offset the cost of providing its services or the opportunity to fund a costly service it might not otherwise financially be in a position to proceed.

Of course, contractual services arrangements could be on multiple municipality (three or more) contractual basis involving a providing municipality be offering services to several other municipalities. The Study Team has observed many situations where such contractual service provision has been substantially beneficial to all involved municipalities.

The current contract between the adjacent towns of Davie and Southwest Ranches for the Davie Fire Department to provide substantial fire and EMS services to Southwest Ranches is an excellent example of cooperative services delivery via contract. Having previously contracted for the services of two other adjacent fire and EMS services providers, the Broward County Sheriff's Office and the City of Pembroke Pines, the Town of Southwest Ranches has a rich history of contracting for full-time fire and EMS services to work in conjunction with its Southwest Ranches Volunteer Fire-Rescue Department (SRVFRD).

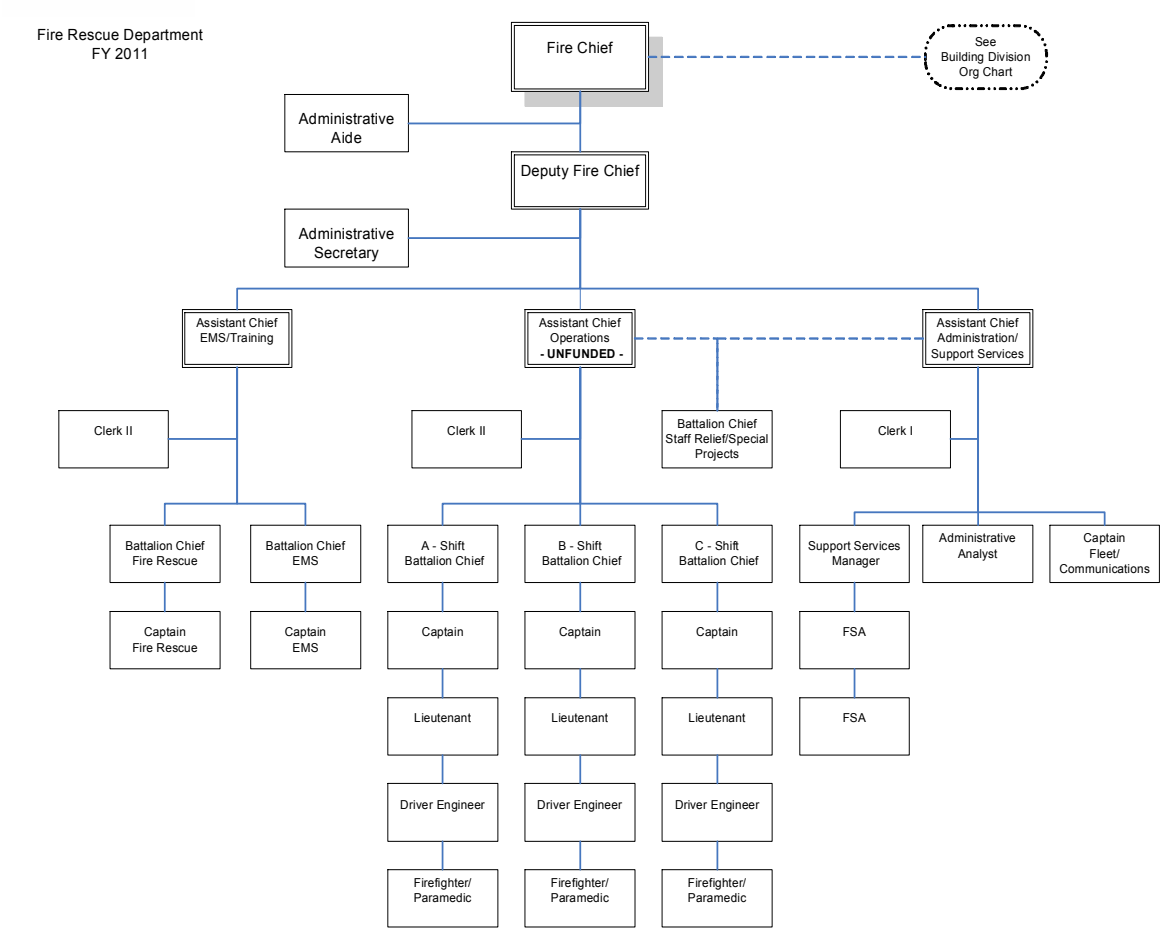
CURRENT CONTRACT – TOWN OF DAVIE

The current contract between the towns of Davie and Southwest Ranches was executed by the mayors of the two towns on May 2 and 3, 2012. As stated in the contract, the primary services that the Davie Fire Department (DFD) provides Southwest Ranches are:

1. Fire protection services;
2. Emergency medical services; and,
3. Fire prevention services.

Figure 7.1 illustrates the Davie Fire Department organization.

Figure 7.1
DAVIE FIRE DEPARTMENT ORGANIZATION



A number of the key characteristics and provisions of the contract for services, not discussed in detail later in this chapter, are the following:

1. Response times are a critical element of the Agreement;
2. Each year the administrators of the towns meet to establish maximum average response times (time from dispatch to arrival on scene) with appropriate subsequent action to be taken for improvement, as determine necessary;
3. Davie is to provide Southwest Ranches with a written monthly report detailing types and number of calls within Southwest Ranches and the average response times;
4. Broward Sheriff's Office (BSO) provides communications and dispatch services;

5. Davie provides a liaison between the two towns who is to function as a member of the Southwest Ranches staff;
6. The contract may be terminated by Southwest Ranches with written notification upon 365 days;
7. Southwest Ranches provides the fire station facilities in the Town for DFD operations;
8. Any calls outside of the towns of Davie and Southwest Ranches are considered for mutual aid purposes;
9. Davie provides the vehicles, equipment and related maintenance for their own use;
10. Davie provides the capital replacement of all DFD vehicles and/or equipment;
11. Davie maintains a Class 1 ALS Rescue Certificate of Public Convenience and Necessity and an appropriate State of Florida license to provide ALS/BLS;
12. Davie has command of all fire rescue and emergency services incidents occurring in the Southwest Ranches service area;
13. Davie provides fire rescue staff to support Southwest Ranches' sponsored events and non-sponsored events occurring within the Town;
14. Davie provides a Medical Director;
15. Davie provides emergency medical transportation for all patients requiring ALS/BLS transportation to an appropriate hospital emergency department; and,
16. Davie invoices patients for ALS/BLS transport fees and returns all transport fees collected for services rendered within Southwest Ranches to the Town, less any third-party fees for collections.

FACILITIES

Current Facilities

The Davie Fire Department delivers fire and EMS services to Southwest Ranches from two fire stations:

1. Fire Station 112, provided by Southwest Ranches at 17220 Griffin Road; and,
2. Davie Fire Station 91, provided by Davie located at 6101 SW 149th Avenue (Volunteer Road).

The reader will recall that SRVFRD members utilize Fire Station 82 with fire apparatus that is co-located with Fire Station 112 utilized by DFD apparatus and staff.

Potential Future Fire Station Options

The two fire station facilities for potential use by the DFD and the SRVFRD would be as described in Chapter Four–Fire Station Locations with Fire Station 82 and Fire Station 112 being separated and located in a manner to provide the quickest response times. Three optional scenarios are presented in Chapter Four for the implementation of a two-station configuration in Southwest Ranches with fire stations located in three approaches for the shortest projected travel times to the various parts of Southwest Ranches. The preferred optional configuration would need to be selected by Town Council, as determined appropriate.

As described in detail in Chapter Four, the current fire station facilities being utilized by Southwest Ranches fire and EMS services providers (DFD and SRVFRD) are inadequate and in need of replacement for a number of reasons outlined. Moreover, co-locating apparatus and personnel of both fire departments is inefficient and an improper use of valuable resources. Therefore, unless the Town chooses to maintain a one-fire-station configuration in Southwest Ranches, two fire stations, a headquarters fire station, and a substation should be built for the future.

The projected cost of a headquarters fire station and a sub-station was addressed in detail in Chapter Four and is also summarized in the Fiscal Impact section later in this chapter.

STAFFING

Davie provides staffing twenty-four hours a day, seven days a week, with the following minimum staffing:

Southwest Ranches Fire Station 112/82

DFD Personnel – Fire Station 112 – 17220 Griffin Road

- One company officer (Lieutenant or Captain) Firefighter Paramedic;
- One Driver Engineer Firefighter Paramedic; and
- One Firefighter Paramedic.

The total staffing provided is three firefighters and officers

SRVFRD Personnel – Fire Station 82 co-located with Fire Station 112

- Two Firefighters included in the Davie–Southwest Ranches contract, however, in practice current SRVFRD staffing practice is three fire and EMS personnel paid on a stipend basis assigned to a pumper. These SRVFRD members are under the direction of Davie and are to respond on calls.

The Study Team was advised that only Davie staff ride Davie apparatus at Fire Station 112.

Davie Fire Station 91

DFD Personnel

- One company officer (Lieutenant or Captain) Firefighter Paramedic
- One Driver Engineer
- Three Firefighter Paramedics

The total staffing provided is five firefighters and officers

SRVFRD Personnel

- The Davie–Southwest Ranches contract includes a provision that states two SRVFRD personnel shall be utilized to supplement DFD's personnel and shall work on all calls. The Study Team was advised that this provision of the contract has not been implemented and SRVFRD personnel have not been assigned to Fire Station 91.

APPARATUS – PUMPERS AND RESCUES

For the delivery of fire and EMS services the following primary apparatus (pumpers and rescues) are provided by Davie and Southwest Ranches at the fire stations indicated.

Fire Station 112/82 - 17220 Griffin Road

DFD provides the following primary apparatus for Fire Station 112 on Griffin Road:

- Pumper, ALS Type I Class A
- Rescue, ALS transport, medium duty, Type I (KKK) ambulance

SWRFRD provides the following primary apparatus for Fire Station 82 on Griffin Road:

- 1995 Pierce 1250 GPM pumper (recommended for replacement)

Fire Station 91 - 6101 SW 148th Avenue (Volunteer Road)

DFD provides the following primary apparatus for Fire Station 91

- Pumper, ALS Type I Class A
- Rescue, ALS transport, medium duty, Type I (KKK) ambulance

Although the contract provides the option for the Town of Southwest Ranches to assign apparatus for use by the SWRFRD at Davie Fire Station 91, reportedly that provision has not been exercised.

It should be noted that, by contract, the DFD staffs a pumper and a rescue at Fire Station 112 in Southwest Ranches with three firefighters and officers, while the same type of apparatus (pumper and rescue) at Fire Station 91 is staffed with five firefighters and officers. The reader should understand that three-person DFD staffing at Fire Station 112 in Southwest Ranches provides sufficient staffing of only one unit, either the DFD engine or rescue.

From one call to the next, the DFD officer must decide which unit is to respond, depending on the basic nature of the call. This practice is typically referred to as "cross staffing" units when two units or more must be staffed with the same limited number of firefighters and officers. The result is that, no matter the nature of the call, only one DFD unit (pumper or rescue) is able to respond. One DFD unit remains at the fire station in an unstaffed status and is unavailable for response to a call until the unit that responded to the call returns. So, despite the fact that contract funding provides for two DFD units to be housed at Fire Station 112, staffing is only provided for one unit response.

This "cross-staffing" approach is not particularly an issue if the call being responded to is an EMS call, since the co-located SRVFD pumper would likely remain at the fire station and could respond in the event of another concurrent call being dispatched. However, if the initial call being responded to requires the response of the DFD pumper the rescue would remain at the station unstaffed. During the time when the DFD pumper is committed on a call, a rescue from outside Southwest Ranches would need to be moved-up or dispatched on any subsequent EMS call, as required by contract. This could substantially increase the response time to an EMS patient in Southwest Ranches pending the return of the DFD pumper. It is suggested that periodically an operations contract

audit should be conducted to verify contract compliance and identify means for improvement in the contract.

Reportedly, a previous contract for fire and EMS services by an adjacent municipal services provider included five-person contracted staffing at Fire Station 112.

