Bureau of Fire Management Study for the City of Pittsburgh, Pennsylvania

prepared for the

Intergovernmental Cooperation Authority for Cities of the Second Class

Developed by



Enterprises Plano, Texas

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Executive Summary

A study of the Pittsburgh Bureau of Fire, Pittsburgh, Pennsylvania was conducted for the Intergovernmental Cooperation Authority for Cities of the Second Class. The Bureau of Fire provides fire protection services for the City of Pittsburgh. Emergency Response And Safety Education Enterprises, hereafter referred to as ERASE, of Plano, Texas was engaged by the Intergovernmental Cooperation Authority for Cities of the Second Class in June of 2004 and the study was concluded in November of 2004.

The study was initiated to review and assess the current operating aspects of the Bureau of Fire and to determine the most efficient and effective approach to providing the necessary fire protection services to the citizens of the City of Pittsburgh. Our direction and mission statement from the Intergovernmental Cooperation Authority for Cities of the Second Class (ICA) was to review the current conditions and then design the Bureau of Fire for the needs of the 21st century with the safety of the firefighters and general public and economic efficiency in mind. We focused on approaches to improve firefighter safety and their work environment while delivering fire protection services in an efficient manner. This process involved reviews of staffing, training, equipment, procedures, alarm activity levels, the current deployment plan for the resources of the fire bureau, the command structure, and many aspects of the city itself relative to what type of fire protection services are required and how they can be delivered. This report is divided into five sections which address the primary areas of concern: 1) Staffing, 2) Fire Station Location, 3) Apparatus and Fire Station Design and Condition, 4) Deployment Plan, and 5) Emergency Medical Services in the Fire Service. While performing the study other areas of concern were brought to our attention and these issues are mentioned in the body of this report in an overview perspective.

While performing the study it became very apparent that the topics of concern were interrelated and the recommendations for corrective action were dependent upon each other as well. It must be stated at the beginning of this report that for the Bureau of Fire to succeed in its mission with efficiency and effectiveness in mind, all of the recommendations in this report must be acted upon. The concept of picking and choosing individual recommendations while not pursuing others will not work as both the performance enhancement and fiscal objectives are reliant on each other being performed. An example would be the need to relocate a fire station, which would eliminate a fire Engine company and allow the personnel to be reassigned to provide personnel to fill vacant positions and reduce overtime costs. However, these changes would only work while still maintaining public protection levels if a new fire station was built to better service multiple areas, formerly served by several separate fire stations. All the recommendations are tied together and to achieve the benefits discussed in the report, in both a public safety and a financial aspect, the report in its entirety must be read and implemented.

This report is a summary of the findings of the project team and after each section the appropriate recommendations for the specific section topic are listed. Support documentation exists for our recommendations and in some cases examples have been included in the report itself. Due to the sheer volume of pages of documentation reviewed, we could not include all of the support materials in the report. However, references are made to specific documents in both the text and through the use of footnotes. ERASE and the City of Pittsburgh both have many documents relating to the support of the recommendations, if additional rationale or documentation is required.

One obvious fact that was apparent throughout the project was the lack of valid, reliable, and easy to access data from the Bureau of Fire. [Accuracy between city records and Bureau records was extremely limited.] The simple availability of up to date and current records was an issue in several areas of concern including personnel costs, emergency incident activity levels and policy matters. Our concern is that besides it making the study difficult, without this data easily accessible in an easy to use format we cannot imagine how the Fire Chief is running the Bureau in an efficient and effective manner. To implement the recommendations of this report the City will need a highly motivated well-educated Officer Corps, with a significant amount of leadership in the Chief Officers position. After reviewing the current state of affairs within the Bureau of Fire we are very concerned that the existing management team either has not been allowed to manage the Bureau or there is a lack of ability or motivation within the Chief Officer ranks. There apparently has been very little done in the way of requiring accountability on existing Bureau policies and enforcement of the requirements of the many policies. The City will have to find and employ qualified and motivated individuals in the key Chief Officer positions if it plans to implement the recommendations of this report with success.

