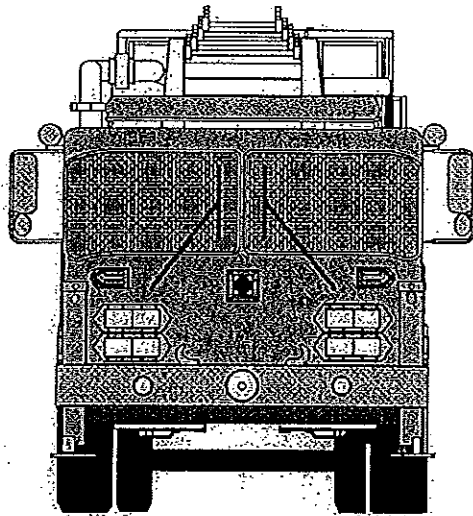


Hanover Township Fire District #2 Fire Protection Study 2004



Harry R. Carter, Ph.D., L.L.C.
Post Office Box 100
Adelphia, New Jersey 07710

Table of Contents

| | |
|--|-------|
| Executive Summary | Exe-1 |
| Organization and Purpose of a Fire Department | 1-1 |
| Population and Demographic Characteristics | 2-1 |
| The Whippany Fire Department | 3-1 |
| Potential Incidents Which May Occur in Hanover Township Fire District #Two..... | 4-1 |
| Hanover Township District #Two Risk Assessment | 5-1 |
| Station Location Issues | 6-1 |
| Staffing and Personnel Issues | 7-1 |
| Final Recommendations | 8-1 |
| Bibliography | Bib-1 |

Executive Summary

I have spent the past several months studying a number of issues facing the **Hanover Township Fire District #2**. As a result of my research, visits to the community and interviews, I offer the following as those critical issues which need to be addressed.

1. Personnel issues as discussed in recommendations
2. Increase in daytime staff for fire department operations
3. Fire station location issues

The personnel issue must be addressed. It has provided a negative distraction from the normal operations of the department. Great care must be exercised in this extremely sensitive matter.

The daytime staffing issue is also quite important. The ability to meet the needs of the customer is always a strong impact upon any public sector venture. In your case, it also presents the potential for possible legal issues in the area of effective and efficient delivery of emergency services.

It is my opinion that the Board of Fire Commissioners begin the process for hiring career staff. Hanover Township remains a community with the potential for growth, one where the population is changing. Your pool of potential volunteers is

changing. A great many of your citizens commute to work in other communities. You must break with the past and come to grips with your new operational reality.

There are other issues addressed in the body of the report. Each has an impact and must be addressed if you are to improve the overall operations of your fire and rescue organizations. The full list of recommendations is contained within Section Eight.

I would urge you to pay close heed to the need for the changes I have written in my report. Your district is at a critical cross road. You need to move toward the future with an eye to the need for continuing change.

Let me express my thanks to those members of the board of fire commissioners who provided valuable insight and assistance to me over the course of this project. I would also like to thank Chief Joseph Cortright and his staff for the support provided to me during the research for, and creation of this report.

Section One - Organization and Purpose of a Fire Department

People in every community stand exposed to a wide range of risks. Like citizens everywhere, those folks living within the area protected by the forces of the **Hanover Township Fire District #2** have a right to expect a reasonable level of fire protection. However, we must remember that fire protection comes at a cost. This cost may be monetary in nature or it may be expressed in terms of the efforts of dedicated volunteer firefighters serving their fellow citizens. A critical part of my study involves an assessment of possible future needs in the areas of fire department staffing, equipment, procedures, fire prevention activities, and facility-related needs.

What is a fire department? "...Simply stated, (it) is a group of fire officers, firefighters, and emergency responders working together to achieve a common objective(s)." (Barr and Eversole, p. 864) Protecting citizens in a community is the primary objective toward which a fire department should strive. The **Whippany Fire Company** has accepted both the legal and moral responsibility for fire protection services within the Whippany section of **Hanover Township**. Formed in 1915, this agency now receives fiscal and logistical support through a duly authorized special purpose district, as authorized by the laws of the State of New Jersey. This is the fire district that was created with the permission of the citizens of the area now protected by the fire

company. It continues to be the duty of these two intertwined entities to provide a level of emergency services commensurate with the codes, standards and accepted professional practices in the field of municipal fire protection.

The members of the fire department are obliged to perform their duties to the best of their ability, subject to the fiscal resources provided by the citizens living within Fire District #2 in Hanover Township.

Society has long recognized the need to provide for the suppression of fire as a function of civilized society. The public has come to expect this service to be provided by someone. Usually it comes from some level of local government. In order for us to better understand what a fire department is, let us turn to the nationally - recognized codes and standards. These will tell us what services a fire department is expected to provide.

The Purpose of a Fire Department

A fire department shall have programs, procedures, and organizations for preventing the outbreak of fires in the community and for minimizing the danger to persons and damage to property caused by fires that do occur. The fire department also shall carryout other compatible emergency services as mandated.
(NFPA 1201, p.1201-5)

According to the **National Fire Protection Association**, a modern fire department might be expected to provide such services as:

- A. **Fire Prevention and Risk Reduction:** Every fire department shall have a program under which its personnel regularly examine every part of the community in which a significant fire problem could develop. Personnel shall inspect real property in the community, with an emphasis on those occupancies identified by a risk schedule as subject to a high level of hazard to life and property.
- B. **Fire Prevention and Inspection Programs:** The best way to correct fire safety mistakes that might lead to a fire are to engineer them out of a building before it is built and inspect buildings to insure that they are being maintained in a fire-safe manner.
- C. **Public Fire Safety Education:** Programs must be delivered to the various user populations in a community which will equip these people with the essential life-safety skills to avoid exposure to a fire, improve their chances of escaping from a fire or minimize the consequences of their exposure to fire.
- D. **Emergency Medical Services:** Over the past two decades, fire departments all across the United States have come to be recognized as the service best positioned to provide emergency medical services to their communities. An adequate capability must be maintained to allow instantaneous delivery of this critical service on a 24- hour-per-day basis.

- E. **General Emergency Response Capability:** A capability must be provided to assist a community during times of natural disaster, or imminent emergency. The fire department has historically been a pillar of support in this important area.
- F. **Community Consultation:** An additional service of the fire department should be to consult with local people and groups who have fire-related problems, questions and requirements. People look to the fire service to answer their questions and allay their fears.

In order to focus their efforts, it is important for fire departments to develop a **Mission Statement** that explains the reason for its existence. It must then work to build an organizational structure to fulfill all of the operational areas intended to meet the community's need for fire protection.

You can see from the **NFPA** recommendations listed above that EMS is considered a part of the standard service delivery package for a progressive fire department. Since a separate agency provides this service in your area, we are recommending that any existing fire company/first aid squad relationships be maintained, and strengthened wherever possible. This will allow for an improved level service delivery between the organizations.

However, you have assumed the responsibility for the fire prevention, inspection, and public fire safety education

components of your municipal fire protection system. You have provided a full-time career staff to provide these services in your community. This has also allowed you to supplement your response forces in the fire suppression and vehicle rescue/extrication arenas. We recommend that this relationship be maintained and enhanced where possible.

In order to provide the proper focus for any organization, that group must understand why they exist. They should understand their mission statement and provide services in accordance with their statement. I would offer the following for your consideration.

Mission Statement

Hanover Township Fire District #2 and the Whippany Fire Company were formed to provide a critical service to their community. They will strive to provide effective fire protection and vehicular extrication services to the citizens of their community. They will endeavor to afford taxpayers, residents and visitors quality fire protection at all times and in all areas of the Township. The citizen will serve as the focus of the fire protection efforts in your community.

We are suggesting that you consider expanding the integrated system you now have to include a slightly greater combination of volunteer and career personnel working within

predetermined performance standards and protocols. The design and implementation of this entity will be based upon the foundation of existing resources, purchased resources, and system data. The system should be dynamic, responsive, cost-effective and caring. It must always remain sensitive to the changing service delivery needs and growth potential within your area and yet retain and strengthen the existing fire department's heritage and traditions of community service.

Once a fire department decides why it exists, it can then lay out its own plans for the future. Far too many fire agencies limp along, never coming to a full understanding of why they exist, and what they are supposed to do. There may well be those in the Whippany Fire Company who fail to recognize that the world is changing and that you too must also change and evolve to meet the needs of the future. The future will always happen despite our best efforts to hide from it. We must all welcome it and prepare for it.

I would strongly recommend that goals be developed which will guide you in the development and implementation of your mission statement. These can be developed during the organizational **planning retreat** that we will be recommending for your fire district. While you may not think that you are in need of this organizational team-building effort, I suggest that it is important for every fire department to do this on a recurring, periodic basis. There seem to be two groups which exist within your fire protection system.