FIRE PREVENTION

By contract, the Town of Davie provides a number of fire prevention services for Southwest Ranches with properly certified personnel including the following within the contract fee:

- Annual fire safety inspections of every non-residential establishment within Southwest Ranches;
- Residential, community facility, agricultural, and municipal structure fire plan review and construction review services;
- Inspection and painting of fire hydrants and fire wells, as needed twice per year, and provision of related recommendations; and
- Fire alarm registration and permitting systems pursuant to adopted Southwest Ranches' Ordinance.

For an additional fee, Davie provides fire plan review and fire construction review for all non-residential, non-community facility, non-agricultural, and non-municipal structure plan review and fire construction review.

The Davie Fire Marshal, or designee, is deemed to be the Chief Fire Code Official for Southwest Ranches and is assisted by Fire Inspectors, as needed.

SRVFRD PERSONNEL

The Davie–Southwest Ranches contract includes a number of provisions related to the SRVFRD personnel. Broadly speaking, the contract states that "…Davie will work cooperatively and in good faith with the Southwest Ranches Volunteer Fire-Rescue, Inc. (Volunteers) regarding the Volunteer's active role in providing emergency medical and fire protection services to the RANCHES." Specifically, the related provisions include:

1. The "Volunteers" are to be afforded the same training opportunities available to Davie fire and rescue personnel;

2. In-house training provided by Davie staff is available for "Volunteers";
3. Davie provides vehicular maintenance services for SRVFRD units, as appropriate, costs for such services being the responsibility of the Southwest Ranches; and,
4. Applicable SRVFRD "Volunteers" are to attend the necessary EMS training as set forth by the Medical Director in order to renew certifications as EMS/Paramedics.

CONTRACT STATUS AND TIMELINE

This section reviews the status of the current Davie–Southwest Ranches contract for fire and EMS services, fiscal impact and considers a template for the future.

Timeline

The current Davie–Southwest Ranches contract was signed May 2 and 3, 2012. Subsequently, the effective date of the contract was October 1, 2012, ending on September 30, 2017. The contract is for a five-year period, renewable every successive five years.

Fiscal Impact

In consideration for the services described in the contract, Southwest Ranches pays Davie a contractually established amount monthly and annually. Pursuant to the contract the annual amount paid by Southwest Ranches increases every year by four percent.

The current contract provides that Southwest Ranches will pay the amounts listed below each of the contractual five years:

- **Fiscal Year One** (October 1, 2012 – September 30, 2013) = $2,388,000.00
- **Fiscal Year Two** (October 1, 2013 – September 30, 2014) = $2,483,520.00
- **Fiscal Year Three** (October 1, 2014 – September 30, 2015) = $2,582,860.00
- **Fiscal Year Four** (October 1, 2015 – September 30, 2016) = $2,686,174.40
- **Fiscal Year Five** (October 1, 2016 – September 30, 2017) = $2,793,621.40

For each five year renewal period the four percent increase included in the current five year should be reassessed for appropriateness considering the fiscal climate.

Template for the Future

In the experience of the Study Team and considering the fire and EMS services model criteria suggested in Chapter Three of this Study Report, a number of contract revisions and upgrades should be considered for any future contract for fire and EMS services considered by the Town. These include:

1. Revising the current contract with appropriate revisions related to transition related provisions;
2. Utilizing the updated contract as a "template" for the future;
3. Updating the "contract template" based on the status of the Southwest Ranches Volunteer Fire-Rescue Department;
4. Updating the "contract template" relating to unit and station staffing, e.g., cross-staffing;
5. Revising the "contract template" relating to the utilizing NFPA 1710 response time goals for purposes of Southwest Ranches services delivery; and,
6. Upgrading the services delivery in Southwest Ranches by full implementation of automatic mutual aid closest unit dispatch, as conditions allow.

The reader should note that this chapter was written with the SRVFRD as part of the contract. The following chapter, Chapter Eight, will address other possible services delivery models that could be considered by the Town.

OPTIONS AND RECOMMENDATIONS

If the Town determines to implement the contract approach to fire and EMS services provision for the future the following should be considered:

7-1 Utilize the current Davie–Southwest Ranches contract as a model template for future such contracts.

7-2 The annual percentage increase to be paid should be reviewed for appropriateness giving consideration to the economic climate.

7-3 Future contracts should include the provision to be renewable every five years.

7-4 Future staffing should be three firefighters and officers for pumpers and two for rescues.

7-5 Response-time goals should be based on NFPA 1710.

7-6 Services delivery should be improved by implementing closest unit dispatch mutual aid, as conditions allow.

7-7 The model criteria outlined in Chapter Three of this Study Report should be utilized.

7-8 Periodically an operations contract audit should be conducted to verify contract compliance and identify means for improvement in the contract.

CHAPTER EIGHT
VOLUNTEER FIRE DEPARTMENT MODELS

This chapter provides information regarding the history, administration, and operations of the Southwest Ranches Volunteer Fire-Rescue Department, Inc. (SRVFRD). All primary aspects of the fire, EMS, and related services provided by the SRVFRD are discussed in this chapter, including compensation. In addition, options for the future of the SRVFRD in terms of fire and EMS services delivery to the Town of Southwest Ranches are discussed.

As outlined in the Scope of Work for this Study and listed in the Introduction to this Study Report, the following is the requirement addressed by this chapter:

> "Maintaining existing outside contractual services in conjunction with the VFD services**.** This evaluation will develop models to accurately define volunteer services and recommend the most cost-effective method to ensure public safety as provided by outside contractual providers in tandem with the SRVFRD. Multiple models may be proposed, as appropriate, for consideration."
>
> "All models of possible services delivery shall be analyzed, including but not limited to, consideration of a split model—volunteers for fire response and professionals for EMS services, similar to Plantation, Florida."

Previous chapters have reviewed and assessed fire and EMS services delivery options related to a town fire and EMS department and maintaining the contractually provided fire and EMS services delivery model approach. This chapter provides information regarding other options for consideration by the Town of Southwest Ranches that relate to the following models:

1. Stand-alone town fire department comprised of paid and volunteer staffing—a combination paid-volunteer town fire department;
2. Maintaining contractual paid staffing model and SRVFRD volunteer staffing—continuing the paid-volunteer approach to services delivery;
3. Split model volunteers for fire protection response and paid (town or contractual) staffing for emergency medical services response;

4. All volunteer staffed standalone Southwest Ranches Fire and EMS Department (SRFED); and,
5. Reliance only on either a town or contractual paid staffed model for fire and EMS services.
6. Diminish or eliminate the role of the SRVFRD in fire and or EMS services delivery.

The reader will note that Chapter Nine of this Study Report addresses volunteer recruitment and retention, with options and recommendations for consideration by the town and/or the SRVFRD in the event that the Town's decision is to retain some form volunteer staffing in the delivery of fire and EMS.

THE SOUTHWEST RANCHES VOLUNTEER FIRE-RESCUE, INC.

History

The following is a history of the original Davie Volunteer Fire Department, now the Southwest Ranches Volunteer Fire-Rescue Department, Inc., as provided to the Study Team:

> "The original organization was the Davie Volunteer Fire Department, which was chartered on October 6, 1952. The roots extend even prior to that when a group of people banded together to fight fires (no dates available). This volunteer department serviced Davie, as well as the majority of SW Broward's unincorporated areas and surrounding communities.
>
> The first Fire Chief was Cecil Achemire, followed in succession by; Carroll Anderson, Cecil Achemire, William Griffin, Robert Biggs, Earl Mount, Larry Landers, Joe Ryan, Frank Wiess, Clyde Nash, Richard Stover, Joe Ryan, Richard Stover, Frank Buchert, and Richard Christensen. The current chief is Lee Bennett.
>
> In the mid-sixties, the ladies of the Davie Volunteer Fire Department Auxiliary presented the volunteers with the keys to a brand new rescue van. The van was purchased with S&H trading stamps they had collected for over a year. By early 70s, the volunteers had established a cadet program by which teenage youth under 18 could learn the routines of firefighting. Many of these cadets went on to become career professional firefighters. A number of them rose through the ranks to become Battalion Chiefs and above.

When the Davie volunteers celebrated their 25th anniversary in 1977, they were 63 members strong. Eventually, the Town of Davie created its own paid fire department. In 1980, the volunteers moved their base to Sunshine Ranches, and changed their name to Southwest Broward Volunteer Fire & Rescue, and eventually re-incorporated as such.

Initially they were housed on the property of Fire Captain, Bill Lewis. When Bill Lewis moved north, and sold his property, they were accommodated and housed by Charlie Tona, who was President of the Board of Directors, as well as a firefighter. On June 6, 2000, the Town of Southwest Ranches was formed and it was again time for the department to change its name. Southwest Ranches Volunteer Fire-Rescue, Inc. came into being and entered into a service agreement with the town. This was through no small effort on the part of Johnny Dollar, the Town of Southwest Ranches' first Fire Commissioner. Once again the base of operations was moved, this time temporarily to the property of Commissioner Dollar. As of the date of this publication, the department has again moved and is located in its temporary quarters at Griffin Road and SW 172 Avenue. A permanent home is planned for this site in the future.

At this time, all of the volunteers are either state certified firefighters or are in the process of becoming state certified. Many are also EMT's, paramedics or are in school for the same. These volunteers, aided by their four-wheel drive equipment, specialize in fighting brush fires and are uniquely qualified to provide large animal rescue. These distinctive services, which are especially valuable in rural areas, are available to the Town of Southwest Ranches through its volunteer fire department. These specialized services have also been made available to surrounding municipalities through mutual aid requests.

"Southwest Ranches Volunteer Fire-Rescue has worked well alongside its neighboring fire departments, bringing manpower, equipment and its volunteers' diverse abilities. It has always strived to be of service to the community that it serves and will continue to do so in the future."

Purpose

According to the Amended and Restated Articles of Incorporation for Southwest Ranches Volunteer Fire-Rescue, Inc., a Florida corporation, filed on June 24, 2013, the primary purpose of the corporation is:

> "To lessen the burden of government by protecting life and property against fire, disaster, natural catastrophe or other calamity in the Town of Southwest Ranches, Florida, and when, as and if requested, offering mutual aid and assistance to any surrounding municipality or other government entity."

According to Article I, Corporation, section 1 of the SRVFRD By-Laws, the primary stated purpose of the Corporation is:

> "To provide for the protection of life and property against fire, disaster, natural catastrophe or other calamity as may be appropriate for a Volunteer Fire-Rescue Department within the town limits of Southwest Ranches, Florida, and when, as and if requested, offer assistance to Broward County, Florida for same, along with offering mutual aid and assistance to any surrounding municipality or other governmental entity such that the purposes of this Corporation are within the meaning of §501(c)(3) of the Internal Revenue Code of 1986, as Amended, (the "Code") or the corresponding provision of any future United States Internal Revenue Law."

Mission Statement

The Study Team was advised that the Mission Statement of the Department is:

> "To provide professional volunteer fire suppression services to the residents of the Town of Southwest Ranches."