On a positive note the many firefighters and officers who we dealt with during the performance of this project were very cooperative, informed, supportive, and very capable of implementing the recommendations of this report. Even in cases where we found equipment and / or Apparatus in poor condition and the requests of the field personnel for repairs had gone unanswered, the motivation and desire to perform well for the citizens and for the Bureau was still present. We also have obtained many letters, memos, and general correspondence between the organized labor union and the Mayor's Office where the union representatives acknowledged that station closings and company reduction plans were acceptable and that other steps to improve efficiency were available to the city as well. The fact of the desire of the firefighters in one on one situations as well as through their collective bargaining union, to reduce costs to assist the city in the current financial stress is very encouraging. Many of the cost savings measures recommended in this report will require cooperation between the City and the firefighter's union. The documentation that we have examined between the Mayor's Office and the president of Local 1 of the International Association of Fire Fighters demonstrates a willingness to cooperate in the restructuring and cost savings requirements identified in this report.

<u>Findings</u>

The Bureau of Fire is not operating in an efficient or in some cases, even in an effective manner. The current expenditure in overtime alone is \$18,536¹ per day or \$6,765,640.00 per year! This situation is the result of having 133 vacancies and the ongoing practice of filling all vacancies with overtime, even if the position is a non-essential position. Sick time monitoring, control of the use of buddy days, vacation and holiday scheduling all must improve and be coordinated to reduce this excessive use of overtime. Depending on the rate of attrition and the elimination of companies recommended in this report, the vacancies may be filled internally without hiring new recruits. If however, the company positions are not eliminated and a staffing pool does not exist, the City must consider hiring new firefighters to staff the vacancies.

While we have strong concerns (relating to validity and reliability) about much of the data acquired in the development of the study, the reduction in the number of working structure fires is quite obvious. Comments by firefighters as well as our own observations support the records detailing the fact that very few actual working structure fires are still taking place in the City. This fact is important as the impact of shift design changes, availability of companies for response, fatigue levels during shifts, and station locations are all affected by the emergency call volume. The reduction in structure fires, which is being seen nationwide, is typically tied into better public education, installed fire protection systems, and better trained firefighters. Also a better fire safe lifestyle now exist in the areas of home heating systems, lighting, electrical appliances and the many other sources of ignition that no longer are present within our homes and businesses. From whatever the source, the call volume of structure fires is down in the city and has been falling for many years. This reduction in activity levels gives the administration another opportunity to restructure the Bureau of Fire for the purposes of efficiency while maintaining a safe response plan for the firefighters and the community.

The current management of the Bureau of Fire is not enforcing many aspects of the organized labor contract, which impact staffing and overall personnel costs. The labor contract has very specific statements and clauses, which give management the right to control personnel costs and expenditures at a much greater level than currently being performed. Even without contract negotiations the city should be able to save significant amounts of operating costs simply by implementing a better and stronger management approach using the existing rules and policies.

There are significant opportunities for the City to negotiate some of the recommendations listed in this report, even before the contract negotiations begin for the next organized labor agreement between Local 1 of the IAFF and the City. There are several points of value for the firefighters in implementation of the recommendations and additional areas of compensation could be made available for those personnel who are at retirement age and are eligible to retire at the end of this year. We also have obtained copies of letters from Local 1 of the IAFF expressing their willingness to reduce companies, personnel,

¹ Average for the period January 01, 2004 through August 30, 2004

and to close fire stations, all in advance of the new contract negotiations. So, while we acknowledge that some of the changes may have to wait until the new contract is negotiated, we also believe that immediate action is possible on many of the recommendations.

Staffing

In order for a modern fire department to be prepared to deliver a safe and efficient service to the public it must be well administered. Strategic planning, fiscal responsibility in preparing and administering the financial aspects of department operations, human resource management, fixed and mobile resource management, fire and emergency operations, fire prevention activities, department training and wellness programs are examples of some of the major areas of administrative responsibilities. Good leadership and management are essential to the modern fire department. The ERASE team also considered this important aspect of fire department organization when preparing this report.

A review of the current staffing of the Bureau of Fire found that overall numbers of personnel were excessive and the assignment of these personnel was not performed in an efficient and effective manner. The current organizational structure needs to be altered significantly at the Administration level, and reorganized with a change in the numbers of companies and numbers of fire stations in the operational component of the Bureau.