- Those who wish to train, staff, equip, and prepare for the future that lies just ahead of you.
- Those who wish to keep things as they have been for decades now.

It is up to you to recognize what is needed to organize for fire department success. You must come together as a team to create your vision of the future. As an outside consultant I cannot impose change on your organization. I can, however, recommend that you stand a fair chance of being able to evolve with the assistance of an organizational development consultant. You should do this as soon as possible.

I will also be making a series of recommendations throughout this report. As a consultant, I can only suggest and recommend what you should do. However, it is up to you to decide how and what to implement in your community. Whether you use one of our recommendations or create your own does not matter. The object is to face the problems in your service delivery system, and solve them, by whatever means are necessary.

Section Two - Population and Demographic Characteristics

One of the most important parts in developing a community fire protection plan involves the creation of what has come to be known as, "the community footprint." (Barr and Eversole, p. 1019) This requires those performing the study to review such elements of the community as:

- Demographics
- Economics
- Environment
- Weather
- Culture

This is what I have endeavored to do over the past several months. As a result of my research, I feel confident in making the statements contained within this section.

Hanover Township, New Jersey is a mid-ring, suburban community located within a reasonable commuting distance of the New York/Northern New Jersey metropolitan area. There are also commuting opportunities to a number of other regions within the Northern and Central Jersey employment areas. The township operates under a mayor and council form of government.

It has a land mass area of nearly 11 square miles in total, including contiguous protected areas.

The weather patterns for the township do not vary from the balance of the northwest area of New Jersey. The community has experienced a range of winters over the past 20 years that have ranged from mild to severe. The most recent winter is a prime example of the impact that weather can have upon the delivery of emergency services. On a number of occasions this past winter, emergency forces found it difficult to respond to all parts of the community. We would envision the next ten to twenty years as falling within the range of the past twenty years.

Whippany and surrounding communities are currently experiencing a period of growth. is working to maintain control of their growth. They have seen the problems in other communities and do not wish to experience the problems which uncontrolled growth can bring. This is a positive approach to community planning. This growth trend is expected to continue into the future as the suburban areas of New Jersey continue to grow. Based upon previous censuses, the population of was found to be as follows:

| Year | Population |
|------|------------|
| 1960 | 9,329 |
| 1970 | 10,700 |
| 1980 | 11,846 |
| 1990 | 11,538 |
| 2000 | 12,898 |

Projections regarding your future population suggest that it might grow beyond 15,000 by the year 2020. Given the 27 percent increase over the past 30 years, this is not an unreasonable assumption.

The median age of the population in 2000 was 40.1 years. This age can be perceived as one with negative connotations for securing new volunteers for the Whippany Fire Company. Volunteer fire fighters generally experience their most active years during the decades of the 20's and 30's.

The demographics we reviewed indicated that 17.3 percent of the population is between the ages of 20 and 34. It has been our experience that fire departments should work to recruit members between the ages of 18-25 in order to allow the people the opportunity for a long and productive fire department career.

When a community matures, its ability to recruit and retain volunteers begins to deteriorate. The same thing happens when the population is increased by the inward migration of people unfamiliar with the need for volunteers to staff the fire department. Many times these new folks commute great distances to work. The average travel time to work for Hanover Township is 23.8. Two-income families exist and most are unable to spare sufficient time to volunteer.

The data that I reviewed indicates a growth environment, although perhaps not as strong as in some of the neighboring communities. I would suppose that Whippany Township is a number of years away from becoming a mature, built-out community. However, I believe that its location as in a mid-ring suburban area will draw added population from the central city areas, as well as other more mature, and expensive suburban areas in New Jersey and Pennsylvania. The availability of open land for the purposes of development speaks in favor of this thought process.

The development of the old Channel property and the large housing development on the north side of Route 10, near the property speak to your growth potential. The township has also created a restrictive zoning pattern on Route 10 in order to avoid the strip development in the communities to its east and west. They wish to have a controlled pattern of growth.

This data seems to indicate a generally upward movement in the number of structures and occupancies that are being developed in your community. The fire department should plan to work toward creating an organization that can protect a Whippany area that may evolve in the future in a manner that is only slightly different from its current composition. It should be noted that nothing regarding development in New Jersey is guaranteed.

A further review of the demographic data for the community indicates that a segment of the community's population commutes to work each day. This does not bode well for recruiting new, daytime, volunteer staffing for the fire department. Many employers are hesitant to release employees from work to respond for emergencies in their hometowns. In any event, the time it would take for them to return usually makes their response problematic.

If those employees work at a distance, they usually will be of no emergency response value during the critical 0700 hr. to 1700 hr. time frame. This opens the discussion as to the need for daytime career staffing. Many younger families appear to be relocating to Whippany Township. This fact is supported by the data from the Board of Education. These families will spend a great deal of time working to support the needs of those families,

as well as providing appropriate family activity support. This trend tends to support my position that a diminution of available volunteers may be expected. This is the way it has worked in each of the communities I have studied over the past 20 years. More time devoted to family pursuits equates to less time available for voluntary activities, particularly the labor and time-intensive kind of volunteering that fire department membership represents.

This is a negative trend. It shows that the age group the Whippany Fire Company should be most desirous of recruiting will, in all probability, be unavailable in the community, because of their focus on family stability and growth. Another demographic trend that works against the volunteer fire service involves the number of families where both parents work. In the absence of an increasing stream of future, potential volunteers, the fire district should begin to start discussions on the need for daytime career staffing.

Your community should expect a continued growth pattern. This makes any plan for the future difficult to create. From a planning perspective, a mature community with minimal growth is easier to assess and plan for. This is not your situation. Certain parcels of land are being rebuilt for new uses. The old Channel property is a prime example of this. The new research facility will be a solid addition to Hanover Township's tax base.

Assumptions can be made based upon a fairly steady set of circumstances. In an explosive growth environment, many of the factors in the review can change almost overnight, making the plan more subject to reinterpretation.

If volunteers are not available, owing to the projected demographic issues, a mechanism should be created which provides for adequate daytime staffing. In the case of the Hanover Township Fire District #2, the addition of a small number of career staff members should not be a controversial matter. The cost of adding career members must be evaluated against the potential for fire-related loss.

The consequences of this have been considered during my study. I see it as an issue that must be faced directly and honestly. As the number of volunteers decreases over time, they must be replaced. If new volunteers can be recruited and trained, that is so much the better. However, if volunteers cannot be found, then career staff must be retained. I will speak more on this in later sections.

Section Three – The Whippany Fire Department

The **Whippany Fire Department** provides the primary fire contractual fire protection and rescue services for the Hanover Township Fire District #2. Founded in 1915, the fire department has been traditionally located on Route 10 at the intersection of School Street in the Whippany section of Hanover Township.

Many years ago, the fire department's station was enlarged to house the apparatus fleet, and operational elements of the fire Department. A larger apparatus bay area was built onto the existing fire station. Offices, storage space and recreational areas were added.

I am fortunate to have received valuable input during my interview process. A number of members felt that the teamwork and camaraderie of the department was the main reason for their continued membership. These fine folks also spoke of the ability to protect and serve their community. These are and have been a common thread during my surveys, and they are something upon which future success can be built. These comments came from members of all ages. I was, however, concerned about the relatively small number of members who shared their thoughts with me. It has been quite some time since I have encountered a response of this level.

On the whole I feel that comments from the members of the organization are very important to me as your consultant. In the absence of these good thoughts, a situation may evolve that can drive loyal members away. Your fire department has experience with this issue. When there is a lack of camaraderie, an environment can be created that is not conducive to gaining new members. It can drive a wedge between those who wish the organization to change, and those who want it to remain static. The leadership of the Whippany Fire Department must work to involve all of the members in their planning process for the future.

It is my belief that the fire district mechanism for taxpayer-supported funding has been wisely used in a way that minimizes the need for fire company level fund-raising functions. This continual hunt for money translates can easily translate into an added burden on many members for whom free time is a precious commodity.

I have seen a number of situations during my career as a consultant where time spent on fund-raising activities could have been better spent on training, pre-incident planning, and a whole host of efforts that are related to improving the service delivery mechanism of the fire company. It might also allow members to spend more time at home with their families. Problems of this nature appear to have been minimized in your case.

My review of the response data for the fire Department indicated that there has been a generally upward trend over the years regarding the number of people available to respond during the daytime period. Because of deaths, advancing age, and work-related problems, the number of people available respond to emergencies could have diminished. The fact that a greater percentage of your members are responding is a strongly positive finding on my part. Let us review the response numbers for the past three years.