Organization – Directors and Officers

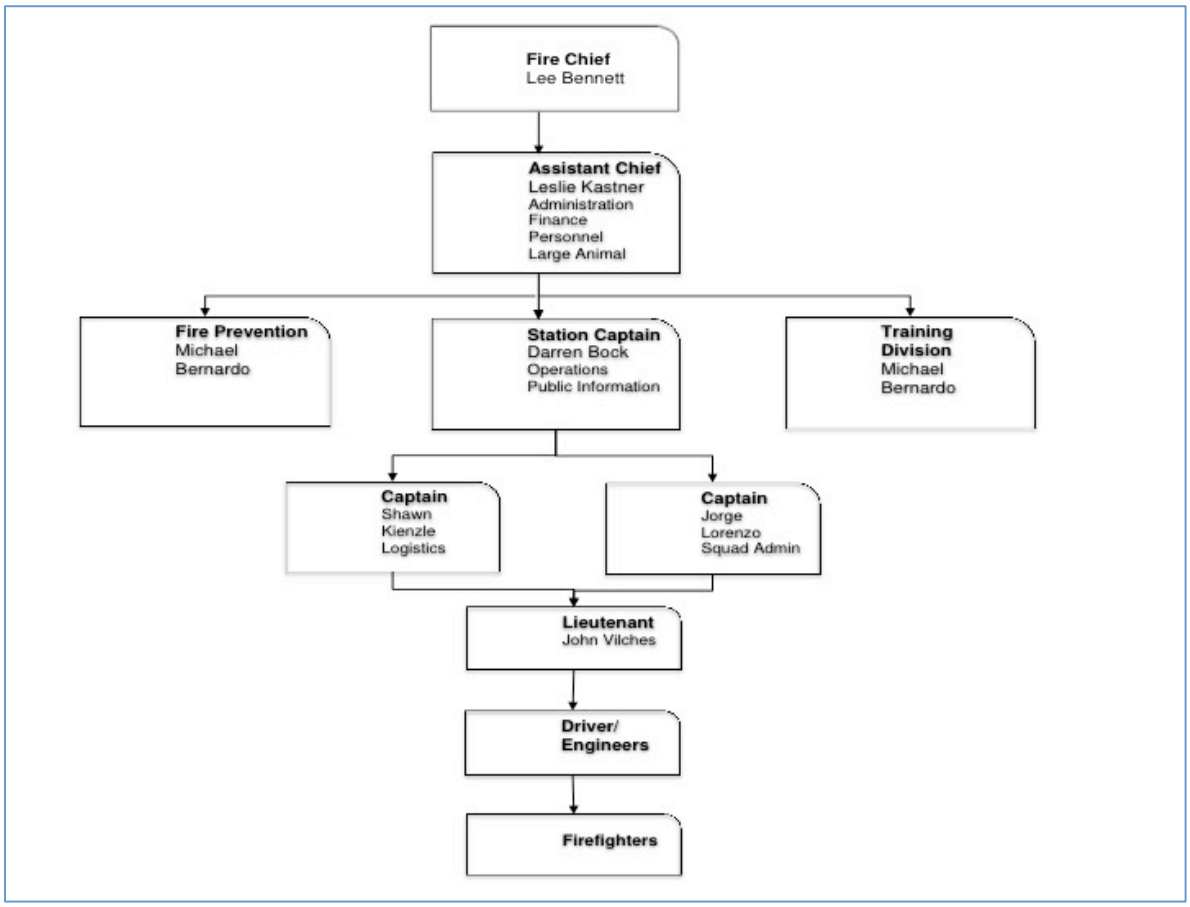
According to the By-Laws, the business of the Department is managed by the Board of Directors consisting of the Town of Southwest Ranches Town Council or their appointees.

The Board of Directors, by majority vote, appoints the Chief, Assistant Chief, Secretary, and Treasurer.

The Chief has the following primary duties and powers:

- Presides at all Department meetings;
- Oversees all day-to-day operations of the Department and acts at the will of the Board of Directors;
- Appoints all committees
- Signs all orders;
- Supervises all apparatus belonging to the Department;
- Appoints members to serve as staff officers—captains and lieutenants;
- Has the power to approve all purchases not to exceed $2,000.00;
- Serves as President of the Department.

Figure 8.1
SRVFRD ORGANIZATIONAL CHART



Volunteer Members

As is typical of many volunteer fire departments in the U.S., the SRVFRD includes two membership categories:

1. *Active Members* are "…persons duly trained and/or qualified authorized by the Department to participate in the firefighting rescue and protection efforts of the Department"; and,
2. *Associate Members* are "…persons supportive and interested in furthering the betterment of the Department."

The By-Laws state the following as relates to voting and required meeting and activity attendance:

> *Voting*: "Each member holding Active membership status of the Department, as well as all members of the Board, shall have one (1) vote on all issues open to membership voting as determined by the Board of Directors."
>
> *Meetings/Activities*: "All Active members must attend at least eight (8) meetings per calendar year and all Associate Members must attend at least six (6) meetings per calendar year. Members holding Active status must participate in his or her share of the firefighter scheduling by the Department to maintain member in good standing status. Members holding Associate status must participate in three fund-raising projects of the Department throughout each calendar year."

As part of the induction process each new member must sign the Volunteer Firefighter Agreement to assure that each new member clearly understands the expectations and requirements of membership in the SRVFRD. The Agreement includes sections addressing the following:

1. Acceptance of the Agreement;
2. Status related to employment;
3. Termination;
4. Rights;
5. Rules and procedures;
6. Performance and duty schedule;
7. Compensation;
8. Voluntary resignation;
9. Equipment;
10. Anti-discrimination and anti-harassment policy; and,
11. Third party beneficiary.

The Study Team was provided with membership information from 2008 through the present. It appears that the number of members has been on the increase during these years. The following summarizes the membership level activity during this six-year period based on annual membership lists:

Year	Total Members	Resigned
2008	11	7
2009	16	7
2010	25	11
2011	28	3
2012	42	11
2013	44	7

The Study Team was advised that, although the overall membership of the Fire Department has been on the increase, very few members live or work in Southwest Ranches. That fact makes it difficult for the SRVFRD to rely on a typical approach to providing volunteer staffing via response from home or work in or near the service area—Southwest Ranches. It was for that reason that in September 2012, the Town funded the Fire Department to staff Engine 82 at the Southwest Ranches Fire Station 82.

Reportedly, very few responses to calls by members involve responses from home or work in or near the Town. To a large extent, emergency call response is by members working on a stipend basis on a 24-hour shift. The Town funds three members of the SRVFRD 24-7 on paid stipend basis to staff Engine 82, or other apparatus required for the call. In the experience of the Study Team, this approach to funding constant staffing of fire services apparatus is unique in volunteer fire services and will be discussed in more detail in the Compensation section of this chapter.

There are other means for funding volunteer fire department staffing, such as pay by call, that are more typically used. However, due to the lack of members living or working in the Town, the pay by stipend for in-station shifts was implemented. The reader will note that a following chapter of this Study Report is Volunteer Recruitment and Retention to provide and offer guidance and suggestions for increasing the volunteer force living and/or working in the Town.

Training and Certification

Providing training and encouraging and facilitating the certification of members in various areas is an important part of a fire services delivery agency activities. The SRVFRD appears to place a high priority on providing in service training and encouraging members to take training and certifications courses funded by the Town as they progress in their volunteer fire and EMS career.

Commencing in September 2012, the SRVFRD began to follow the Davie Fire Department's monthly training schedule for in-service training while on shift. At that time the annual training schedule for the Tuesday company drills was implemented. Written drill plans are in the process of being created for each training module.

The following are relevant training/certification initiatives:

1. Driver/Engineer training has been offered to certify driver/engineers since the Department's inception and State certification is encouraged;
2. All Department members are required to learn to operate the Attack truck;
3. The Department's first Hydraulics class for Driver/Engineers and a Pump Operators class will be offered in early 2014;
4. A Tactics I course was conducted for officers and acting officers in September 2013;
5. With the support of an Assistance to Firefighters Grant (AFG) program Driver/Engineer, Fire Officer I, EMT-Basic and Fire II training/certification training will be provided;
6. Six members attended the Public Information Officer course in June 2013;
7. Twelve members have taken the Emergency Vehicle Operations Course; and,
8. The Department regularly offers Large Animal Rescue Awareness Level or Operations Level courses to all members.

The priority placed on training and certifications by the Department leadership seems to be paying off as illustrated by the number of members with various levels of training and certification.

Funding the SRVFRD

Funding for the SRVFRD is largely provided by the Town. For the fiscal years 2008-2012 approximately 90 percent of the Department's **funding** came from the Town, while

in later years (2011-2012) approximately 98 percent of the **operations** of the Fire Department were from the Town.

Outside of Town funding, the Department conducts a number of fundraisers yearly, including:

1. Annual Santa Runs which generate an average of $6,000 per year;
2. Reflective address sign delivery;
3. Birthday party visits; and,
4. BBQs.

The funds raised by these fundraisers are maintained in a separate bank account and included in the Town-funded annual budget.

Reportedly, the Town and SRVFRD have been successful in obtaining grants from various sources to fund training and equipment needs of the Department. Over the last 10 years, grant sources have provided approximately $211,397 in funds to support the Town's fire services.

As stated, the primary source of SRVFRD funding is the Town of Southwest Ranches. Figure 8.2 illustrates the funding levels for the Department for FY 2012/2013 and FY 2013/2014.

Other than the chief salaries and the stipend expenditures, this budget seems typical for a small single fire station volunteer fire and EMS department.

Stipend

As previously stated, the Town of Southwest Ranches and its Fire Department utilize two approaches to stipend of Fire Department staff, salary for the chiefs, and stipends for on-duty firefighters and officers. The salary approach for the two chiefs seems typical and appropriate as a compensation approach. However, in the experience of the Study Team members who have assessed and conducted planning studies for more than 200 paid, combination paid/volunteer, and volunteer fire departments across the U.S., the Town's stipend approach is unique and highly unusual. Given the unusual firefighter/officer payment approach the question of the appropriateness of this approach seems relevant. The Town should consider altering the stipend payment approach for SRVFRD firefighters and officers.

Figure 8.2
PUBLIC SAFETY – VOLUNTEER FIRE DEPARTMENT BUDGET DETAIL
FY 2012/2013 and FY 2013/2014

EXPENDITURES	FY 2012/2013	FY 2013/2014	DESCRIPTION
Salaries	52,000	52,000	Chief & Assistant Chief
Payroll Taxes	3,978	3,978	SS/FICA + Medicare
W/C Ins	2,704	2,704	FMIT - Town's W/C Ins
Sub-total: SRVFRD –Fire Admin	**58,682**	**58,682**	**SRVFRD Total**
Professional Services	16,000	31,600	Drug Testing/Background Checks
Telecommunications	4,100	4,100	Utility – Comcast + Beepers
Electricity	7,500	7,000	Utility – FPL Allocated 50%/50%
Building Maintenance	500	7,050	Misc. – Truly Nolan/AT&T/Bio Waste
Equipment Maintenance	2,900	4,000	Misc. Equipment Repairs
Miscellaneous Maintenance	16,496	12,500	Unforeseen Maintenance…
Vehicle Maintenance	17,500	25,000	Vehicle Maintenance
Uniforms	9,950	5,000	Uniforms
Gas	17,500	17,500	Gas
Supplies	5,750	12,000	Office Supplies
Training/Education	15,000	11,000	Staff Training
Machinery/Equipment	8,000	5,000	3 FULL Sets of Bunker Gear
Truck 82 Loan Payment	18,122	18,122	Pumper Truck 82 Annual Payment
Stipends	224,000	224,000	Stipends
Volunteer W/C & Liability Insurance	32,000	31,000	W/C Ins with FMT and VFIS
Sub-Total: PS-Operations+Fire Fd	**395,818**	**414,872**	**Department Total**
Total Volunteer Portion	**454,500**	**473,554**	**Total Volunteer Portion**

Note: Fire Well Maintenance, studies and Davie Contract not included.

Policies and Procedures

The Study Team noted that the written policies, procedures, and guidelines utilized by the SRVFRD are of three different sources: (1) SRVFRD, (2) Davie Fire Department, and (3) Pembroke Pines Fire Department (the prior services delivery contractor). Utilizing three

sets of important protocols would seem to potentially create confusion and conflict. It would be appropriate for the SRVFRD to follow such documents from the SRVFRD Fire Chief and the current contract services provider.

Facilities

Previous chapters of this Study Report have discussed the need for one or two new fire stations to serve Southwest Ranches, depending on the services delivery model chosen by Town Council. Any delivery model chosen by Town Council should consider the fire station needs of the SRVFRD.

OPTIONAL FUTURE MODELS WITH THE SWVFRD

This section reviews the potential options for the provision of fire and EMS services.