The Administration of the department needs to be expanded and be better designed to ensure the appropriate level and quality of management oversight. The current expenditure of almost \$60 million dollars being supervised by one Chief Officer and one Assistant Chief is unrealistic and has led to inefficient management of the resources. To properly supervise the training component of the Bureau, the maintenance issues of both fixed and mobile assets, and the fire prevention effort, additional command officers must be appointed. Daily operations under current conditions require the recommended additional command assistance. With the new recommendations shown in this report, the additional positions will become absolutely essential.

Our review of the company staffing levels agrees with most aspects of the current situation, with a recommendation to staff 4 personnel on Engine Companies and 4 personnel on Ladder Truck Companies. However, we have a major difference in the shift design. Through the implementation of the recommended shift design and the reduction of companies (as shown in this report), our staffing will remain the same for the Engine and Truck companies. We also have recommended changing the ranks of the commanding officers on Engine companies to the rank of Lieutenant from Captain and the rank of the officers on the Ladder Trucks from Lieutenant to Captain. This step is logical based on the command responsibility facing the officers of the different types of

companies and has a significant cost savings factor too. Our estimates are that the city could save up to $$2.1 \text{ million}^2$ annually by making this change alone.

All Bureau of Fire staffing reductions are based on the concept of attrition and do not involve layoff's.

Fire Station Location

The evaluation of the current Fire Station Locations was undertaken by evaluating alarm response data, national standards relating to response times for structure fires and EMS incidents, terrain considerations, traffic considerations, and actual response time analysis by driving sample routes using a Global Positioning System.

In areas where the possibility of eliminating a fire station became apparent, we evaluated the types of structures, fire threat, and the location of the other supporting fire stations that would respond on a first alarm.

While conducting the study we realized early on that there were several stations that were very close to each other and with the advent of modern fire apparatus (better rate of response and higher capabilities on each apparatus), a change in emergency activity levels, and overlapping response zones it became obvious that the justification was present to close several stations. In addition, to improve efficiency in several areas we are recommending the closure of several stations with the building of new, more centralized stations to consolidate resources while maintaining acceptable response times into all response areas.

A more detailed look at the stations that are being recommended for closure and the identification of the new stations for construction is Section II of this report. We are also estimating station construction costs to be in the \$1 million to \$1.5 million range for two bay stations, however specific cost estimates will be needed once property is identified. As with Apparatus, we believe that a multiple unit purchase would be most cost effective and that a single design for City of Pittsburgh emergency response stations should be adopted.

Apparatus and Fire Station Design and Condition

In order for a modern fire department to deliver high quality services, personnel must have good facilities to work out of and good apparatus and equipment with which to deliver the needed services with safety, effectiveness, and efficiency in mind. The NFPA Standard 1901 for Automotive Apparatus provides guidance in regard to apparatus design, equipment, and maintenance. There are 3 NFPA standards that relate to Fire Station design and condition, NFPA 1402 Guide to Building Fire Services Training

 $^{^2}$ Due to not receiving various personnel costs (benefits and other types of compensation) from the city we have estimated these costs savings, but the numbers are on the conservative side as the current benefit package is a very expensive item and this was not included in our cost calculations.

Centers, NFPA 1581 Standard on Fire Department Infection Control Program (chapter 3 discusses station issues) and NFPA 1500 Fire Department Occupational Safety and Health Program which provides guidance in safety issue concerns in fire stations. These standards were considered during the evaluation of Pittsburgh Bureau of Fire apparatus and stations, along with the expertise of the ERASE team. During the numerous site visits performed by ERASE personnel five days were specifically dedicated to apparatus and station issues. During site visits the team members gained a good general understanding of the current conditions of the fire stations and apparatus used by the Bureau of Fire.