**Average Number of People Responding
By Time of Day**

| Time | 2001 | 2002 | 2003 |
|----------------------|------|------|------|
| 0000-0059 | 11.2 | 33.8 | 29.0 |
| 0100-0159 | 11.2 | 29.0 | 30.0 |
| 0200-0259 | 8.3 | 36.0 | 33.3 |
| 0300-0359 | 12.0 | 35.5 | 30.8 |
| 0400-0459 | 8.8 | 36.5 | 23.0 |
| 0500-0559 | 8.0 | 36.9 | 20.0 |
| 0600-0659 | 9.5 | 9.7 | 8.2 |
| 0700-0759 | 8.6 | 8.8 | 7.5 |
| 0800-0859 | 7.5 | 10.0 | 10.7 |
| 0900-0959 | 9.0 | 11.0 | 11.0 |
| 1000-1059 | 8.5 | 12.8 | 10.7 |
| 1100-1159 | 11.1 | 14.2 | 11.1 |
| 1200-1259 | 9.7 | 12.7 | 12.9 |
| 1300-1359 | 8.7 | 13.6 | 14.0 |
| 1400-1459 | 10.5 | 13.9 | 11.2 |
| 1500-1559 | 10.8 | 13.5 | 13.7 |
| 1600-1659 | 10.8 | 16.3 | 14.6 |
| 1700-1759 | 14.6 | 14.8 | 14.6 |
| 1800-1859 | 15.5 | 19.0 | 14.0 |
| 1900-1959 | 15.3 | 21.7 | 19.1 |

| | | | |
|-----------|------|------|------|
| 2000-2059 | 23.2 | 21.6 | 16.6 |
| 2100-2159 | 20.6 | 21.6 | 21.2 |
| 2200-2259 | 12.3 | 18.4 | 18.4 |
| 2300-2359 | 15.8 | 28.9 | 32.7 |

We must all remember that the response records for any fire department reflect the number of people that are in the station at the end of the response. As is the common practice among volunteer fire departments, member's attendance is recorded regardless of age, or response status. Taken in their rough form, these numbers demonstrate the existence of the potential for a border-line problem of varying proportions.

They would appear to suggest that a decreasing number of people are available for fire suppression duty during the daytime period. This is critical, given the fact that in 2003 the majority of all responses were made during the 0700-1700 hr. time frame.

As I stated earlier, these numbers reflect the final roll call total and are collected after the completion of the incident. The existing data system has only recently begun to have the capability to provide an accurate immediate response number. A review of the entire response package for the fire department indicates that there is an adequate response of personnel between 1700 and 2400 hrs. The problems seem to begin at the time when personnel are starting to leave for their place of employment.

The **Whippany Fire Department** is not unlike my own volunteer fire Department in Adelphia. Our final roll call numbers include people who have been members for a long time, and who just stop by to see what is happening. However, tradition dictates that they receive credit for being there. My conversations with **Chief Joe Cortright** tell much the same story.

Like most fire departments across the nation, **Whippany Fire Department** faces a growing number of non-fire responses. These are for fire alarm malfunctions and carbon monoxide detector activation calls. Your records indicate that in 2003, well over 50 percent of your responses were for non-fire, incidental alarms, commonly referred to as "smells and bells."

~~Firefighting personnel soon tire of responding to a wide variety of non-fire situations.~~ This may also at some point begin to affect the ranks of the **Whippany Fire Department**. Response levels must be continuously monitored, so that the earliest signs of staffing and response problems can be detected and addressed.

My interviews told a story of people who would gladly leave respond to a fire. However, a number also stated that they could not always justify leaving their families or places of employment for all of the other types of responses. The result is a diminished response capability. This leads us to make a simple statement. In my professional opinion, the current status of the daytime staffing

response patterns in the **Whippany Fire Department** has the potential for losing the ability to provide a consistent and dependable level of fire suppression staffing for their district within **Hanover Township**. It is my recommendation that the use of a small number of additional career personnel be explored as a way to bolster your daytime response.

In the section on incidents that might occur in your community, I will demonstrate the necessity for the **National Fire Protection Association's** response recommendations. These state that the minimum force for response to structural fires should consist of two engines and an aerial device, or a vehicle capable of performing this task, staffed by twelve firefighters under the command of a Chief Officer. Please bear in mind that these numbers do not take into account the need for a Firefighter Assistance Team (FAST) or provide for a safety officer.

The text further states that this force should be available at the scene of a fire emergency within twelve minutes for those cases where the protection is provided by a volunteer fire department. Fortunately the size of Hanover Township allows for the expectation that a twelve-minute on-scene time is possible for the majority of the community. I must also stress that the ability of the **Whippany Fire Department** to field this force may be open to question during the daytime period. However, there can be improvements. The need to acquire additional career staff should be addressed at this point.

I have identified a gap in your fire department deployment staffing. Your records indicate that you appear to have a number of periods during the 0700 hr.-1700 hr. time frame during the weekday time frame when an insufficient or marginal number of responders are available. I would suggest that a small number of additional career personnel be hired to supplement the existing full-time staff during this time period. I will discuss this further in Section Seven.

The State of New Jersey's Public Employee Occupational Safety and Health Act (PEOSH) had mandated fire departments in the state to use the Occupational Safety and Health Administration's Respiratory Protection Standard. This act requires a force of four firefighting personnel, operating two separate hoselines, to be available prior to beginning interior structural firefighting operations.

While I realize that cost will always be an issue in decisions such as this, nonetheless, I would recommend that the number of people might actually be two or three, because of the importance of the fire vehicle pump operator to the water supply part of the firefighting equation, and the need for someone to be the safety officer. And it is our strong opinion that the **Incident Commander** not be counted as a part of the two-out side of the equation.

Equipment

An inspection of the turnout gear and self-contained breathing apparatus (SCBA) found an adequate supply of both, that appeared to comply with all appropriate standards and regulations. I would recommend that an extractor washer and a turnout gear drying system be purchased. I would also urge the fire Department to undertake the following responsibilities:

1. Establish an equipment review committee of the Fire Company President, the Captain and two other active members.
2. This small group will be charged with reviewing the appropriate fire service literature for the latest trends in turnout gear and other equipment.
3. When appropriate, they should meet with fire equipment sales and manufacturing representatives.
4. Your department should conduct an in-house review of the existing SCBA.
5. You must determine if the equipment meets your needs.
6. Conduct an in-house review of the available types of SCBA
7. Determine the wear out potential for equipment and decide on an acceptable service life for your equipment.
8. Set up a replacement schedule around the data identified during the committee's research.
9. The district should maintain the emergency power generator installed in the fire station.

10. A fire suppression system should be installed in the station to protect the investment in apparatus, equipment, and facilities.

Dispatch Service

The Whippany Fire Department is dispatched to emergencies by the Hanover Township Police Department's radio system. This is a full-time operation, and serves as the hub for all mutual aid operations within the township. However, there appears to be no regional radio system for large-scale, mutual aid operations. I feel that such centralized dispatch service could serve as the basis for a new approach to the service delivery deployment of local and mutual aid forces. I am suggesting that protective services for the district could be maximized by a series of formal, written automatic aid agreements calling for the joint dispatch of units from a central dispatch and communications operation for all local and surrounding fire companies.

The major problem that would have to be addressed here is the multiple-county nature of the response and deployment patterns in this area. I would recommend that a **Box Alarm Response System** be developed, similar to the model in use in Washington Township, Mercer County. You should become familiar with this approach, as it could expand it to fit your own needs. Apparatus is dispatched simultaneously from a number of different fire and EMS agencies in order to fulfill the requirements

for each area within the community. By using a regional approach to service delivery, the protective force is maximized, at a minimal cost to taxpayers in the fire district. Remember, however, that this is a **two way street**. You will have to give in order to receive. I have been informed that work is underway on this project. I would that it be continued and brought to fruition.

I would recommend an increase in the career staff provided by the Hanover Township District Two Board of Fire Commissioners. In this way, a force of personnel would become available to respond on a cross border, automatic mutual basis to support and enhance protection in the district, as well as the region. Career staff in other communities can lead to a regional, cross-municipal-border response system. This should enhance your districts interaction with Hanover Township Fire District #Two, the Cedar Knoll Fire Department, and the region as a whole.

This new area-wide approach to service delivery could serve all of the constituent communities. It could spread the effect, but not the cost of fire protection service delivery. Each group could fund their component of the system, and the overall group would enjoy the benefits of pooled labor and equipment. I do understand that efforts are underway at this time to create the Box Alarm System I am suggesting. This effort should be intensified and amplified.