Combination Paid /Volunteer Town Fire Department

This would be very similar to the stand-alone Town Fire Department comprised of paid and volunteer staffing—a combination paid/volunteer Town Fire Department. The characteristics of this combination paid/volunteer staffed Town Fire Department could include the following:

Characteristics of a Town Combination Paid/Volunteer Department

A full-service Town combination paid/volunteer fire and emergency medical services delivery agency would include the following characteristics:

- Commanded and administered by a full-time uniformed fire chief;
- A uniformed paid/volunteer chain of command that includes chief, battalion chiefs, captains, lieutenants, paramedics, and firefighters;
- Captains could serve as program managers (training, volunteer support, EMS, or prevention) or station commanders (one for station) serving also as engine unit officers;
- Administrative support for accounting, human resources, labor relations, purchasing, and other similar services provided by a civilian;
- Fire prevention activities headed by a uniformed captain;
- Fire training programs supervised and coordinated by a uniformed captain with volunteer support;
- EMS quality assurance and EMS training programs managed by a uniformed captain;

- Medical direction provided by a qualified physician;
- Secretarial support provided by a civilian staff member;
- Incident and shift command provided by battalion chiefs 24-7;
- Engine companies commanded by paid and volunteer unit commanders, captains, and lieutenants;
- Incident response provided from two fire stations—Station 82 (volunteer) and Station 112;
- Two staffed engines (one paid and one volunteer), one responding from each of the two fire stations;
- Two staffed rescue units, one responding from each fire station;
- Each engine staffed 24-7 with a paid and volunteer unit officer (captain or lieutenant) and two (paid and volunteer) firefighter/paramedics;
- Each rescue staffed 24-7 with a minimum of an EMT-A and a paramedic;
- All incident responses would involve the dispatch of the closest available fire/EMS unit;
- Full participation in a regional fire/EMS automatic mutual aid system; and,
- The operations staff (paid and volunteer) battalion chiefs, apparatus-assigned captains, lieutenants and firefighters/paramedics) would work a 24-hour shift on an average 48-hour Fair Labor Standards Act compliant work schedule.

Services Provided by a Standalone SRFED

The primary services to be provided by the Southwest Ranches Fire and EMS Department (SRFED) as envisioned by the Study Team would be as follows:

1. Fire mitigation;
2. Pre-hospital EMS;
3. Basic special operations, e.g., dive, technical rescue, and large animal rescue;
4. Fire safety inspections, education, and fire investigations;
5. Community training and education; and,
6. Emergency management.

Uniformed Staffing

The uniformed staff of the SRFED would consist of the following ranks;

1. Fire Chief;
2. Deputy/Assistant Fire Chief;
3. Battalion Chief (contract and volunteer);
4. Captain for EMS

5. Captain for Training;
6. Captain (volunteer) for Recruitment and Retention:
7. Captain for Fire Prevention;
8. Captain (contract and volunteer) Station Commander / Unit Officer;
9. Lieutenant Unit Officer (paid and volunteer);
10. Fire Inspector;
11. Driver Engineer (paid and volunteer); and,
12. Firefighter/Paramedic (paid and volunteer).

Fiscal Impact

In theory, the fiscal impact of this Town Fire Department model would be similar to that of the standalone paid fire department outlined in Chapter Six with the exception of the following:

1. The cost of staffing of one of the two engine companies would be reduced to approximately $220,000, the cost of stipend staffing one engine 24-7;
2. Reduced cost of benefits related to the staffing of one engine company; and,
3. Reduced cost of health insurance, approximately $168,000.

Combination Paid Contract / Town Volunteer

This model would be as is currently functioning in Southwest Ranches with the paid-staffed Davie Fire Department as described in Chapter Seven and the volunteer-staffed SRVFRD as described in the early part of this Chapter.

Fiscal Impact – Current Model

The fiscal impact is as approved in the 2014/2014 Southwest Ranches budget. The total budget for both the Davie contract and approved funding for the SRVFRD is $3,063,074.

Plantation Model

The split type Plantation model involves volunteers on fire apparatus for fire protection response and paid (Town or contractual) staffing for emergency medical services response ambulance rescue units. To implement the Plantation model would involve the Davie Fire Department constant staffing the ALS ambulance rescue unit and the current SRVFRD stipend personnel constant staffing the primary pumper responding from Fire Station 112/82.

The Study Team does not suggest this model for implementation in Southwest Ranches since it would immediately reduce by one pumper the fire protection response.

Fiscal Impact – Plantation Model

The fiscal impact of the implementation of the Plantation model would be the reduction of one firefighter/paramedic and removal of the Davie pumper from Fire Station 112.

All-Volunteer Staffed Standalone SRVFRD

The question as to the potential for an all-volunteer-based Southwest Ranches Volunteer Fire-Rescue Department serving the Town implies that fire and EMS services could be effectively provided without any paid staffing. Given the nature of the development in Southwest Ranches as largely a residential community with substantial upscale housing, farmland, churches and schools it is not likely that sufficient volunteer staff could be recruited and retained to establish an effective all-volunteer force to function without paid staffing.

WHAT IS THE MOST COST-EFFECTIVE SERVICES DELIVERY?

Based on the information included in this Study Report, it appears that the most cost effective fire and EMS service delivery approach is a form of the model in effect today—combination of contract paid and volunteer, or the elimination of the stipend and/or salary expenditures. All other models would either involve substantial cost increase and/or reduced service level/s.

OPTIONS AND RECOMMENDATIONS

8-1 The SRVFRD should modify its Mission Statement to include provision of pre-hospital EMS.

8-2 The Town Council should re-consider the approach to the stipend payments to SRVFRD firefighters and officers.

8-3 The Fire Chief should place a high priority on updating policies, procedures, and guidelines of the Fire Department.

8-4 The Town Council should consider the various fire and EMS services delivery models and implement the appropriate option/s in the best interest of the Town of Southwest Ranches, taking into consideration funding and services to be provided.

CHAPTER NINE
VOLUNTEER RECRUITMENT & RETENTION

The chapter provides information relative to fire, EMS and rescue volunteer recruitment and retention. Additionally, associated options and recommendations are outlined for consideration by the Southwest Ranches Volunteer Fire Department (SRVFD) and the Town.

The chapter includes information regarding volunteerism generally; recruitment of volunteers; retention of volunteers; current efforts in recruitment and retention; length of service awards program; and other related topics associated with possible volunteer involvement.

OVERVIEW OF VOLUNTEERISM

The Study Team's experiences in volunteer fire and EMS service reflect various approaches and reasons for volunteer participation. This experience is useful in explaining some opinions of volunteer service constraints and benefits.

Nationally, some volunteer fire departments seem to have a continual supply of individuals who want to and can volunteer their services. Others, however, have problems trying to recruit enough volunteers to maintain minimal staffing of units and subsequently may have difficulty retaining those members and developing qualified volunteer leaders. The key seems to be meeting the needs, expectations, or both of the volunteers, which are different in many respects from paid personnel.

When individuals become career firefighters/EMTs, their initial concerns may be material needs, such as salaries, benefits and financial security, in addition to their desire to serve the public. The question of why people volunteer their services has been raised to the Study Team. Therefore, a review of accepted principles of motivation may be helpful. As Maslow's "Hierarchy of Needs" states, individuals are motivated by five levels of needs. These are in order of highest to lowest:

1. Physiological needs, such as food, water and shelter.
2. Safety needs, such as security, order and stability.
3. A sense of belonging, involving friendship, identification and love.
4. Esteem involving prestige, success and self-respect.
5. Self-actualization needs, which involve psychological needs from within.

According to Maslow people must meet their first need before being able to proceed to the second need. The first need is usually met through regular employment and, in some cases, through a second job. In order to meet this first need, sometimes both spouses must work.

As employment and salary also provide for the safety and security needs, individuals move to the third level, which involves the need for a sense of belonging. One way to satisfy this need is by volunteering to provide some level of community services. It is from this pool of people that volunteers are available for firefighting and emergency medical services.

SOUTHWEST RANCHES VOLUNTEER FIREFIGHTERS

Through the years, the Town has been provided fire and EMS by a number of neighboring cities and the County Sheriff's firefighters and officers augmented by services of volunteer members and paid staff of the Southwest Ranches Volunteer Fire Department funded by the Town.

The SRVFD was organized under the laws of the State of Florida. The Town of Southwest Ranches operates under a set of fire department rules and guidelines; and elects and/or appoints a set of officers pursuant to their rules, traditions and Town protocols.

It is the Study Team's goal to present suggestions as part of this Study that could provide the opportunity for maintaining and increasing substantial fire rescue service delivery by volunteer fire service delivery members, within the options selected by the Town Council.

RECRUITMENT OF VOLUNTEERS

Each volunteer for the fire and rescue services serves as an ambassador who can encourage others to apply for membership. While incentives, as listed in this section, are very important, personal recruitment by the current members is vital to the continued success of the volunteer program.

Many volunteer fire departments in towns, counties and cities use the following methods to recruit new volunteers for their volunteer fire departments:

1. Development and distribution of brochure material;
2. Word of mouth;
3. Family tradition;
4. Interest after having been a customer of the fire/EMS service;
5. Area-wide poster placement in businesses and other visible public areas;
6. Door-to-door neighborhood recruitment;
7. CPR and EMT-A classes open to the public;
8. Televised public service announcements;
9. Radio public service announcements; and,
10. Speakers sent to community group meetings and high schools.

Current Recruitment Efforts

The Study Team was advised that a number of volunteer recruitment tools have been used in an effort to attract new volunteers for the fire company. Reportedly, the volunteer fire company has recruited new volunteers in the following ways:

1. Word of mouth;
2. Recruiting family members; and,
3. Public gatherings and school public education opportunities.

RETENTION OF VOLUNTEERS

Clearly, the management of public safety personnel resources is a critical task, because human resources generally determine the quality of services delivered to the public.

Volunteers may not be available to respond to fire and rescue calls for a variety of reasons. These include days off and away from the area, vacation, sickness, injury, other priorities and time commitments and time away for training.

A critical time period for efforts to retain volunteers is the first four years of membership. It has been said that if a new member completes the first four years he/she will most likely remain for many years. Programs aimed at retaining volunteers during their first four years of membership should be identified as a priority.

Based upon interviews with volunteer personnel participating in this Study, it seems there has been a reduction in some volunteer memberships.

The overall philosophy of the leadership of the SRVFD is, however, consistent with a very important volunteer retention approach. Pride in the organization and treating the volunteer personnel "right" are important to the leadership.

Typically, when volunteer firefighters are asked about their reasons for remaining volunteers, they give a number of reasons, including:

1. Pride in the organization;
2. Once you get a taste of it, you want to continue;
3. Continuing need to help the public;
4. Keep up the friendships;
5. The great personal satisfaction received;
6. Physical activity; and,
7. Continuing involvement is an enjoyable activity for those who are career fire-fighters in other jurisdictions.

The efforts to retain volunteer personnel seem to vary. There is no official program focused on the retention of volunteer fire and rescue members. The retention programs for volunteer fire and rescue personnel should be broad-based and area-wide.

Many very successful volunteer fire and rescue services exist throughout the United States. The basis for their success varies significantly. However, the Study Team has noted that the more successful systems expend considerable effort to retain their volunteer personnel, including significant efforts to recognize their volunteers and their efforts.

Organizations with successful volunteer programs commit much time and effort to providing training and experience to volunteer personnel. Retaining trained and experienced personnel is more cost-effective than having to constantly train new volunteers. The trained and experienced personnel also provide better service.

Although a number of incentives in other communities may not apply to Southwest Ranches, the various benefits reflect a community's commitment to recruiting and

maintaining volunteers. Several of the programs that have been successful in assisting to retain volunteers in other locales include:

1. Comprehensive awards program;
2. Social events, such as banquets and dinners;
3. Education tuition assistance programs;
4. Workers' Compensation coverage;
5. Length-of-service awards programs;
6. Free training and experience for career preparation in fire, rescue, emergency medical and other related areas;
7. Free passes or tickets to community activities;
8. Physical fitness facilities and equipment;
9. Insurance coverage, including medical, dental and life insurance;
10. Various compensation programs, such as out-of-pocket expenses for fuel, education and training materials, and meals; hourly pay rate ("paid on call" volunteers); and, compensation based on an activity-related point system;
11. Reduced sewer and water rates;
12. Property tax percentage reduction; and,
13. Uniforms, clothing with the department's logo and individual tools, such as flashlights and stethoscopes.