Of serious concern to our team and what should be of serious concern to the City is the poor quality of much of the emergency Apparatus and the equipment in use by the Bureau of Fire. We noted many safety violations which impact both firefighter safety and the safety of the general public. These violations are a result of design and maintenance issues associated with the response vehicles and the equipment the firefighters use on emergency scenes. In several cases even the firefighters assigned to specific pieces of Apparatus could not tell us where their Apparatus was or when it was coming back to their station, after being removed for repairs. Many of the reserve pieces of equipment still in use have long surpassed their safe working life and should be replaced immediately.

Besides the obvious poor conditions in stations and with the Apparatus conditions, we are very concerned about the viewpoint of management to let the fleet and the stations sink to their current status and then to let these issues continue. There is significant liability exposure to the City from both employees and from civilians if a loss incident occurs and the poor condition of the Apparatus or the station comes into play as part of the cause.

A more detailed look at the current situation is identified in the body of the report with Station and Apparatus numbers identified along with the condition of the property or vehicle.

Deployment Plan

The major recommendation for change in this report involves the organizational design of the Bureau of Fire's deployment plan. We are recommending that the City negotiate a change in the shift design that the firefighters work in the operations part of the Bureau of Fire. Currently, firefighters work what is referred to as a 10 / 14 shift. This work schedule involves working a rotation of four -10 hour day shifts followed by four days off, then four -14 hour night shifts, then four days off. This schedule involves a four "platoon" system, where one platoon is on days, one is working nights, and two are off duty on any given day/night. This system was appropriate long ago when fire activity was high, the work was more physical with less technology to assist in fire suppression services, and fire companies were spread thin and far apart. At this time in history, longer shifts were considered to create too much mental and physical fatigue in firefighters, to the point of creating an increased safety hazard.

Today, we have high performance apparatus, early warning detection systems, better portable equipment, faster response times, and a greatly reduced incident alarm rate of structure fires. The use of a 24-hour shift has been prevalent in urban areas of the United States for many years now with great success. We believe that the City must go to the 24 / 48 hour shift to maintain firefighter and public safety while at the same time saving operating costs. This shift has firefighters working for a 24-hour period in the fire station and then being off duty for 48 hours. There are various requirements to this shift design and they are explained in more depth in the body of the report. However, the immediate advantage is the reduction of the 4 platoons to a 3-platoon system. This eliminates the officer positions from one entire platoon and consolidates staffing onto three shifts to eliminate vacancies and overtime costs.

The process of negotiating this change with the organized labor representatives must begin immediately as this is the corner stone of the largest amount of savings in the personnel cost category while at the same time ensuring an adequate response force. There are several advantages for the firefighters that will result from switching to this 3 - platoon system for the work schedule. A detailed design of how this schedule works and the associated issues for negotiations is shown in Section IV of this report and a cost savings chart showing current and future costs is located in Appendix A of the report.

EMS in the Fire Service

The issue of the Bureau of Emergency Medical Services (EMS) and its future was included in our list of topics to review, as there is a cost effective scale of efficiency when fire service personnel deliver the EMS services for a community. The fire service already has fire stations placed throughout the community, most firefighters already have first aid – first responder – or Emergency Medical Technician training, and the amount of fire activity is getting less and less all the time thus allowing more time to deliver EMS related services. All over the United States major urban areas brought the concept of EMS into the fire service in the late 1970's and early 1980's. A full integration of EMS into the fire service with Advanced Life Support Paramedics became a reality for most departments by 1990. The City of Pittsburgh is unique in that the firefighters did not embrace or attempt to get the EMS service integrated into the Bureau of Fire. While there are many comments and statements made about why EMS is not in the Bureau of Fire, the obvious fact is that it was a political issue where the firefighters did not want to provide EMS services and no one in the City administration has ever forced the issue with the firefighters.

Nationwide, we know EMS in the fire service works very well and we know it has become a service saving factor in many cities where the number of working fires has dropped significantly and it was the EMS activity that kept firefighters busy and employed. Firefighters can be trained as Emergency Medical Technicians and as Paramedics, and they can deliver such services for a reasonable cost.