Training

My review of the existing training program indicates that drills are ongoing. You are to be commended for your commitment to training. It is our opinion, based upon state and federal guidance that the definition of what constitutes fully trained, medically fit, firefighting personnel means personnel who are:

1. Firefighter Level 1(New Jersey AC 5:18c, Subchapter 4)
2. Active participants in fire Department drills
3. Hazardous Material Operational trained
4. Responding to fire calls on fire apparatus
5. Participating in structural fire fighting and live fire training
6. Are medically evaluated by a physician annually
7. Receive OSHA mandated training such as, Right-to-Know, infectious disease awareness, Self-contained Breathing Apparatus (SCBA).
8. Have the necessary personnel and training records to prove the following:
 - A. Mandatory annual smokehouse drill for all structural firefighters
 - B. Mandatory live fire drills annually for all structural firefighters to include:
 - a. Burn building operation
 - b. Flammable liquids fire training
 - C. Simulated aircraft emergency drills:
 - a. Small plane

- b. Large aircraft
- D. Use of standardized lesson plans for all drills and training.
- E. All new personnel must complete a state-accredited Firefighter I program prior to participation in actual emergency response operations.
- F. All emergency response personnel shall be trained to at least the First Responder Operational Level for hazardous materials operations. This also requires annual refresher training.
- G. All officer personnel trained to comply with the New Jersey State Police Hazardous Materials Incident Command course
- H. Provide Right-to-Know training for all personnel as per state mandate
- I. Create a fire department safety program to continue the following:
 - a. Improve your commitment to firefighter safety
 - b. Create a safety chain of responsibility
 - c. Review all unsafe acts or accidents by members and from bulletins
 - d. Create the position of fire department safety officer

USE YOUR SAFETY PROGRAM AT ALL TIMES!!

It is crucial to expose people to the information available at conferences and fire training schools. Without the influence of new ideas, a fire department can grow stagnant and fail to meet

changing operational conditions with the most modern operational methods and equipment.

Outside Training

I would strongly recommend that personnel be sent to the following outside training opportunities:

| | |
|---|----------------------------------|
| Fire Department Instructors Conference | Indianapolis |
| Firehouse EXPO | Baltimore |
| International Association of Fire Chiefs Conference | Dallas / Denver / New Orleans |
| National Fire Academy outreach courses | |
| Morris County Fire Academy courses | |

Fire Department Goals

I would recommend that the fire chief adopt the following as the goals for his operational tenure...

1. Create better morale
2. Increase the amount of training in the fire department
3. Promote a greater spirit of brotherhood in the fire department
4. Work to create a system of pre-fire plans

These are all important things to do. I would urge the chief to work hard to accomplish these goals. His predecessor spoke to the need for pre-fire planning, but indicated that there was insufficient time to accomplish this important task. I would recommend this as something that could be accomplished by the career staff I have recommended.

Fire Department Recruitment Program

I recommend that an ongoing volunteer recruitment program be developed so that members of the community, both existing and new, are made aware of the fact that volunteers are needed. Elements of the program would include:

1. Written literature with photos which publicize the work of the fire department.
2. A system of personal contacts with new members of the community.
3. The creation of an agreement with the local electrical utility to include information about the fire department and its recruiting needs. This might also be accomplished through the gas, water, sewer, or any groups that have the ability to piggyback such material in local mailings.
4. Press releases to place in the media

The fire department has made an important commitment to the future through its program for junior members. Though not a very active program at this time, I would suggest that the necessary time and effort be expended to revive it. This type of program has paid great dividends for a number of other communities. My fire company in Adelphia has had such a program for more than 20 years. A number of our officers, and past chiefs are graduates of the junior program. This program should be advertised in your local school system, as well as supported by an active, word-of-mouth membership campaign. We currently have 25 members in our junior program.

Section Four – Potential Incidents That Might Occur in Hanover Township Fire District #2

A fire risk assessment of the hazards within any community requires that a determination be made regarding those events that might occur in that community. During the past several months, I have also studied your community and the hazards to be protected within your boundaries. I have reviewed those emergency events that a community might experience. My experience has shown me that a variety of emergencies may occur. Every community must recognize that their emergency service forces could encounter any one of them on a given day (or night).

If your fire district fails to give these potential emergencies due consideration your ability to respond to them, should they occur, will be limited, or at the very least diminished. It may also reduce the effectiveness of your overall level of municipal fire protection. Hanover Township Fire District #2 should consider adopting a pro-active approach to planning for those potential incidents that may happen in the future.

A great deal of what I saw in your community exists as a result of past practices. More time needs to be spent in planning for future operations. A number of variables exist that can serve as the basis for various potential emergency scenarios. Each must be consciously considered as a part of the planning process. They are as follows:

- Population
- Geography and topography
- Demographics
- Transportation mediums
- Level of industrial development
- Level of residential development
- Level of commercial development
- Predominant construction types
- Available water supply

Let us look quickly at each of these.

1. Your population has the demonstrated potential for growth.
2. Demand for service has the potential for growth.
3. The changes occurring in your township may have a negative impact upon your ability to recruit new members for the fire company.
4. The population is aging
5. There has been an increase in the number of both residential and commercial occupancies.
6. Commercial development appears to be entering a new growth stage.
7. Your road network allows for apparatus movement throughout the community.
8. Your new residents require the assistance of the fire department to understand the unique safety skills of living in a suburban setting.

9. I observed each of the following transportation and movement mediums during our visits:
 - a. Roads and highways
 - b. Aircraft over head
 - c. Rail traffic

The impact of the transport mechanisms must be a part of your planning for future emergency service needs.

10. The potential exists for the development of multiple dwelling residential occupancies.
11. It has been my experience that where you have an increase in a given population base that this normally translates in an increased potential demand for service.
12. Most new construction is of a type that is not friendly to firefighters.
13. This creates structural integrity problems, as standards have been diminished to some extent by those construction and materials practices that are allowed by the building code minimum requirements.
14. This problem can be partially attenuated through an increased emphasis on installed alarms, and automatic suppression devices.
15. You have the protection of fire hydrants. Growth in the number of hydrants will continue with an increase in development.

After giving each of these criteria a due level of review and concern, I offer the following for your guidance. I believe six basic scenarios exist in your community which merit additional attention on the part of fire department planners in that part of Hanover Township protected by the Whippany Fire Department.

- A multiple-dwelling fire
- An industrial/commercial/institutional occupancy fire
- An aircraft crash
- A transportation/haz-mat highway incident
- A rail transportation-related emergency
- A large-scale, multiple-casualty emergency medical response on the highways of your township.

Thanks to their participation in a well-thought-out mutual aid program, the **Whippany Fire Department** possesses the necessary apparatus capabilities for handling a basic residential structural fire scenario in each of their local neighborhoods. Sufficient staff may not be immediately available for an effective daytime initial attack during all periods of the 0700 to 1700 hr. timeframe. The potential for a dilemma lies therein. I base these opinions upon my review of your response documents, as supplemented by my interviews, and my years of emergency response and research.

Your ability to operate at larger incidents will surely require the use of outside mutual aid support. This would be particularly

true for the large incidents that might occur in your industrial, commercial, mercantile, or high-rise and senior citizen's occupancies. The state laws that govern the use of incident command mandate that you work with the members of your mutual aid contingent to build operational bridges according to the ICS mandate.

I would also like to stress that your fire department's service delivery capability varies, based upon the time of day when a fire might occur. Sufficient equipment and staffing is normally available during the evening hours to begin an initial fire attack. Your personnel response numbers during the evening hours is among the best I have seen in a long time. However, staffing is not an area where you can rest on your laurels. Larger fires could strain your locally available resources and create the demand for mutual aid.

The same does not hold true during the 0700-1700 hr. time frame. On many occasions, only a handful of volunteers have been available to operate within the critical first ten minutes of a fire attack operation. You should address this shortfall.

The **Fire Protection Handbook 19th ed.**, from the **National Fire Protection Association**, suggests that a volunteer fire department may be reasonably expected to arrive at the scene of an incident within 12 minutes of its discovery. The response time for a career department drops to 8 minutes. The

NFPA is silent on the combination scenario. These response time numbers allow for a turnout time of six minutes and a variable response of approximately four to six minutes. It has been my experience that this requirement usually falls within the 1.5-mile pumper response requirement of the Insurance Services Office (ISO).

As the turnout time increases, or the response time increases, so too does the total time necessary for your units to arrive on scene time. This is a given, when dealing from a fixed set of facilities. While these stand as recommendations, rather than mandates, they could be granted standing in any legal action which might be taken against the fire department, owing to an adverse tactical response and deployment scenario.

My support for this response level, and all derivative comparisons, comes from both code and textual references, as supplemented by my personal experience in both urban and suburban environments. The support that might be available from surrounding communities varies by the time of day, as supplemented by operations ongoing in their jurisdictions at any given time. It may be difficult to mount a large-scale, daytime fire attack.