Recruitment and retention of volunteers are of prime importance to the continuation of the volunteer fire and rescue service. Therefore, it is important that the Town and the volunteer fire department work together to develop and implement programs that are intended to attain and maintain a high degree of volunteerism in the system.

Length of Service Benefit Program

Many jurisdictions in the United States with either a fully volunteer system or a combination of a career and volunteer system have established a length-of-service awards program (LOSAP) for the volunteer fire and rescue service personnel. This program has a proven track record of improving volunteer recruitment and retention. The program provides certain benefits to volunteers who have met minimum calendar-year service requirements for a set number of years. In other words, it is a volunteer retirement benefit program.

A number of programs established in other jurisdictions involve differing levels of program requirements. One type of LOSAP program is to maintain a defined level of service activity per month.

PUBLIC AWARENESS

The Study Team interviewed volunteer leaders and members who expressed concern that the general public is not fully aware of the volunteer involvement in the fire rescue service. Residents of the service area have moved from other counties and municipalities to the Study area and may believe that they are being served by a paid fire department. Most citizens may know they have a local fire station, but some may believe it is fully staffed with paid firefighters and officers. The Study Team has noted that this lack of understanding increases when the community is a bedroom community.

Many times there appears to be a need to educate township citizens and business people on the programs and composition of the fire service delivery agency.

RECRUITMENT AND RETENTION PLAN

The volunteer fire company is encouraged to develop recommendations for a comprehensive volunteer recruitment and retention program for consideration by the Town and the SRVFD. In developing such a program, the Town and SRVFD should consider the program ideas presented in this Chapter. This consideration will help ensure that the program recommendations are both comprehensive and focused on the needs related to improving volunteerism in the area served by the SRVFD.

Any region-wide volunteer recruitment and retention program recommendations should include a delineation of appropriate funding requirements. The Southwest Ranches Volunteer Fire Department is encouraged to approve the funding necessary to plan, develop, and implement a comprehensive volunteer recruitment and retention program.

SUMMARY

The staffing approach involving volunteer members can provide a cost-effective service. The viability of this volunteer staffing approach in the future will, to a large extent, be based on the level of effort placed on volunteer recruitment and retention by the Southwest Ranches Volunteer Fire Department.

Recruitment of volunteers for the fire and rescue services has been accomplished primarily by "word of mouth." In addition, the volunteer fire company has been implementing a limited number of ad hoc retention efforts, including training.

Nationally, there are a number of very successful volunteer recruitment and retention programs in local government's volunteer fire companies that continue to assist in providing the essential volunteer personnel for the provision of their fire and rescue service. This Chapter outlined a number of recruitment and retention options for consideration by the Town and Southwest Ranches Volunteer Fire Department.

OPTIONS AND RECOMMENDATIONS

9-1 Officials are encouraged to place periodic articles in local newspapers regarding activities of the volunteer component of the fire and rescue service.

9-2 A comprehensive volunteer recruitment and retention program should be developed. The program should be appropriately funded and include:

a. Length of service awards program or other pension program, as approved;

b. Recommendations for volunteer retention programs based on input received from exit interview or forms;

c. Budget recommendation for the recruitment and retention programs;

d. Recommendations for volunteer recruitment programs, such as possible medical and dental care;

e. Volunteer handbook that can be given to prospective members of the fire departments, explaining the benefits and requirements of being a volunteer;

f. Programs focusing on retention of members during their first four years of membership; and,

g. Programs focusing on the recruitment and retention of volunteer members to participate in the provision of fire and rescue services.

9-3 The Town is encouraged to financially support the volunteer recruitment and retention efforts through annual budgetary funding.

CHAPTER TEN
COOPERATIVE SERVICES PROVISION

This chapter explores and provides information on the various concepts of regionalization and applies those concepts to possible consolidation or regionalization opportunities for the Town of Southwest Ranches and other municipalities and fire and emergency services providers in Broward County.

This chapter includes discussion regarding typical opportunities for fire and emergency services cooperative services and regionalization, including functional consolidation. It also explores the full consolidation alternative; associated fiscal impact; efficiency and effectiveness opportunities; and the impact of consolidation on personnel. The questions of how consolidation affects personnel within the participating fire and EMS agencies and the municipality are also addressed.

In addition, this chapter addresses the impact of cooperative services and regionalization on those served: the taxpayers, residents, and business people within the planning area. These services delivery options are presented irrespective of the various potential fire services delivery models that may be utilized or considered. Due to differing terminology, this chapter utilizes "fire services delivery agency" to describe the name of various fire, rescue and emergency medical services delivery models.

POTENTIAL COOPERATIVE SERVICES BENEFITS

The focus of this review is to evaluate and assess opportunities for fire and EMS cooperation and consolidation in an effort to determine the potential for the following types of benefits:

1. Increased efficiency;
2. Improved effectiveness;
3. Seamless delivery of services;
4. Elimination of overlaps in positions;
5. Elimination of duplicate equipment;
6. Reduced response time for units dispatched;
7. Increased opportunity for staff specialization;
8. Upgrading recruit training programs;

9. Opportunity for increased promotional selectivity;
10. Increased promotional opportunity for personnel;
11. Potential revised perspective/outlook of personnel;
12. Enhanced or expanded services;
13. Improved safety of customers and services providers;
14. Reduced costs;
15. Improved incident command coverage;
16. Improved allocation and utilization of staffing;
17. Cost avoidance;
18. Coordination of planning;
19. Standardization of services and programs;
20. Improved and more effective training;
21. Potential improve ISO rating; and,
22. Impact on future state and federal grant funding.

Broadly speaking, the primary focus of this planning effort will be to assist in identifying **what is in the best interest of the customers being served by the fire and EMS services—the taxpayers, residents, property owners, and business owners/operators of the Town of Southwest Ranches**.

OPTIONAL LEVELS OF COOPERATIVE SERVICES

In the experience of the Study Team members, who have conducted more than 50 fire services cooperative services feasibility studies and implementation plans, there are a number of optional levels of cooperative services, including:

A. Basic regional functional consolidation;

B. Adjacent fire and EMS services functional consolidation;

C. Contractual cooperative services; and,

D. Full consolidation or merger.

These forms of cooperative services will be discussed in detail in the following sections of this chapter.

FUNCTIONAL CONSOLIDATION

Functional consolidation involves two or more fire and/or emergency medical services delivery agencies working together to either jointly or separately perform one or more functions in a fashion that shares resources and benefits. In other words, each fire services delivery agency still remains "whole" as a separate and independent entity, while allowing for the interchangeable use of equipment, facilities, and/or personnel throughout the organizations involved in the functional consolidation.

Functional consolidation can occur by one entity paying the other entity for services. Another approach in functional consolidation occurs when one fire services delivery agency agrees to perform a specific function if the other agency performs a function in exchange.

The purpose of functional consolidation is very similar to that of full consolidation:

1. Reduce duplication and redundancy;
2. Reduce the cost of providing services; and,
3. Improve levels of service without associated increased expenditures of tax funds.

Another reason why fire services delivery agencies and/or municipalities pursue functional consolidation is to take advantage of another fire services delivery agency's strengths, especially when one agency can provide certain services or perform certain functions that another may not be able to perform for fiscal or other reasons.

The remainder of this section reviews the various types of functional consolidation that has been implemented in one form or another in a number of other fire services delivery agencies throughout the United States.

Regional Functional Consolidation

A number of very basic and important functions that are typically the first functional areas to be considered for consolidation include: the functions of 9-1-1 call answering and dispatching; fire and EMS training facility and programs; and hazardous materials response and mitigation. These types of basic functions that are much easier to implement on a regional or county-wide basis are usually the first initiatives pursued related to fire services, cooperative services and consolidation.

Emergency Dispatching

The communications and dispatch function offers obvious opportunities for regionalization on the part of two or more fire services delivery agencies and/or police departments.

There is much work to be performed in creating consolidated communications and dispatch functions, as well as barriers to be eliminated. However, a large number of multiple fire services delivery agencies and/or police departments function at a significantly reduced cost through consolidated dispatching.

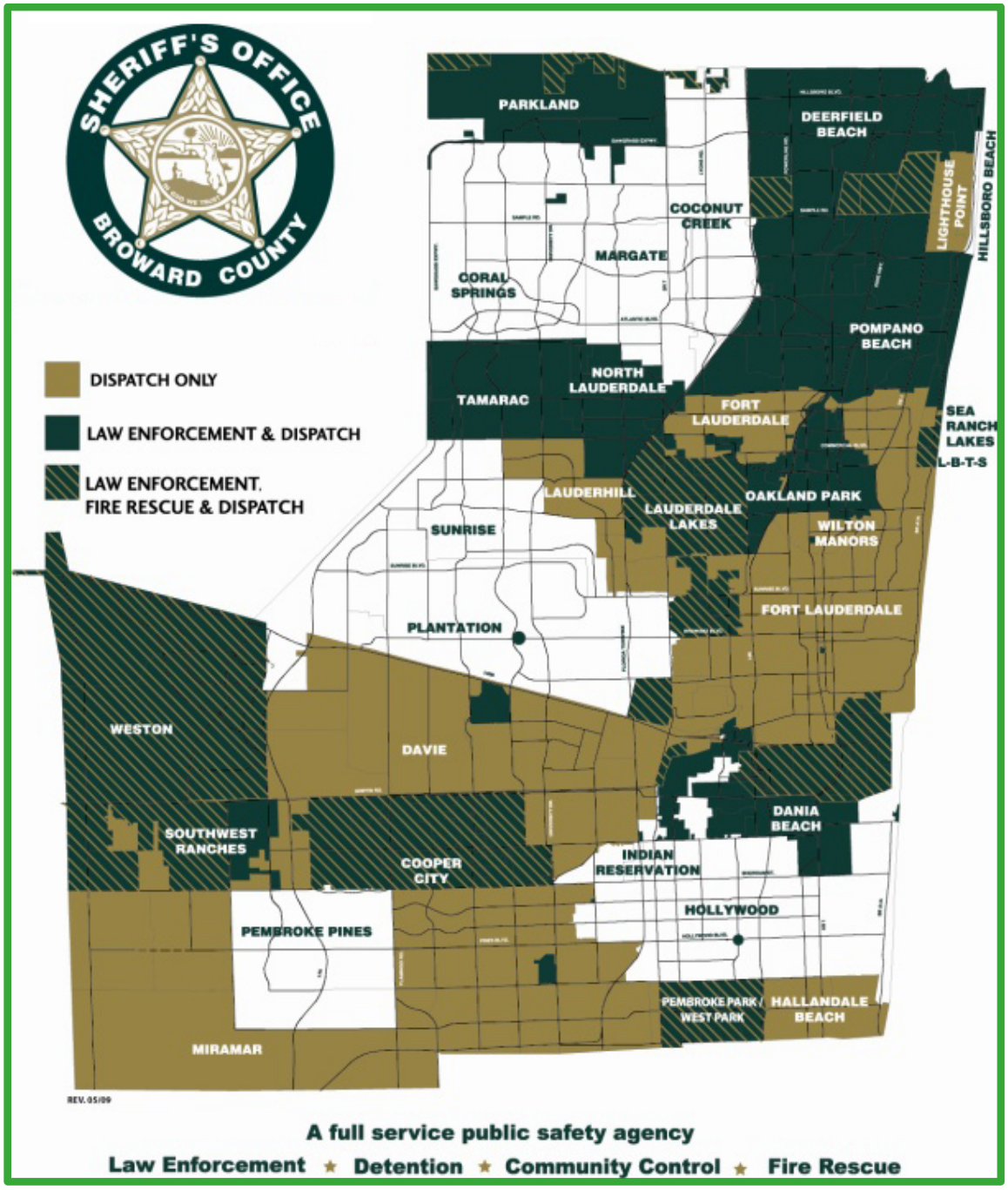
For a number of years, public safety agencies (police, fire, and emergency medical) have been served by a consolidated communications and dispatch centers and, thereby, gained significant benefits and lead the way in this type of consolidation in Florida. The Study Team has assessed a number of municipal emergency dispatch centers with separate police and fire dispatch operations that incur increased cost of operations due to the separate approach. Consolidated or regional emergency dispatch centers have proven to be more cost effective when properly staffed and equipped.