We believe that for quality of service reasons for the public, and for cost efficiency for the City, the Bureau of EMS should be merged into the Bureau of Fire and fully

integrated. This process would probably take 12 to 24 months to complete as the training time required for cross training is significant at the Paramedic level and the EMS personnel would need to be trained in the fire service operations. The positive benefit to this merger from a financial consideration is that the reduction in emergency calls relating to "fire" incidents has created an available workforce that could also handle EMS incidents. With cross trained (Firefighter/EMT or Firefighter/Paramedic) personnel in all Bureau of Fire stations and a valid deployment plan for the EMS response vehicles, EMS incidents would be handled quickly and professionally with a smaller workforce than currently employed (considering the staffing numbers of both the Bureau of Fire and the Bureau of EMS).

The Fire/Rescue deployment plan would need to identify specific stations and EMS vehicles that would always be staffed based on EMS activity in the City. In fire station areas where the fire response activity is minimal, the City could position both a fire apparatus and an EMS vehicle with a compliment of one company of cross trained personnel. This company would handle whatever type of emergency call came in first, fire related or EMS. This approach provides the quickest response to the residents in the immediate vicinity for either a fire or an EMS related incident. The end result is a more efficient use of on duty personnel with less overall expense as you are utilizing just one service instead of two to protect the residents. The Bureau of EMS budget and staff would be merged into the Bureau of Fire and the final numbers of personnel and expenditures would be a composite total instead of a simple addition of numbers.

The current staffing at the Bureau of EMS is 167 and many of these personnel already have some type of fire service background as well as EMS. With the merger taking place after cross training is completed and after evaluating which stations could support EMS responses with their other duties, the end result might be an equivalent of 30% to 40% of the EMS positions could be handled and / or supported by Bureau of Fire personnel. The influx of the EMS budget money and the reduction in overall required positions would result in an increase in the Bureau of Fire budget (to handle EMS) but not as much as a simple addition of the two Bureau budgets just being added together.

At the very least the Rescue and Hazardous Materials Response functions need to be integrated into the Bureau of Fire as these two service needs will not adequately be supplied by private sector vendors and the services also do not fit with hospital based EMS programs. It would also be advantageous to have the access to the EMS Stations and their heavy Squads for use with the implementation of several of the recommendations in this report, which result in additional savings for the City.

Conclusion

If the City provides for a strong leadership team in the Bureau of Fire and endorses the recommendations in this report, significant cost savings should be attainable in the very near future. We believe that cost savings in the amount of \$4 million to \$6 million can be established in 2005, even without all points negotiated in the new organized labor contract. In 2006, these cost savings should increase to \$6 million to \$8 million and with the implementation of the new contract the cost savings for 2007 should be at \$15 million per year (based on expected attrition, new station completion, and company reduction). In 2008 the full cost savings of \$20 million per year should be achievable. These cost savings factors are conservative and the entire savings may be realized in as little as two years if the City negotiates all the necessary changes within the firefighters organized labor contract and is able to implement a strong management team for the administration of the Bureau of Fire.

In the first two years, the savings realized from taking the cost savings actions identified in this report may not be true savings as the expenditure for Apparatus replacement and Fire Station construction and upgrades will approximately equal the anticipated savings.

If however, the other recommendations are put into place and properly administered, the first two years savings would be greater and a positive reduction would be achievable in the overall budget.

Section I – Staffing

A) General Concepts Relating to Staffing

Fire department activities are a combination of routine tasks and emergency operations. The routine tasks are associated with training, fire prevention (fire inspections and public education programs), maintenance of stations and equipment, special event stand bys and other community services. Emergency operations include responding to various types of hazardous situations, which endanger life and / or property. Emergency operations are often strenuous, stressful, and need to be completed without hesitation or delay.

To safely perform functions at emergency scenes, especially structure fires, require adequate numbers of well trained and equipped personnel. Basic activities at structure fires include rescue (removal of trapped or injured persons), forcible entry and ventilation (providing access and removing heat and smoke), fire confinement and extinguishment (securing an adequate water supply and putting in place appropriate hose lines). Often these activities need to be performed simultaneously.

A fire department's non-emergency tasks can be scheduled and postponed, if necessary resources are unavailable. However, the emergency operations component requires the resources immediately. The very nature of an "emergency" makes the appropriate use and immediate availability of the resources essential.