Let us now look at what the **National Fire Protection Association** recommends as the structural firefighting response for various occupancy hazards:

**Typical Attack Response Capability Assuming Interior
Attack and Operations Response Capability**

High Hazard Occupancies (schools, hospitals, nursing homes, explosive plants, refineries, high-rise buildings and other high life hazard or large fire potential occupancies)

At Least:

Four pumpers

Two ladder trucks (or combination apparatus with equivalent capabilities)

Two chief officers and other specialized apparatus as may be needed to cope with the combustible involved

Not fewer than 24 firefighters

Medium Hazard Occupancies (apartments, offices, mercantile and industrial occupancies not normally requiring extensive rescue or firefighting forces)

At Least:

Three pumpers

One ladder truck (or combination apparatus with equivalent capabilities)

One chief officer and other specialized apparatus as may be needed or available

Not fewer than 16 firefighters

Low Hazard Occupancies (one-, two-, or three-family dwellings and scattered small businesses and industrial occupancies)

At Least:

Two pumpers

One ladder truck (or combination apparatus with equivalent capabilities)

One chief officer and other specialized apparatus as may be needed or available

Not fewer than 12 firefighters

Rural Operations (scattered dwellings, small businesses, and farm buildings)

At Least:

One pumper with a large water tank (500 gallons or more)

One mobile water supply apparatus (1,000 gallons or larger)

Such specialized equipment as may be needed to perform effective initial interior firefighting operations

One chief officer

Not fewer than 12 firefighters

Additional Alarms

At least the equivalent of that required for rural operations for second alarms; equipment as may be needed according to the type of emergency and capability of the fire department. This may involve the immediate use of mutual aid companies until local forces can be supplemented with additional off-duty personnel. In some communities, single units are "special called" when needed, without always resorting to a multiple alarm. Additional units may be needed to fill at least some empty fire stations.

As I stated above, you are fortunate to have a well-organized mutual aid plan. Thought should be given to increasing the level of automatic aid responses from your mutual aid partners. This will allow for an adequate first alarm response for the community as a whole, as specified in **National Fire Protection Association** recommendations.

In general, I am referring to the response of 12 fire personnel under the command of a chief officer, operating a force of two engine companies, and one truck-company. I would also suggest that a safety officer and rapid intervention team are now needed to complete your fireground deployment team. That would raise the needed number to 17-18 people.

Your response records provide a number of clues as to your actual normal staffing levels. I say this because all response records prior to the last few months were gathered at the end of the incident. The new records created in the future will allow you to assess your actual first-due response by unit. In this way, you will be able to build a stronger case for any needed personnel enhancements.

Your department uses mutual aid. Automatic aid assignments should be broadened with neighboring fire departments. I feel that there is more that could be accomplished by working together on an even greater scale. The need exists to dispatch responding units at the same time. Time is a commodity

that can never be replaced. Experience has shown that equipment can easily be returned if it is not needed. However, the time lost when units are not dispatched in a timely fashion can never be replaced.

I would urge you to consider holding quarterly, large-scale inter-community and mutual aid drills, along with periodic classroom briefings. This could improve the working relationships with all your neighbors in Morris County.

A review of Hanover Township's hazardous materials response capability suggests that you are capable of handling a wide range of spill and leak scenarios which may be encountered in your community. I want to stress that road, rail, and air transport incidents are also possible. I would urge you to maintain your relationships with other agencies, as currently constituted. Broaden them when you can. Many toxic materials may pass through your community that could severely tax the response capabilities of your fire department.

The keys to successfully handling an incident of this type lie in the areas of planning, training, and preparation. You must work to maintain continual regional interaction during drills and daily operations. You wisely assumed the primary responsibility for haz-mat operations in your community.

A **General Operating Guideline (GOG)** should be established which involves the Morris County hazardous material response resources in actual incidents as well as in drills with your personnel. You must take those steps necessary to train your personnel and prepare your emergency service system. It should include:

1. Fire
2. EMS
3. Police
4. OEM
5. Your county hazardous materials entity
6. A private hazardous materials firm to support the over all operation.

As my next recommendation, I would suggest that an aircraft crash might occur anywhere in a densely populated state such as New Jersey. Several steps could be undertaken which can help to improve your district's capability in this area of fire fighting. Training should be undertaken to develop an understanding of what to expect in the event of a plane crash. The same can be said of the department's potential exposure to a rail-related emergency. These are responses that will tax the ability of any single response agency.

The **Whippany Fire Department** should work to become an integral part of any existing regional efforts that provide a pre-

positioned stock of firefighting foam. Equipment availability and product location are a part of your preplanning considerations for this type of emergency. Staffing issues by time of day should also be a part of this process. These facts must be known ahead of time so that they can be deployed quickly and effectively in time of crisis. Remember to preplan for the response of specialized equipment from as many sources as you can identify. If no such capability exists in your part of the county, you may wish to think about assuming such a role for your district.

During my traffic survey visits, I noted a great deal of traffic in your Route 10 area. My observations were confirmed by the anecdotal information supplied by many in the fire company. Given the number of vehicles passing through your community on the local, county, and states roads, the potential exists for a major, multiple-casualty emergency medical incident.

In such a scenario, the forces of many different communities might have to be marshaled under the operational control of an EMS commander. You have an existing relationship with your local EMS force. They participate in regional agreements to supplement their capabilities. This should stand you in good stead to participate successfully in such a major undertaking. We would urge you to build upon your existing relationships to prepare for the future of emergency operations in your fire district.

It should be expected that surrounding communities would provide the appropriate mutual aid EMS backup to support such a large-scale operation. Paramedic services should be factored into your operations. These capabilities should also become an active part of your periodic drill program.

Hanover Township Fire District #2 should continue to improve its use of the Incident Command System (ICS). Large-scale, multiple-agency, multiple Jurisdictional emergencies will flow more smoothly, if people are familiar with ICS. This emphasis is most appropriate for command and control in EMS as well as fire and hazardous materials incidents.

It is the on-going joint training of all involved agencies in a community that leads to success in the delivery of emergency services during a time of crisis. The key to success in any emergency is quite simple. You must continue to apply equal parts knowledge, planning, and training.

It is in the acquisition of these attributes where frequent short falls occur. The means of preparation are simple and straightforward:

1. Know what might happen.
2. Acquire the skills to deal with these potential emergencies.
3. Drill on them as a group

4. Review and revise your plans periodically.

You should remember that training for events that may occur at some future time is just as important as training for those events you see on a daily basis. This future-oriented training might be more important owing to the fact that you do not see these specialized events in the normal course of events. Should you choose not to train, you could be subjected to an unwanted surprise at the wrong time.

If you choose to attack the problems facing your community, you should be successful, and in the emergency service world, success translates into lives saved. Your training program will serve as the basis for all future success you may be expected to experience. These are the various situations that I believe could happen in your fire district. You need to be proactive in taking those steps to address each of the areas of concern listed above. Knowledge, planning, and training are the three keys to success in preparing for them.

Section Five- Hanover Township Fire District #Two **Municipal Risk Analysis**

As part of my analysis of the **Hanover Township Fire District #Two**, I reviewed the risk and hazards protected by this organization. I believe that it is critical for a fire department to have an understanding of the potential risk demands in their locale that may impact that community's fire department. I reviewed the fire risk potential for those occupancies that met the criteria for being labeled a **Target Hazard**.

Target Hazards have been defined by the National Fire Academy as being those occupancies that pose an undue risk of life loss, personal injury, or property damage. Hospitals, nursing homes, hotels, lumberyards, schools, and garden apartment complexes are some of the more common examples of **Target Hazard** occupancies. Fire departments will normally face large-scale human or property protection challenges in these sorts of properties. Your fire chief helped me to select the candidates for inclusion on this list during our tour of the fire district. I then selected those buildings in Hanover Township which best fit the criteria for being the **Target Hazards** and developed this list:

1. Metro West complex
2. Lucent technologies
3. Marriott Courtyard on Route 10
4. American Gas Company facility on Route 10

5. Memorial Junior School
6. Nursing home on Whippany Road

I looked at each of these occupancies in terms of the demands they would make upon the Whippany Fire Department during a time of fire or chemical emergency. We grouped these demands into three classifications.

- Potential for initial fire attack flow problems
- Potential for sustained attack flow problems
- Potential for rescue-related issues

Initial attack fire flow is that amount of water that must be delivered through department hoses if a fire is to be controlled through an aggressive interior firefighting attack. A ten-minute timeframe is allowed for the fire Department to perform those tasks necessary to achieve this flow.

Sustained attack fire flow is that amount of water that must, hypothetically, be delivered by fire department pumpers to control a fire in the involved occupancy and limit its spread to surrounding structures. There is a period of thirty minutes allowed for in the process to assemble that equipment necessary to supply this flow.

Potential for rescue-related issues assesses the potential rescue problems that a fire department may face. Such things as

process hazards, occupant numbers, and occupant conditions play a part in this aspect of the analysis. An excellent example of an occupancy where the ability of the fire department to rescue people may be challenged exists in the Metro West complex. There is a combination on numbers of occupants and condition of occupant that must be factored into your community planning.