The contracted Davie Fire and Police Departments, Southwest Ranches Volunteer Fire Department, and other participating fire and EMS services delivery agencies in Broward County are dispatched by Broward County's Emergency Communications Center, which is part of the County Sheriff's Office (BSO). According to the BSO website:

> "*The Broward Sheriff's Office provides 9-1-1 intake, teletype and dispatch services for all unincorporated areas of Broward County, 23 law enforcement municipalities, 20 fire rescue municipalities and numerous special patrol areas including the Ft. Lauderdale-Hollywood International Airport, Port Everglades, BSO Department of Detention, Court Services and other areas.*
>
> *The division functions 24 hours a day, 7 days a week, 365 days a year and comprises 38 supervisors and nearly 400 specially trained public safety telecommunicators who process nearly 1 million emergency and 1.5 million non-emergency calls per year. In 2010, approximately 65.5% of all 9-1-1 calls placed in Broward County were answered by BSO operators at one of our 3 communications centers located at the Ron Cochran Public Safety Complex, the Fort Lauderdale Police Department and the Pompano Beach District XI Station.*

The Regional Communications Division has been recognized as an accredited dispatch center by the Commission on Law Enforcement Agencies (CALEA) and the National Academy of Emergency Dispatch (NAED)."

Figure 10.1
BROWARD COUNTY SHERIFF'S OFFICE DISPATCH COVERAGE



Source: BSO website.
Note: The Town of Davie now provides law enforcement services to the Town of Southwest Ranches.

> "*Regional Communications E911 operators provide Emergency Medical Dispatch (EMD) services as a first responder for all medical calls for service. All call takers are specifically trained to relay important medical instructions in life-threatening situations. These instructions include CPR, abdominal thrust maneuver, and labor/delivery protocols.*"

The cost savings benefits to the participating municipalities and fire and EMS agencies are likely substantial. Further, the operations benefits are also likely substantial due to improved communications interoperability and incident unit command and control. All Southwest Ranches' public safety services delivery agencies are dispatched by the BSO regional dispatch center.

Training Facility & Programs

The provision of fire and EMS training facilities to support the broad range of certification and non-certification basic and advanced fire and EMS courses and specialty training to meet local, state and national standards and related requirements is very costly to implement and operate for a single municipality and fire and EMS department. Therefore, progressive regions and counties plan and implement appropriate fire and EMS training facilities, including classrooms, indoor and outdoor simulators to support operations, administrative and specialty training and certification programs.

Reportedly, fire, rescue, and EMS training and accreditation are readily available from a number of sources, including Broward Fire Academy and Broward College.

Hazardous Materials Service Provision

Another basic regional and/or county-wide functional consolidation initiative involves specialty services that can provide mutual benefits for fire services delivery agencies working together with the support of a central staff. Several of the special services are:

1. Hazmat team coverage;
2. Underwater rescue team coverage;
3. Building collapse/underground rescue team coverage;
4. Personnel/manpower squads; and,
5. Technical/heavy duty rescue.

Many such services can be performed by various fire services delivery agencies and coalitions on a region-wide basis for the mutual benefit of all of the regional fire services delivery agencies involved. It would be cost-prohibitive and impractical for every fire services delivery agency to be self-sufficient in all these types of specialty services areas.

For the Southwest Ranches and Davie area the Davie Fire Department (DFD) provides forms of functional consolidation through their Dive, Technical Rescue Team (TRT) and Large Animal Rescue Teams.

Additionally, for hazardous material response the BSO responds to related incidents as described on the BSO website as follows:

> "*The Broward Sheriff's Office Hazardous Materials (Haz-Mat) Team responds to the accidental or intentional release of dangerous biological, chemical or nuclear agents into the environment. Typically, the team responds to spills of liquid and gaseous agents resulting from container failure, transportation accidents or human error and most frequently deals with fuel spills and propane gas leaks.*
>
> *BSO's Hazardous Materials (Haz-Mat) Team responds to the accidental or intentional release of dangerous biological, chemical or nuclear agents into the environment. Typically, the team responds to spills of liquid and gaseous agents resulting from container failure, collisions and human error and most frequently deals with fuel spills and propane and other gas leaks.*
>
> *Formed in 1986, the Haz-Mat team is based at Station 17 in Ft. Lauderdale. Team members must complete 160 hours of special training and be certified as hazardous materials technicians before applying for assignment to the team.*
>
> *In recent years, new emphasis has been placed on the unit's response to acts of domestic terrorism including the intentional release of chemical and biological agents such as nerve gas and anthrax. Additional training, drills and mock events afford team members with detection, neutralization, medical treatment and large-scale civilian evacuation experience.*
>
> *The Haz-Mat Team operates with a specially equipped tractor-trailer containing computerized detection and monitoring equipment, communications systems, a mobile weather station, protective clothing and remedial supplies.*"

Functional Consolidation of Adjacent Fire Services

There are a number of forms of functional consolidation that may be planned and implemented by fire services delivery agencies that are adjacent to each other. This section addresses a few of those additional functions that may be undertaken as functional consolidation goals between neighboring fire and EMS departments and their respective municipalities.

Automatic Mutual Aid

Automatic mutual aid involves dispatching the closest available type of apparatus (engine, ladder, or heavy rescue) that is needed based on the type of incident and the availability of the requesting municipality/fire services department. A key determinate of the level of service provided to the public relates to providing the needed resources to the emergency scene in as short as possible response time. When resources are needed from an adjacent fire department assuring the dispatch of the closest available needed resource helps to assure the goal of having the lowest possible response time is most easily attainable.

The Davie Fire Department (under contract) and the Southwest Ranches Volunteer Fire Department utilize a selective form of mutual aid. The result is that the closest available proper type of apparatus is not requested, which results in response times of units coming into the Town being measurably longer and, therefore, the quality of service delivered is degraded. There were a number of "reasons" given to the Study Team why automatic mutual aid is not used at this time.

Although some of these "reasons" may be true at any given time, these should not be the basis for the Southwest Ranches citizens receiving a lower level of service than could otherwise be provided. These concerns should be identified and every effort made to find solutions to these issues—perceived or actual—by working with potential mutual aid partner fire departments to resolve or accept the matter of concern in order to attain the goal of having the lowest possible response time for incoming mutual aid units.

Fire Prevention Functions

For all jurisdictions, the building inspection and code enforcement responsibilities consume a great deal of time and are very technical functional areas. Although operating

under the same applicable State codes and protocols, the various fire services delivery agencies perform these functions in different ways. In addition, where code interpretation is necessary, codes can easily be interpreted differently from one area of the municipality to the other.

Regionalizing certain or all aspects of the fire prevention function resource commitments improves the level of service through consistant levels of service. Similar approaches are taken to the inspection of buildings as interpretation of State codes is applied.

Provision of Incident Command

It is essential that command-level coverage, provided for the fire services delivery agencies, be on a 24-hour-per-day basis. A major function that is essential to the success of every emergency incident is command supervision. This presence assures that all apparatus and personnel perform their functions and carry out the necessary tactics and strategy. Without command supervision to assure coordination and communication, potential, safety issues develop. Command coverage does not stop at jurisdictional boundaries.

The concepts of command should be similar from one agency to another; therefore, functional consolidation in terms of development of shared, scheduled command duty is mutually beneficial to fire services delivery agencies. It can reduce the number of command officers necessary to perform the function. It can reduce the stress on current command officers and the number of hours that they are required to work because of an inadequate number of command officers in the fire services delivery agency. Moreover, gaps in command coverage (day, night, weekend) can be covered by command officer/s from an on-duty or on-call adjacent agency.

Standard Incident Operating Procedures

A large number of emergency incident operating procedures are essential to the efficiency and effectiveness of fire and EMS crews, particularly during emergencies. It is important to maintain a standard approach adopted for the various types of procedures to assure cohesive performance. These same types of procedures exist in many fire services delivery agencies. If firefighters from different fire services delivery agencies are expected to work together successfully, they need to be following the same operating procedures in order to assure optimum success.

Mutually adopting the same incident operating procedures is as simple as working together toward their development and implementation. Subsequent to adoption, the procedures should be included in the departments' in-service training programs to assure that all personnel are fully aware of and follow the adopted procedures.

Apparatus Dispatch Assignments

Apparatus assignments refer to the number and type of apparatus dispatched on various types of incidents. Adopting the same apparatus assignments among multiple fire services delivery agencies goes hand-in-hand with the adoption of incident operating procedures.

Incident operating procedures are often based on a certain expectation regarding the number and type of apparatus to respond on specific types of incidents. With the consolidation of incident operating procedures, the apparatus assignments should also be consistent.

Availability of Reserve Apparatus

Every fire services delivery agency needs available apparatus to back up its primary units. However, the tendency is for fire services delivery agencies to view their reserve apparatus within the confines of their jurisdictional boundaries. The end result is, when viewed collectively, more apparatus is being maintained in reserve than would otherwise be necessary if the fire services delivery agencies planned and used reserve apparatus in a joint manner.

Fire apparatus is very expensive in terms of maintenance, upkeep, and replacement. The deletion of one unit can present significant short- and long-term savings. In addition, there is less apparatus to clean and maintain in workable condition by on-duty firefighters.

Apparatus Type

The primary types of apparatus suggested for functional consolidation in this section are pumpers, ladder trucks, rescues and other specialty equipment. The Study Team noted during its review of the available apparatus (both in the departments involved in the Study, as well as surrounding fire services delivery agencies) that each department attempts to have a full complement of apparatus types. This results in fire services delivery agencies having both one or more pumpers and one or more trucks and rescues

in their effort to provide a total cross-section of services within their own geographic boundaries.

Each of these units provides a specific type of service. That service can be provided equally well from a neighboring agency. Therefore, functional consolidation of types of apparatus would require fire services delivery agencies to review the types of apparatus needed and determine which units are required at every station and which ones can be provided from selected stations based on the agreed joint planning effort.

Major savings can be attained, both in terms of apparatus maintenance, upkeep and replacement as well as staffing with this type of joint planning effort. It should be noted that functional consolidation in the type of apparatus operated from different stations is supported by implementing dual response-type mutual aid, adopting standard apparatus assignment, and incident operating procedures.

Cooperative Provision of Training

Many fire services delivery agencies have one or more personnel assigned to the training function, either on a collateral duty basis or a full-time basis. Training activities are generally not dissimilar; however, if not coordinated in terms of the performance of joint training activities on a regular basis, the implementation of inconsistent training programs is more likely to occur.

The development and delivery of a training program is very expensive. A significant amount of time, effort and funding are required to deliver quality training. Developing and delivering training to a large number of personnel provides opportunities for cost efficiency.

With collective consolidation training functions the same or better level of service can be provided to each jurisdiction on a more cooperative basis. It is through concentration of training staff resources that a higher level of training of officers becomes possible.

Notably, as a form of cooperative services, the Davie Fire Department provides a substantial amount of fire and EMS training under the contract between the two Towns.

Pre-Fire Plan Development and Use

Progressive fire services delivery agencies develop detailed information regarding the design, construction and contents of target fire hazards within their area of responsibility. These pre-fire plans become the basis for resource allocation and fire attack decisions on major incidents. The consolidation of this function among several fire services delivery agencies insures that this information is readily available to all responding fire unit. The end result is improved operations and safety.

Fire Safety Education

As with the training function, fire safety education is more effective when it is performed consistently on a larger geographic basis. Multiple fire services delivery agencies would not be competing for the same media coverage or for public attention. Fire safety education programs are more successful if they are conducted in a planned large geographic area with the same message delivered in a concentrated manner over a defined period of time.