The question of staffing levels then becomes one of establishing a safe environment for the citizens and firefighters, while maintaining fiscal responsibility for the taxpayers. An adequate number of firefighters must be available to answer the types of emergency calls that are received from the public, while at the same time controlling operational costs. It should also be noted that sheer numbers of firefighters do not improve public safety. Proper staffing is not just about numbers, it is about well trained, physically fit, well managed response forces carrying out their required duties. When referring to the various standards and recommendations used in fire service operations in the United States, the reader must remember that these documents are all based on the premise that the firefighters involved are meeting the physical fitness, training, Incident Command Systems, safety, equipment, and many other standards/recommendations including in the same resources.

For example, while referring to a standard reference of how many firefighters (X) should respond to a structure fire, one must be aware of the fact that the standard is expecting the X number of firefighters to all be physically fit and trained to meet firefighter certification standards, wearing and using state of the art equipment, responding on emergency apparatus (vehicles) that meet standards, and using modern firefighting tactics. A response force of the X number, which is not meeting all of the criteria mentioned, is not going to get the job done, at least safely and in some cases a less than X response force meeting all of the criteria may be more efficient and safer.

Therefore, while considering staffing recommendations and references, the reader must also be cognizant that the individual firefighter and the associated equipment used by the firefighter must be in top shape and up to acceptable performance criteria. One cannot pick and choose which component(s) of fire service organization they wish to meet or address as they are all interrelated when it comes to staffing concerns.

The National Fire Protection Association (NFPA) makes recommendations on staffing levels in various publications such as "NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments" 2001 Edition and "Organizing for Fire and Rescue Services -a special edition of the Fire Protection Handbook". These two documents along with other standards and recommendations from the Occupational Safety and Health Administration (OSHA), the American National Standards Institute (ANSI), the National Institute of Occupational Health and Safety (NIOSH), the Environmental Protection Agency (EPA) and others were taken into consideration as ERASE developed this report.

Proper staffing for emergency operations also includes the essential components of incident command and safety. Well-trained and equipped fire personnel are inefficient and safety is compromised if they are not working within a safe and efficient command and safety structure. NFPA also provides guidance for appropriate staffing in these areas. Employing an Incident Command System, which accommodates the concepts of Unity of Command³, Span of Control⁴ and Common Terminology⁵, is a recognized concept by the nations fire service in general, as well as other government based response agencies. A designated Safety Officer is also recognized as essential to safe operations at emergency scenes such as structure fires and other high-risk fire department operations. ERASE also considered these essential components as we assessed the current and future staffing levels and deployment plan for the City of Pittsburgh – Bureau of Fire.

There are three basic types of companies used in the fire service. These companies are referred to as an Engine, Truck or Squad. These units or companies perform the following basic functions at fires: Engine companies are responsible for water supply and placing appropriate water streams to confine and extinguish fire, Truck companies are responsible for forcible entry i.e. providing access to all areas of the structure, ventilating heat and smoke as well as search for and rescue of occupants, Squad companies are used to reinforce tactical operations as needed.

³ All personnel have one and only one supervisor

⁴ The number of subordinates a supervisor can adequately supervise –at an emergency 3-7, 5 is ideal

⁵ A nationally agreed upon list of definitions and terms for fire service operations

B) Current Pittsburgh Bureau of Fire Staffing

Operations

Information provided to ERASE, relating to Pittsburgh Bureau of Fire staffing levels by the Bureau of Fire Administration and the City Administration, differed. The Fire Bureau information identifies "personnel deployment" at 841 total personnel including 1 Chief, 1 Assistant Chief, 5 Deputy Chiefs, 21 Battalion Chiefs, 6 Instructors, 137 Captains, 43 Lieutenants and 627 Firefighters, on the same document it also shows a total of 868 personnel deployed in the five operational districts of the City. The City Administration provided information indicating, "allocated staffing" at 891 including (217 per each of 4 shifts) or 868 plus 23 administrative positions. For consistency and reliability in actual financial costs, the figures provided by the City of Pittsburgh Administration will be used in this report.