There are three limiting factors involved in assessing the ability of any community to meet the required flow:

- Number and size of fire department pumper apparatus
- Number of firefighters available to provide the attack force
- Available fire flow from the water system

As part of my risk analysis I studied the local fire department's attack capability. I observed the apparatus fleet and the staffing response levels recorded by the department in order to ascertain if there were sufficient people available to support the 150 gallons delivered from a single attack hose line. It would appear that under a number of normal circumstances, the fire department would be able to get a single 1-3/4" hose line into service fairly quickly. However, given the state's two in/two out law, the second line and its speed of deployment then becomes critical.

My research indicates that the amount of time it might take to stretch and operate a back up hose line appeared to vary by the

time of the day. In my opinion, it might be difficult to provide more than one initial attack line during the early stages of daytime fire incident. That would make the availability of a back-up hoseline problematic. However, that ability is extremely variable.

This is a situation where the use of automatic aid has the potential for reducing the lead-time for additional operational support at the scene of a fire. My record review indicates similar problems should not be anticipated during the 1700-0700 hr. time frame. This tells me that your risk level, community-wide, varies by the time of day. It is my opinion that the risk level for structural firefighting attacks is higher during the day than during the evening and nighttime hours.

I would note that I have observed your response and deployment on a number of occasions. The personnel I spoke with stated that they are able to get a pumper on the road fairly quickly. I concur with this based upon my limited observations. I would caution that the number of people available varies by the day, so that the procedures for securing mutual aid are critical in maintaining a balanced response.

It has been my experience that fire flow may be increased by the provision of more people who are able to respond during the target time frame, thereby increasing the department's water flow capability. However, there are actually four ways that can improve flow capability:

1. More trained personnel
2. Larger hoselines
3. The ability to deploy more hose lines
4. Improvements to the water supply system

You can work on the second and fourth points, but those actions are of little consequence without the necessary personnel. The delivery of fire protection and rescue services is an extremely labor-intensive undertaking. I have never observed or studied a fire department that could boast of having too many people.

My review of your local water supply indicated that fire hydrants are available within a useful distance of your target hazards. The size and number of mains indicates that an appropriate flow should be available under normal operating circumstances. This fact was confirmed by a review of your most recent Insurance Services Office inspection report. I was also informed that further enhancements to the water system are being considered.

In each **Target Hazard** case we saw a risk potential that appeared to be in excess of what the fire department can readily deliver. Your department has sufficient pumper equipment. However, the staffing levels during the 0700-1700 hr. time frame might be problematic for larger incidents. Adequate mutual and automatic aid forces on a first-call basis can provide sufficient

forces for a fire attack on those occupancies that are larger than a single-family residential occupancy. However, the key to this requires an automatic mutual aid program. This is difficult without an established regional communications network.

This type of network would allow for the rapid assembly of force capable of handling incidents in your larger structures. This means that the basic initial attack capability of the local fire company should be expected to supply in the vicinity of 150 gallons-per-minute. We must add a word of caution at this point.

Your department should be able to flow this amount of water, provided a sufficient number of personnel are immediately available to deploy the attack and supply hose lines, and provide an appropriate number of mutual aid units. An increased reliance should be placed on mutual aid support to augment the initial attack force. It is, therefore, extremely important to recognize the value of installed, automatic fire suppression in your community. The state fire codes have helped you. The newer, larger occupancies in Hanover have complied with the requirements for automatic fire sprinkler systems. These devices sound the alarm and begin to suppress the fire, at the same time that your fire department receives notification of an incident. These devices work to limit your exposure to large fires. However, they do not eliminate the need for an adequate firefighting force. (See section four)

The **Sustained Attack Fire Flow** requirements are reviewed in a slightly different manner. My research indicates that sufficient number of apparatus is available within a 30-minute radius of Hanover Township to supply the added pumping capability to support the necessary flows. The variable in each of these cases will be water supply availability. The best way to determine **Sustained Attack Fire Flow** delivery capability would be to conduct a major, area-wide drill. In this way the water supply system and the mutual aid delivery system can be taxed to approximate a major fire. You should schedule such a drill however it will take the time and cooperation of a great many people from a number of different fire departments in neighboring communities.

Since the scheduling and conduct of such a drill is so difficult, I usually perform a theoretical study of the available pumping capacity in a region and then factor in the available water supply in the area. This is a sufficient measure for our planning and research purposes. It has been my experience that the limiting factor in communities such as Hanover Township is the water supply system. Given the number and availability of fire hydrants in your community and the size of the water mains, this should not be an issue in most areas of your fire district.

I would urge your community to continue working to enlarge and improve the size of the area that is protected by your water mains and hydrants. You have state laws and past practice on your side. Your people know the water system and how to

supplement it. This is good. You are also proficient in operating within the tanker task force environment. We know this from many years of first-hand experience. Your pumping capacity is sufficient for most standard fire scenarios. The water system should be maintained, and upgraded wherever possible. Improvements in the water supply system will lead to improvements in the sustained attack flow capability.

The manner in which mutual aid communications is handled in your region is problematic. My interviews told me that under the terms of the Black Meadows Mutual Aid Association, each town assumes the communications responsibility for a major fire within its boundaries. This situation lends itself to overtaxing the communications resources of any single community. It suggests that some form of regional communications system be developed. This is done in many other places at the county level. Some examples can be found in Burlington, Mercer, Camden, Monmouth, and Gloucester counties. While this is something outside of the control of the Board of Fire Commissioners in Hanover Township Fire District #Two, it is an issue that deserves attention.

In my opinion, your fire department should prove capable of handling most fire scenarios in your community. Risk can be lowered in the following ways:

1. Consider acquiring 2" -fire attack hoselines, equipped with the appropriate new nozzles to match the hoselines. This will

maximize the effectiveness of your attack and utilize your capacity to the greatest possible extent

2. Consider the use of Class A foam system on future apparatus
3. Enhance automatic mutual aid agreements with surrounding departments to provide support in the way of firefighting personnel. This is particular critical during the daytime period. Be sure to recognize the problems caused by travel time and distance.
4. Continue to seek the installation of additional hydrants in wherever possible.
5. Continue your commitment to the installation of automatic fire protection.
6. Consider the addition of a daytime career staff to drive and operate the apparatus.
7. Consider the possibility that neighboring fire departments are also experiencing staffing shortfalls. This may require alterations to the ways in which you set up your automatic aid. However, my recommendation that an area-wide box alarm plan be created in order to share the regional workload still stands. This will provide the greatest possible potential for assembling an adequate fire suppression force.

Section Six – Station Location Issues

The fire station is the single, most vital unifying element in a fire department. As the center of a community's fire-fighting efforts, the station is a symbol of the protection of lives and property. A great deal of organizational pride grows outward from the place where your fire department lives and works. Far too many people ignore the importance of having a modern, well-equipped, and functional fire station at the heart of their operation.

One of the concerns presented to me by the fire chief during my visits in Whippany involves the matter of fire station location. My review of the issues required me to create a number of review options. The situation seems to break itself into four distinct questions that must be answered. They are as follows:

1. Does your fire district need a substation in addition to your existing fire station?
(or)
2. Can one new station be built to replace the existing station and provide better coverage to the balance of Hanover Township Fire District #2?

This is a decision that cannot be made in a vacuum. In order to render an opinion on this your fire district would have to study the following:

1. Where do the current members of the fire department live?
2. What are the primary target hazards that must be protected?
3. Will a change in location affect the time for members to respond to the new station?
4. Will a change in station location have an impact upon the response times to the larger, target hazard locations listed in Section Five?

Quite simply, the existing station is located on a busy highway. Although it is centrally located within the township, I have concerns about the safety of the existing location. No matter which direction your vehicles must respond, you are faced with the issue of blending into the flow of traffic. Your personnel must also negotiate their way through the same traffic to reach the station.

3. Further, it can only be reached easily and legally from the east to west direction. My traffic survey visits indicated that at certain times of the day and certain times of the week that traffic is heavy, slow moving, and not conducive to rapid response to or from the station. This provides a delay for personnel responding from their homes and slows the response of the apparatus.

I must repeat that the decision regarding station location is yours to make. I believe that the long-term interests of the Fire District would best be served by the creation of a station away

from its original Route 10 location. I would not recommend the further expenditure of funds on the existing station. Those resources could be better devoted to the acquisition of land and the building of a new fire station.

I would suggest that it is possible that the sale of the highway property could create a pool of money that could be either:

- a. Invested for future use by the fire company
- b. Used for the construction of the new building
- c. Both a and b

The Fire District has to evaluate where they want to move. The cost of doing any sort of construction is now as low as it ever will be. I say this based upon my experience as Chairman of the Board of Fire Commissioners for Howell Township Fire District #2. Our district is in the midst of selecting a site for our proposed substation. The voters have approved a bond issue with a maximum value of \$2.5 million. We are confident that we can complete the project for a lower figure, but we are going to act expeditiously.