Consolidation of this function among adjoining fire services delivery agencies, with a focus on what messages will be delivered during specific times of the year, would have a stronger impact on the public. In addition, funds expended on public education media (such as slide/tape programs, movies, etc.) could have wider use, alleviating the need for two or more of the fire services delivery agencies to purchase the same fire safety education materials. Duplication and repetition are expensive practices in local governments.

Joint Purchasing in Quantity

It is a proven fact that items purchased in quantity offer potential savings. All fire services delivery agencies purchase similar items such as station maintenance materials, clothing and uniforms, protective clothing, office supplies, and other essential items. Fire services delivery agencies may attain significant savings through cooperative quantity purchasing.

CONTRACTUAL COOPERATIVE SERVICES

Through the years, the Study Team has observed and recommended that many municipalities provide various municipal services, including fire and EMS services, to

other municipalities on a contractual basis. A number of examples of fire and EMS services that are provided in this manner include the following:

1. Fire code enforcement inspections;
2. New building fire plans review;
3. Availability of reserve apparatus;
4. Fire and EMS training, including in-service drills and other training;
5. Emergency medical transport services;
6. Provision of command supervision on incidents;
7. Engine and ladder incident response; and,
8. Specialty apparatus incident response, e.g., heavy rescue squad.

The benefit to the receiving municipality could be the provision of a service too costly for it to otherwise fund and provide. The benefit to the providing municipality could be provision of revenue to offset the cost of providing its services or the opportunity to fund a costly service it might not otherwise have provided due to cost.

Of course, contractual services arrangements could be on multiple municipality (three or more) contractual basis involving a providing municipality offering services to several other municipalities. The Study Team has observed many situations where such contractual service provision has been substantially beneficial to all involved municipalities.

The current contract between the Towns of Davie and Southwest Ranches for the Davie Fire Department to provide substantial fire and EMS services to Southwest Ranches is an excellent example of cooperative services delivery via contract. The reader should recollect that Chapter Seven of this Study Report discussed contract services provision, as currently implemented by Southwest Ranches.

FULL FIRE SERVICES DELIVERY AGENCY CONSOLIDATION

The difference between functional consolidation and full consolidation is that full consolidation results in the formation of a single fire services delivery agency organization. Creating one fully consolidated fire services delivery agency would bring about the following:

- One fire services delivery agency;
- One employer;

- One set of rules and regulations and/or standard operating procedures;
- One personnel management system;
- One union contract;
- One integrated chain-of-command; and,
- One work schedule.

Fiscal Impact — Savings

The potential for fiscal savings from consolidation is very high. The primary areas for savings involve the allocation of stations, personnel, and apparatus. Below is a summary of areas for potential savings:

- Reduction in annual operation and maintenance costs of duplicate fire stations;
- Increase in revenue from sale of buildings and land when fire stations are closed;
- Reduction in duplicate apparatus replacement costs;
- Reduction in annual apparatus operating and maintenance expense;
- Increase in revenue from sale of excess apparatus; and,
- Reduction in annual salaries and wages for duplicate personnel.

Another aspect of fiscal impact is the ability to utilize personnel on a broader basis. The cross-use of personnel by having the ability to detail firefighters and officers from one station to another on a day-to-day basis provides for more consistent apparatus staffing levels and potential for reduced overtime costs.

At the present time, the potential participating fire services delivery agencies must negotiate a number of labor contracts on a periodic basis. Negotiating labor contracts is expensive, particularly if any aspects of those negotiations become litigated. The Study Team is not in a position at this time to estimate the cost savings by reducing the number of contracts to be negotiated. However, based on informal discussions, measurable cost savings are likely to be attained in this area.

Through the years, the Study Team has conducted feasibility plans and provided implementation planning services involving successful fire department consolidations in other states. Two such successes include the following currently operating fire departments:

1. North Hudson Regional Fire and Rescue Department, Hudson County, New Jersey, the third largest fire department in the State of New Jersey; and,

2. York United Fire and Rescue, York, Pennsylvania, the largest consolidated fire and EMS department in the Commonwealth of Pennsylvania that has expanded and provides contractual services since original establishment.

These and other successful consolidation initiatives are currently providing improved fire and EMS services in a more cost effective manner.

IT DOES NOT HAVE TO BE "ALL OR NOTHING"

In reviewing past cooperative and consolidation initiatives it became clear to the Study Team that the primary focus of many efforts has been the pursuit of full consolidation. Full consolidation is clearly a goal to be pursued, but only if appropriate for the municipality/s involved at the time. It could be considered as an initial or long-term goal, however, it is important for the reader to keep in mind that there are many other forms of cooperative services that should be considered and could have substantial benefits to the participating municipalities, fire departments, services providers, taxpayers and services recipients or customers. All potential options for cooperative services should be considered. It should not be an "all or nothing" approach. Initially, it may be beneficial to consider and implement what could be considered "low hanging fruit" in the pursuit of the services delivery improvements and cost savings from the implementation of cooperative services.

FIRE SERVICES IMPROVEMENT BENEFITS

The national experience regarding regional fire services delivery indicates that major improvements in service to the public, or internal efficiencies that indirectly have a positive impact on the public, may be attained. Several key improvements typically include:

1. Improved fireground command and control communication;
2. Improved fireground operations by following the same standard operating procedures and working together as a team;
3. Reduced apparatus maintenance and upkeep required on the part of on-duty firefighters;
4. Reduced response times of apparatus, thus providing improved emergency service to incident scenes by dispatching the closest unit via mutual aid;

5. Improved customer and firefighter safety; and,
6. Improved dispatch function through improved incident command and control.

SUMMARY

In reviewing the concept of fire, rescue, and/or emergency dispatch consolidation or cooperative servicers, as applied to the Town of Southwest Ranches and its fire and/or emergency medical services, it is clear that many important steps have been taken and still need to be taken by the area towns/cities and the County and the other participating services delivery agencies. The most important decision/s relate to the determination to consider and potentially implement an appropriate form/s of consolidation or cooperative services.

Nationally, the study and implementation of various forms of fire, rescue, and dispatch consolidation or cooperative services has clearly been the trend, particularly in the current difficult municipal fiscal climate. Likewise, discussion, study, and implementation of consolidation and cooperative services of these and other important municipal services in Florida and Broward County is viewed by many as a potential means for appropriate municipalities, such as the Southwest Ranches area municipalities, to provide improved services while at the same time gaining cost savings and efficiencies.

Based on the national experience and that of the Study Team, it is clear that there are significant service improvement benefits, cost reduction, and avoidance opportunities that would benefit the taxpayers of the Town of Southwest Ranches and adjacent municipalities resulting from implementation of fire, rescue, and/or emergency services functional and/or full consolidation. Further, it is also clear that there are important benefits to be provided to the involved municipal services providers resulting from implementation of appropriate forms of cooperative services and consolidation, not the least of which is improved safety and delivery of services.

OPTIONS AND RECOMMENDATIONS

10-1 The fire chiefs in the region are encouraged to implement mutual aid training as an integral and substantive part of the fire services training programs.

10-2 The Town should consider encouraging the full implementation of closest available automatic mutual aid between all area fire departments, as future conditions allow.

10-3 The Town and fire chiefs are encouraged to establish a cooperative services implementation task force in cooperation with adjacent municipalities and fire and EMS services delivery agencies to upgrade services delivery to the public through expansion of cooperative fire, rescue, and EMS delivery.

CHAPTER ELEVEN
IMPLEMENTATION PLAN

This chapter provides a suggested implementation plan for the Town of Southwest Ranches to consider. The Town Council should make the final decision on recommendations, time lines, and fiscal outlays after gaining input from fire administration and stakeholders.

To frame the findings and advisory options and recommendations, the Study Team members have drawn on their experiences as practitioners in fire departments and as fire and emergency medical service consultants for more than 200 fire/EMS agencies.

REVIEW OF REPORT

Although there may be calls for quick action on the recommendations, the Study Team suggests a three-month period for review of the findings and recommendations. One cannot expect to review several hundred pages of detailed and technical material and immediately decide on which suggestions to consider and the timing for their implementation. Moreover, in considering changes in the delivery of public safety services, incremental steps are likely necessary. As part of the review, the Town Council should provide an opportunity for the fire chief, firefighters, and officers to give their input relative to any observations, conclusions, and recommendations.

TIMING

This Implementation Plan should be considered as a **strategic planning tool** for use over the next three to five years. Additional issues may need consideration in the future. Therefore, the Plan should be used as a flexible guide for decisions relative to the organization, management, and provision of fire/EMS services. Figure 11.1 is a suggested timeline for implementation.

IMPLEMENTATION OBSTACLES

There may be disagreement and criticism of a number of the recommendations contained in this Study. A number of the recommendations are suggestions made to the Study Team by Town officials, members of the SRVFRD at all ranks, and stakeholders.

FISCAL IMPACTS

Fiscal impact will vary based on which, if any, options and recommendations are implemented by the Town of Southwest Ranches. The primary areas related to costs and savings (cost avoidance) include:

1. Upgrading the SRVFRD fire station facilities;
2. Upgrading the fire EMS apparatus fleet; and,
3. Implementing training program upgrades.

Once the Town decides on a specific course, internal finance personnel should be consulted to assess the fiscal impacts of any changes.

SUGGESTED FUTURE SOUTHWEST RANCHES MODEL

The primary scope of services of this Fire Operational Study involved providing the Town with a description and related options for consideration of the various fire and EMS services delivery options potentially available to the Town. In each of the optional models reviewed fiscal impacts were estimated for the Town's information. The information presented illustrated that substantial increases in the cost of providing fire and EMS services would be needed to implement most of the alternatives presented.

In concluding the work on this project it seems clear to the Study Team that only one of the optional models is likely to be affordable for the Town. This is apparent given the limited commercial development and the relatively small population of the Town, and that as a result the Municipal Fire Assessment Rate for Southwest Ranches is the highest in Broward County.

The budgeted funding level for the provision of fire and EMS services is currently nearly $3.1 million. The Study Team was advised that this budget is not likely to be increased significantly in the near future. Given that projection and the available optional services delivery models it is suggested that the Town consider utilizing a services delivery model with the following primary characteristics:

1. Maintaining the current contractual approach for services by the Davie Fire Department as a progressive approach to cooperative services delivery;
2. Negotiating with the Town of Davie for the provision of two additional firefighter/paramedic staff members in order to properly staff a pumper and rescue ambulance unit 24/7 at three (3) and two (2), respectively;

3. Maintaining and fully funding the SRVFRD as a true volunteer fire department providing the original services delivery approach in support of the contract fire and EMS services provider; and,
4. Phasing out the stipend and salary expenditures over an appropriate period of time.

RETURNS ON INVESTMENT

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. Often they are mutually exclusive.

A number of the anticipated returns on investment for the operations and management recommendations in this Study include:

1. Increased pride in the organization;
2. Improved cost effective service through automatic mutual aid, as future conditions allow;
3. Improved morale;
4. Improved accountability; and,
5. Improved level of services.

While a suggested timeline is provided as a guide for consideration of changes, the Town Council should make the final decisions relative to timing.

UPDATING THE PLAN

The Town of Southwest Ranches and the Southwest Ranches Volunteer Fire-Rescue Department are encouraged to update this Plan each year. The update should include progress, obstacles, fiscal impacts, and anticipated outcomes.