The Bureau of Fire has organized its response force into 5 response districts. A Deputy Chief, who is in charge of the entire shift, citywide, supervises the on duty shift. A Battalion Chief who is responsible for the fire companies assigned to it supervises each response district. Deputy Chiefs and Battalion Chiefs respond via automobiles with emergency vehicle markings, warning lights and sirens to alarms.

The current assignment of Engine and Truck companies to each district is as follows;

District 1 - Engines 3 - 32 - 34 - 35 - 36 - 37 - 38 - 39Trucks 33 - 34District 2 - Engines 5 - 10 - 12 - 13 - 18 - 19Trucks 13 - 14District 3 - Engines 6 - 7 - 8 - 11 - 15 - 17Trucks 6 - 8 - 17District 4 - Engines 4 - 20 - 21 - 22 - 23 - 24 - 25Trucks 4 - 24District 5 - Engines 26 - 27 - 28 - 29 - 30 - 31Trucks 26 - 30

Note: Engines 18 - 23 - 27 are Quint⁶ apparatus that also function as a Truck company

Each of the engine and truck fire companies has a minimum on duty staffing of 4 personnel, 1 officer and 3 firefighters. The three Quint companies are staffed with 5 personnel. A Mobile Air Compressor (MAC) unit is staffed by 1 firefighter and responds citywide.

⁶ A Quint has an aerial ladder, pump, hose, water tank, and a compliment of ground ladders

Administration

Information provided by the Bureau of Fire states that the there are 28 personnel assigned to staff positions (Administration, Training and Fire Prevention). According to information provided by the City Administration, there are 23 staff positions in the Bureau of Fire. For consistency we used the City Administration figures for staff positions as in the case of the operations personnel.

The staff positions are as follows;

- 1 Chief of Bureau of Fire
- 1 Assistant Chief of Operations
- 1 Battalion Chief
- 6 Instructors
- 14 Fire Prevention Specialists

C) Recommended Staffing

Operations

During the development phase of this report ERASE project team members performed on site visits to the City of Pittsburgh. During this time we were able to get a good understanding of current operations in regard to staffing, the type of structures located in the City as well as the topography in which the City is situated. Also during this time many documents provided to our team were reviewed and considered in the process of developing this report. The documents included fell into over 20 categories many of which related to staffing issues. Examples of these are the current labor contract, mission statements, fire reports, deployment plans, zone maps, standard operating procedures, the Ernst & Young study of 1991, the Carnegie Mellon University Study of 2003, the Municipalities Financial Recovery Act City of Pittsburgh June 11, 2004, the Allegheny Institute for Public Policy Report on Pittsburgh's Finances: A Comparison of Peer Group Cities February 2004, the Proposed Restructuring of the Public Safety Department of Emergency Services "Blending EMS and Fire" which was provided by the Mayors Office, as well as information provided by IAFF Local #1 Pittsburgh Firefighters. The use of applicable standards information with heavy emphasis on NFPA standards and the expertise of the team members who collectively have over 100 years of experience in the fire service were also incorporated in developing this report.

It should be noted that fire department staffing varies greatly throughout the nation's fire service. Some departments staff fire companies with 1 or 2 firefighters while others in high density heavily populated areas staff 5 or 6, still others in suburban areas staff with 3. There are many factors that must be considered in determining staffing levels on each fire company. These factors include life hazard considerations, the type of structures i.e. size, construction, age, and installed fire protection, water supply, exposures, access, firefighting equipment, and the training, experience and fitness level of the firefighters.

In chapter 5 of NFPA 1710⁷ Staffing is discussed and the recommended minimum staffing for Engine and Truck Companies is 4 personnel. Chapter 5 also discusses "Other types of companies" under which the category of Squad companies can be considered. Squad companies will be included in this report. In the NFPA textbook <u>Organizing for Fire and Rescue Services</u> staffing is discussed in regard to initial attack response capability. On page 132 in Table 6.1 of the text it states that for medium hazard occupancies the initial response should not be less than 16 firefighters, 1 chief, a safety officer and a rapid intervention team. Considering factors specific to the City of Pittsburgh in order to accomplish these minimums, 4 personnel should be assigned to Engine, Truck and Squad⁸ companies. Four personnel on each fire company will allow for a response system within the City of Pittsburgh that brings sufficient numbers of firefighters to the scene of a fire emergency.