I would stress to you that this proposed new station should be a structure that would be tailored to meet the needs of your fire company and the fire district well into the foreseeable future. Let

me share some thoughts on the issue of station location to guide you as you ponder this decision:

- a. Is the layout of the station appropriate for current apparatus needs?
- b. Is the layout of the station appropriate for future apparatus needs?
- c. Have there been changes in housing or development matters since the station was built that would speak to the need for another location?
- d. Has the location ever been evaluated in terms of the overall needs of the fire district?
- e. Do you expect any changes to the type and size of apparatus you have in your fleet?
- f. Could you ever get a modern aerial tower device into your station?
- g. Could you ever get a modern aerial tower device out of your station and onto Route 10?
- h. What will you do if the state decided to widen the highway in front of your existing station?

If the current site meets any needs that you currently have, or might reasonably foresee, then you may wish to remain where you are? In that case, you would only need to budget for foreseeable maintenance contingencies.

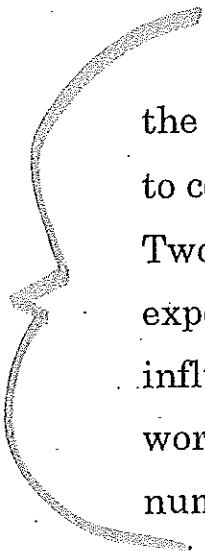
However, let me, as your consultant, point out a few things:

- a. Your current location has been struck by floods on a number of occasions over the past several decades.
- b. Your community is experiencing continued residential and commercial growth.
- c. Fire apparatus is growing larger. (ex. of new rescue/haz-mat unit)
- d. You really could not expect to safely drive an aerial device onto Route 10 from your current location. Although you rely upon mutual aid for your aerial service, your current location precludes that from ever being an operational option.

Let me close this discussion by suggesting that action is called for now. This is the type of decision that grows more expensive the longer that it is put off.

Section Seven -Staffing and Personnel Issues

Perhaps the most critical aspect of any fire service consulting assignment that I have ever completed involves the matter of staffing for emergency service response. The fire service in most communities has historically been provided by an all-volunteer fire agency. In its time this was an effective way of protecting the community from the ravages of fire and other emergencies through the mobilization of those with the greatest stake in the matter: the residents of the affected community.



Time has not been kind to the volunteer fire service. Jobs at the local level have disappeared. People are finding it necessary to commute greater distances to reach their place of employment. Two-job families have become the norm to meet the spiraling expenses of living in a suburban community. Most telling is the influx of residents who have never been exposed to the volunteer world. Let us face the sad fact that the days of the volunteer are numbered in many places.

Having stated these facts, I would suggest that your response levels at ~~the present time~~ are marginally acceptable. After reviewing your records, witnessing a number of daytime responses, and speaking with a number of people, I would suggest that you are able to provide a marginally-acceptable daytime response. Your mutual aid plan provides a backup that will allow for the influx of assistance from surrounding communities. I

would suggest that perhaps your department could respond more quickly if a number of career personnel were added.

During the course of my study I identified a moderate staffing shortfall during the 0700 hr. to 1700 hr. daytime period. On a number of occasions, there has been a personnel response that falls short of what would be deemed an adequate number of people available to conduct a structural firefighting operation.

Fire and emergency rescue services are time sensitive. If you arrive in a timely fashion, you will have a better chance for success. Whether it is saving the life of a trapped fire victim, or extricating a person trapped in a motor vehicle accident, minutes are a critical commodity. However, a timely response by an insufficient number of personnel will not deliver an effective service for the customer, the person waiting for you to respond and solve their problems.

Based upon my review of the fire response statistics for the Whippany Fire Company, it would be my recommendation that two additional career personnel be retained by the Whippany Township Fire District #1 to serve during the 0700 to 1700 hr. time frame. The personnel that are selected should be well-trained and immediately capable of performing most or all of the following tasks:

1. Firefighting
2. Training of personnel
3. Apparatus maintenance
4. Fire apparatus operation
5. Station maintenance
6. Preventive apparatus maintenance
7. Fire inspections
8. Code inspections
9. Public education

① Based upon our discussions with the fire chief, we agree with him regarding the need for someone to handle the day-to-day requirements for apparatus maintenance, operation, and care. We also agree with him that the need exists for a dedicated training officer. Each of these is a special position that has technical requirements which must be addressed in the selection of those individuals who will fill them.

② The Board of Fire Commissioners has for some time now retained the services of a career fire chief. This was a wise decision and should be modeled by other fire departments throughout the state. This decision fixes responsibility for operations and provides continuity of supervision. However, I am concerned that the Board of Fire Commissioners failed to understand the ramifications of their decision to combine the duties of fire chief and fire official. These are not complimentary

duties, and should not have been brought together. The fire chief should be a supervisor, leader, strategic planner and incident commander. The position of fire official is that of a technical expert whose role is one critical element among many for which the fire chief is responsible.

A situation has arisen of the commission's own making. Enough people have shared their thoughts with me that I can see where my advice on this matter must be concrete and straightforward. I have been asked to propose a solution to the issue at hand. As a consultant, I have found it critical never to shy away from the tough decisions. Therefore it is my recommendation that the Board of Fire Commissioners split these duties and that the operation be returned to the status quo which existed prior to this ill-advised combination of dissimilar positions. I base this upon a number of past consulting assignments where such decisions were entertained, as supplemented by my research in the field, as supplemented by my nearly four decades of experience in the fire and emergency services field. The fire chief should be focusing on the big picture and creating a vision for the future. The fire official should be focusing on the daily matters of providing fire prevention and code enforcement to the citizens in Hanover Township Fire District #Two.

Some additional tasks that could be performed by the personnel recommended in my report are:

1. Incident command pending the arrival of the volunteer chief officers
2. Pre-fire planning visits
3. Pre-fire planning reports
4. Fire incident reports
5. Maintenance program reports
6. Inventory reports
7. Receipt and checking of deliveries
8. Supervision of station maintenance

With this complement, you should be able to get an engine on the road in fairly short order. Available volunteers would continue to respond to incidents as well, supplementing the nucleus provided by the career staff. There is a cost inherent in delivering any service with a career staff. However, it is my opinion that the time has come to increase the size of your combination style of fire/rescue department.

It is also my opinion that a greater emphasis on supervisory training be created by the Board of Fire Commissioners. Every member of the career staff should begin attending courses at the National Fire Academy. Further, the fire chief should be attending the Fire Rescue International Conference which is held by the International Association of Fire Chiefs, and the Fire

Department Instructor's Conference in Indianapolis. Funding should be provided for others, from both the department and the board to attend these events as well as the Firehouse Expo in Baltimore each July. New thoughts and ideas need to be explored and assimilated into the daily operations of the department and the fire district.

The time is past in many communities when fire departments could rely totally upon the work of a dedicated force of local volunteers from the community. As I stated earlier, times are changing, the makeup of the population is changing, and the availability of people to give of themselves voluntarily is diminished. None of these facts excuses the fire district from its statutory responsibility to provide fire protection on an around-the-close basis. The daytime staffing shortfall that I have factually identified, as well as the personnel matters I was ask to explore should be addressed as soon a practicable.

Section Eight – Final Recommendations

1. Fire Suppression Organization

- A. The Hanover Township Fire District #Two has provided the Whippany Fire Company with sufficient apparatus and equipment resources for normal operations.
- B. They fulfill the need for aerial device coverage through their mutual aid agreement with Hanover Township Fire District #Three, Cedar Knolls.
- C. The Whippany Fire department has sufficient staffing for operations after 1700 hr. and before 0700 hr.
- D. Research has shown that the fire department has certain marginal staffing issues that have the potential for affecting operations in the 0700-1700 hr. timeframe.
- E. Hanover Township Fire District #Two should decide how to address meeting the mandates of the New Jersey State law that requires that sufficient staff be available to implement a two-in/two-out staffing posture at all structural fire incidents.
- F. Fire district should explore the hiring of additional paid career fire personnel.
- G. Fire department has a well-defined set of operational procedures.
- H. Fire district works with other fire department in their area with in a well defined regional response plan.
- I. Fire department should continue to maintain records and response data as currently generated.
- J. Fire district should continually review their written, automatic aid agreements with surrounding fire agencies.
- K. These documents will spell out:
 - i. Who responds to the various parts of Hanover Township

- ii. The types of apparatus will respond from each agency
- iii. The time of day that these agreements will remain in effect
- iv. Specific limitations of the parties to the agreement


2. Fire Suppression Operations



- A. The fire district should continue to mandate compliance with state mandatory incident command legislation.
- B. The fire district should periodically review the personnel accountability system currently in use by the Whippany Fire Department.
- C. The fire department should periodically review their firefighting strategy and tactics for their impact upon operations that might occur in the fire district.
- D. The fire department should provide the opportunity for each active member to experience a live fire training experience as mandated by the New Jersey State Department of Labor. This has been increased to four such experiences per year.
- E. The fire department should review training program to insure that new topics are added and existing subjects are revised and covered on a recurring basis.