CUSTOMER ORIENTATION

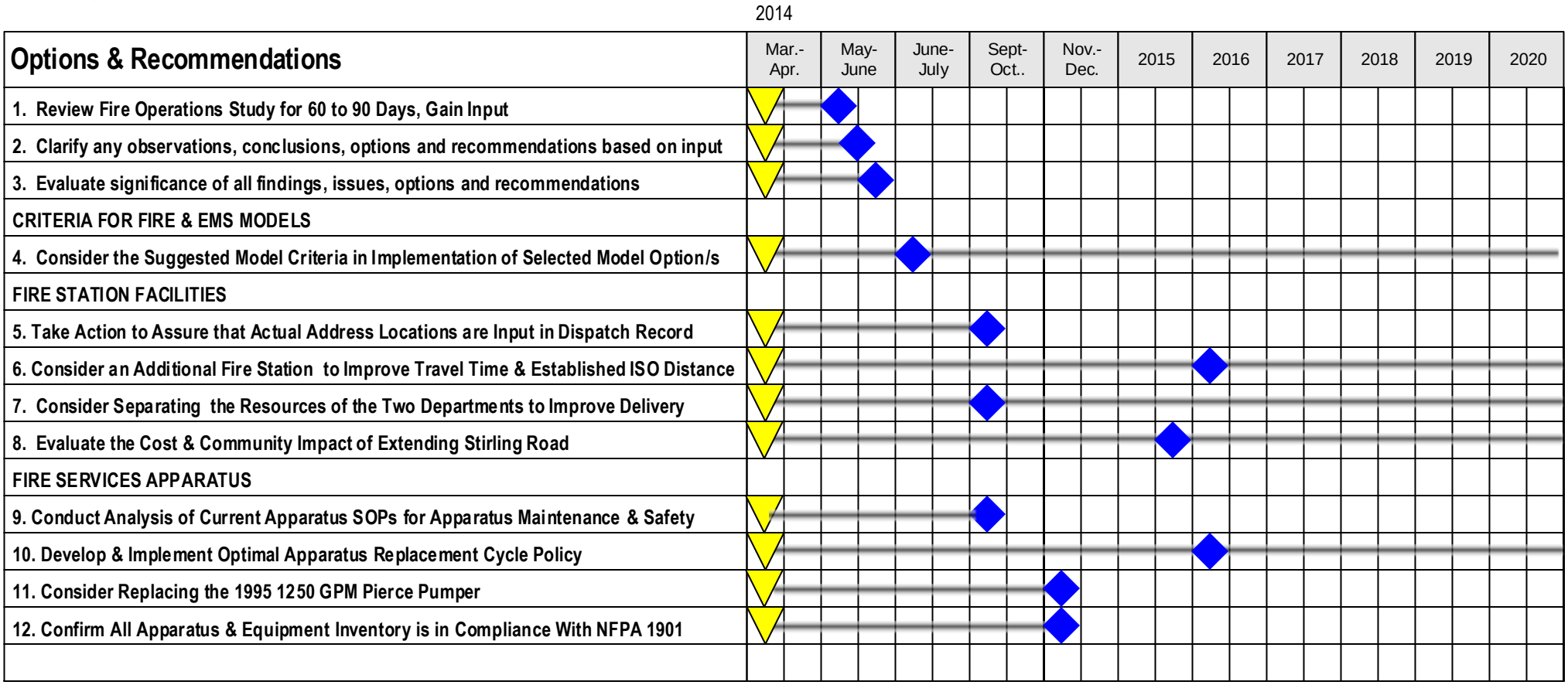
In the judgment of the Study Team, the Town of Southwest Ranches is encouraged to embark on a course that will enhance the delivery of fire protection and EMS services. All decisions should be based on what is best for the customer in the Town of Southwest Ranches.

Figure 11.1

Fire Operations Study

Suggested Timeline

Page One of Two



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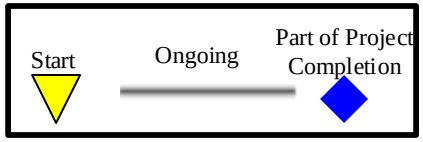

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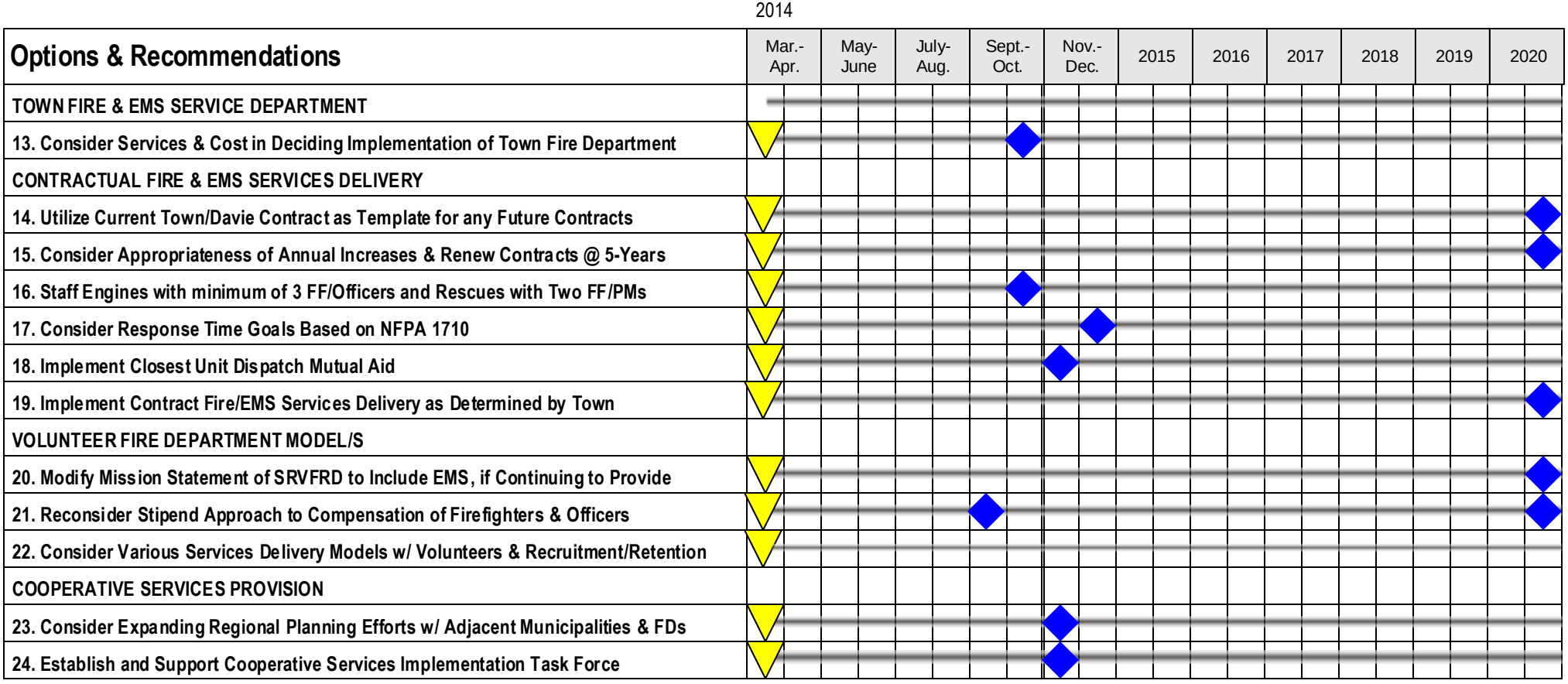
Figure 11.1

Fire Operations Study

Suggested Timeline

Page Two of Two



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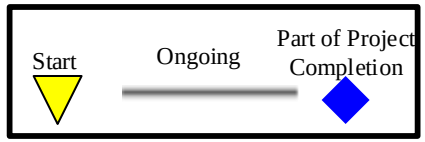

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CHAPTER TWELVE
OPTIONS AND RECOMMENDATIONS

Options and Recommendations — Fire & EMS Model Criteria

3-1 The Town should consider utilizing the suggested model criteria in the implementation of the selected fire services delivery model/s.

Options and Recommendations — Fire & EMS Facility Locations

4-1 The Town should take action to assure that actual address locations are input into the dispatch record to facilitate future analysis completion with less difficulty.

4-2 The Town should consider an additional fire station in order to improve travel time and ISO distance coverage.

4-3 With the current co-located contract and Southwest Ranches Volunteer Fire-Rescue Department fire and EMS apparatus and staffing, the Town should consider separating the resources of the two fire departments to improve both.

Options and Recommendations — Fire Services Apparatus

5-1 The Town and Fire Chief should conduct an analysis of its current standard operating procedures as they relate to apparatus and equipment acquisition, maintenance and associated safety considerations as soon as practical

5-2 The Town and Fire Chief should develop and implement formal, optimal replacement cycle policies for each of the key types of apparatus in the fleet (pumper/s, utility, and car/s) using a recognized life-cycle cost analysis technique.

5-3 The 1995 Pierce 1250 GPM pumper is approaching 20 years of active service and should be replaced, if the Town determines to continue providing a form of its own fire protection.

5-4 The Fire Chief should confirm all automotive fire apparatus equipment inventory is in compliance with NFPA 1901, Standard for Automotive Fire Apparatus.

Options and Recommendations — Southwest Ranch Fire & EMS Department

6-1 The Town is encouraged to consider the services delivery and related estimated costs associated with the possible standalone fully-staffed Southwest Ranches Fire and EMS Department model options outlined to determine appropriateness and feasibility for the Town.

6-2 If the Town determines to implement the standalone SRFED model the development of a detailed implementation plan should be initiated including details relating to staffing, fire stations, and apparatus and related budget and timeline for implementation.

Options and Recommendations — Contractual Fire & EMS Delivery Model

7-1 Utilize the current Davie–Southwest Ranches contract as a model template for future contracts.

7-2 The annual percentage increase to be paid should be reviewed for appropriateness giving consideration to the economic climate.

7-3 Future contracts should include the provision to be renewable every five years.

7-4 Future staffing should be three firefighters and officers for pumpers and two for rescues.

7-5 Response-time goals should be based on NFPA 1710.

7-6 Services delivery should be improved by implementing closest unit dispatch mutual aid, as conditions allow.

7-7 The model criteria outlined in Chapter Three of this Study Report should be utilized.

7-8 Periodically an operations contract audit should be conducted to verify contract compliance and identify means for improvement in the contract.

Options and Recommendations — Volunteer Fire Department Models

8-1 The SRVFRD should modify its Mission Statement as appropriate.

8-2 The Town Council should consider the approach to the stipend payments to SRVFRD firefighters and officers.

8-3 The Fire Chief should place a high priority on updating policies, procedures, and guidelines of the Fire Department.

8-4 The Town Council should consider the various fire and EMS services delivery models and implement the appropriate option/s in the best interest of the Town of Southwest Ranches, taking into consideration funding and services to be provided.

Options and Recommendations — Volunteer Recruitment and Retention

9-1 Officials are encouraged to place periodic articles in local newspapers regarding activities of the volunteer component of the fire and rescue service.

9-2 A comprehensive volunteer recruitment and retention program should be developed. The program should be appropriately funded and include:

a. Recommendations for volunteer retention programs based on input received from exit interview or forms;

b. Budget recommendation for the recruitment and retention programs;

c. Recommendations for volunteer recruitment programs;

d. Volunteer handbook that can be given to prospective members of the fire departments, explaining the benefits and requirements of being a volunteer;

e. Programs focusing on retention of members during their first four years of membership; and,

f. Programs focusing on the recruitment and retention of volunteer members to participate in the provision of fire and rescue services.

9-3 The Town is encouraged to financially support the volunteer recruitment and retention efforts through annual budgetary funding.

Options and Recommendations — Cooperative Services Provision

10-1 The fire chiefs in the region are encouraged to implement mutual aid training as an integral and substantive part of the fire services training programs.

10-2 The Town should consider encouraging the full implementation of closest available automatic mutual aid between all area fire departments, as circumstances allow.

10-3 The Town and fire chiefs are encouraged to establish a cooperative services implementation task force in cooperation with adjacent municipalities and fire and EMS services delivery agencies to upgrade services delivery to the public through expansion of cooperative fire, rescue, and EMS delivery.

10-4 Given existing fiscal constraint, it is suggested that the Town consider utilizing a services delivery model with the following primary characteristics:

a. Maintaining the current contractual approach for services by the Davie Fire Department as a progressive approach to cooperative services delivery;
b. Negotiating with the Town of Davie for the provision of two additional firefighter/paramedic staff members in order to properly staff a pumper and rescue ambulance unit 24/7 at three (3) and two (2), respectively;
c. Maintaining and fully funding the SRVFRD as a true volunteer fire department providing the original services delivery approach in support of the contract fire and EMS services provider; and,
d. Phasing out the stipend and salary expenditures over an appropriate period of time.

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