3. Staffing and Personnel Issues

- A. The Board of Fire Commissioners may well decide to continue doing what you are now doing. This is always an option. It is not, however, one that I would recommend.
- B. First and foremost I would recommend that the positions of fire chief and fire official be separated, based upon the reasons listed in Section Seven.



- 
- C. You should hire two additional personnel to staff your fire station. In this case, you should consider following the steps outlined below.
 - D. There should be a training officer position and an apparatus engineer/maintenance position
 - E. Develop a set of job criteria, and hire your own career staff. I would recommend that you create a force of three to five career firefighters, including existing staff.
 - F. The personnel responses should be continually monitored. Any drop may need to be addressed by the addition of further career staff hiring.
 - G. I would suggest that an increase in your budget of approximately \$100,000 should be set aside for this program. This is a large percentage increase in your budget, but you must understand that hiring staff is not an inexpensive decision.
 - H. Add this requirement to the salary line in your district budget.
 - I. Fire district taxes will rise. You must explain for this increase by stressing the need for daytime career people to provide a consistent level of service.
 - J. In addition to any career staff, you should look at the following incentives to see if any might apply to your community. These can be a means of recruiting and retaining volunteer members.

- 
- i. Have the township set up an incentive program where volunteer fire and EMS people receive any and all township permits or licenses at no cost.
 - ii. Have the township set up an incentive program that sets aside an amount of money for each emergency service volunteer that can be used for township programs, as the member sees fit to do.
 - iii. Create a municipal hiring preference program for emergency service volunteers.
 - iv. Set up a municipal program that allows volunteers who work in town, or in nearby
- 

communities, to be released from their employment to handle emergency calls.

- v. Develop a volunteer incentive committee. This will allow your people to have a hand in solving their own staffing problems.
- K. Continue your existing recruiting program, even if you hire a career daytime staff. You must work to continually replace those people who support your operation from 1700-0700 hr.
- L. Work to revive your program for junior firefighters.
- M. Create a program that will locate firefighters from other communities that work within your district. The object of this is to find trained people who might be able to respond to actual fires during the 0700-1700 hr. time frame. Make inquiries as to whether employers are willing to participate in such a program.
- N. Explore the possibility of creating a tax incentive plan in Whippany Township that would encourage employer participation in return for a negotiated accommodation. This would assist in the implementation of J above.

4. Apparatus Recommendations

- A. Budget to replace chief's vehicle in 2005
- B. Monitor mechanical conditions of all vehicles
- C. Create an apparatus replacement plan that will allow for units to be replaced on a twenty-year basis. This combined with your existing maintenance program should maintain your fleet in good condition over their useful life.
- D. Consider each piece of apparatus as a candidate for refurbishment in the ten to twelve year life range.
- E. Continue to use mutual aid for your aerial device needs. You would have great difficulty responding with an aerial device from your existing station.

5. Safety-Related Issues

- A. Maintain the accountability system for fireground operations.
- B. Continue to improve your use of the Incident Command System of fireground command and control.
- C. Continue to maintain your respiratory protection program

6. Station Location Issues

- A. Station is now located on busy Route 10 in the Whippany section of the township.
- B. There are periods of traffic congestion that make it difficult to reach the existing station, and difficult to move the apparatus.
- C. Your property has suffered from the ravages of periodic flooding. This will happen again.
- D. ~~Sell the property on Route 10 and use the money to~~ benefit the fire company and fire district, under the guidance of your accountant and your attorney.
- E. Let the development patterns in the township, as supplemented by the location of your members determine the new station location.
- F. What looks right now may be shown as wrong by the passage of time.

7. Training and Safety Matters

My review of the existing training program indicates that you are to be commended for your commitment to training. It is my opinion, based upon state and federal guidance that you continue to work toward the training that was recommended in Section Three. We would also urge you to use your safety program at all times. It is crucial to expose

people to the information available at conferences and fire training schools. Without the influence of new ideas, a fire department can grow stagnant and fail to meet changing operational conditions with the most modern operational methods and equipment. We would urge you to use the outside training recommendations located in Section Three.

8. Fire Department Goals

I would recommend that the fire chief adopt the following as the goals for his operational tenure.

- A. Create better morale
- B. Increase the amount of training in the fire department
- C. Promote a greater spirit of brotherhood in the fire department
- D. Work to create a system of pre-fire plans

These are all important things to do. I would urge the chief to work hard to accomplish these goals. A number of people spoke to the need for pre-fire planning, but indicated that there was insufficient time to accomplish this important task. I would recommend this as something that could be accomplished by the career staff I have recommended.

I would also like to recommend that the fire district consider conducting a team building retreat so that the vision, mission,

goals, and objectives can be created for the department. This effort could also be used to address the many issues that exist which can create an undercurrent of mistrust in any organizations. I would suggest that any of the following is capable of assisting you in the development of an effective organizational encounter retreat.

These gentlemen could also be used for any mediation needs you might encounter.

Dr. Robert S. Fleming
1406 Heather Lane
West Chester, PA 19380
610-696-8269

Dr. William Reed
Reed & Associates
PO Box 211
Normandy Beach, New Jersey 08735
732-793-4200

Chief Ted Lowden
3 Eustace Terrace
Evesham, NJ 08053
856-810-8787

9. **Fire Department Recruitment Program**

I recommend that an ongoing volunteer recruitment program be developed so that members of the community, both existing and new, are made aware of the fact that volunteers are needed. Elements of the program would include:

- A. Written literature with photos which publicize the work of the fire department.
- B. A system of personal contacts with new members of the community.
- C. The creation of an agreement with the local electrical utility to include information about the fire department and its recruiting needs. This might also be accomplished through the gas, water, sewer, or any groups that have the ability to piggyback such material in local mailings.
- D. Press releases to place in the media

The fire department has made an important commitment to the future through its program for junior members. Though not a very active program at this time, I would suggest that the necessary time and effort be expended to revive it. This type of program has paid great dividends for a number of other communities. My fire company in Adelphia has had such a program for more than 20 years. A number of our officers, and past chiefs are graduates of the junior program. This program should be advertised in your local school system, as well as supported by an active, word-of-mouth membership campaign. We currently have 25 members in our junior program.

BIBLIOGRAPHY

Aronson, J. Richard, et al, Management Policies in Local Government Finance,
3rd ed., ICMA Washington, DC 1987

Barr, Robert, and John Eversole, Fire Chief's Handbook, 6th ed.,
Pennwell Publications, Tulsa, OK, 2003

A Basic Guide for Fire Prevention & Control Master Planning,
U.S. Dept. of Commerce, National Fire Prevention & Control
Administration, Washington, DC

Carter, Harry R. and Erwin Rausch, Management in the Fire Service, 3rd Ed.,
National Fire Protection Association, Quincy, MA, 1998

Carter, Harry R., Managing Fire Service Finances, International Society of Fire
Service Instructors, Ashland, MA 01721, 1989

Carter, Harry R and Lara Ragunas, Strategic Planning for Fire Protection,
International Society of Fire Service Instructors, Ashland, MA 01721,
1996

Clark, William, Firefighting Principles and Practices, Dun Donnelly, New
York, 1992

Coleman, Ronny J., Managing Fire Service Operations, Duxbury Press,
Duxbury, MA 1978

Community Fire Defenses: A Problem Solving Approach, National Fire Academy, Emmitsburg, MD 1984.

Compton, Dennis, et al, Managing Fire Services, 3rd ed., ICMA, Washington, DC 2002

Developing Fire Protection Services for the Public, National Fire Protection Association, Quincy, MA 2000

Fire Risk Analysis: A Systems Approach, National Fire Academy, Emmitsburg, MD 1984

Gratz, David, Fire Service Management: Scope and Purpose, Prentiss Hall, New York, 1972

Hickey, Harry E. Ph.D., Fire Suppression Rating Schedule Handbook, Professional Loss Control Educational Foundation, 1993

The New Jersey Municipal Data Book, Information Publications, Palo Alto, CA, 2002

National Fire Codes, National Fire Protection Association, Batterymarch Park, Quincy, MA 2002 November Meeting Edition

Fire Protection Handbook, 19th ed., National Fire Protection Association, Batterymarch Park, Quincy, MA, 2003

New Jersey Statutes Annotated, Title 40A Municipalities and Counties,
40A: 11 to 40A:End

Urban Guide for Fire Prevention & Control Master Planning,
U.S. Dept. of Commerce, National Fire Prevention & Control
Administration, Washington, DC, 1976

Walker, Warren, et al, Fire Department Deployment Analysis, The Rand
Fire Project, Elsevier Holland, New York, NY, 1993