As an additional point of reference, The <u>Fire Chief's Handbook</u> 9 (page 550) shows national averages of 3.5 for Engine and 3.4 for Truck staffing for departments serving populations of 100,000 to 500,000. The city of Pittsburgh population was shown as 327,898 in 2002¹⁰ and maintaining the staffing levels per company at 4 meets and exceeds this range.

As stated, a chief officer and a safety officer should also be part of a safe and efficient response system. Providing staffing for chief officers i.e. Deputy and Battalion Chiefs along with a shift safety officer is also part of this recommendation.

Administration / Fire Prevention / Training

As stated in the Executive Summary, proper administration of a modern fire department is essential. Considering the organizational size and the fiscal aspects of the Pittsburgh Bureau of Fire a properly staffed Administration Division must be developed and implemented. The officers in the Administration must be well trained and experienced in fiscal management, personnel management, resource allocation and the art of leadership. With the many changes and challenges facing the City and the Bureau of Fire, highly motivated officers with a 21st century vision are essential for the proper administration of valuable and limited fiscal and personnel resources.

Fire prevention is a critical component of any fire protection program. The elimination of uncontrolled fire is the primary mission of the fire service and is a much more desirable approach to the protection of the citizens than just relying on the proficiency of the response force. Fire prevention efforts reduce the occurrence of uncontrolled fires thereby reducing human suffering, deaths, and loss. A reduction in the number of fires requiring intervention by the response force limits the exposure of firefighters to

⁷ NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments 2001 Edition, and Organizing for Fire and Rescue Services; A Special Edition of the Fire Protection Handbook 2003.

⁸ A Squad Company can operate with less than 4 personnel if necessary

⁹ The Fire Chief's Handbook Sixth Edition copyright Penn Well Corporation 2003

¹⁰ Allegheny Institute Report #04-01 February 2004

dangerous situations, maintains the value of structures and the associated tax base and keeps the response force in service and available. All of these factors reduce the cost of uncontrolled fire to the city. Even in incidents where a fire does start, fire prevention efforts have been shown to assist in containment and protection of exposures, thereby limiting the danger and damage of uncontrolled fires. While all firefighters are responsible for fire prevention, this component must also be properly staffed with trained and experienced leaders who can design, manage, and evaluate the impact of fire investigation, code enforcement, plan review, and public education.

Training is a critical component of delivering a safe and efficient fire service response to the community. Firefighter safety, efficient fire ground operations resulting in quality rescue and suppression services, workers compensation injury costs, apparatus and equipment costs and property loss are all affected by the quality and applicability of the training provided to firefighters. A focused training element within the administration of the Bureau of Fire is essential to ensure that the response force is current on safe work practices as well as policy and procedures. With the many changes recommended in this report we believe that the training element of the administration will be essential to implement the recommendations of this report.

The following positions are recommended for the Administration / Fire Prevention / Training Division of the Bureau of Fire with the associated general responsibilities;

1 - Chief of Department; Leadership of the entire department, providing vision and mission philosophy, strategic planning, fiscal management, overall personnel management, and overall operational control.

1 – Assistant Chief - Operations; Leadership, supports and enhances the overall vision, mission, and philosophy developed by the Chief, assists the Chief in all matters and is capable of functioning as the Chief of Department in the chiefs absence. Ensures all operational goals and objectives are being met.

1 - Assistant Chief / Fire Marshal - Fire Prevention; Leadership, supports and enhances the overall vision, mission, and philosophy developed by the Chief, assists the Chief in all matters and is capable of functioning as the Chief of Department in the chiefs absence. Ensures all Fire Prevention (Arson/Fire Investigation, Code Enforcement, Public Education) and master planning goals and objectives are being met.

1 – Director of Administration; Leadership, assists in the overall administration of the department in such areas as human resources, management information systems, and communications. (Position could be a civilian position)

1 – Deputy Chief of Fixed and Mobile Assets; Leadership, ensures all department fixed (fire stations, training areas, and all Bureau of Fire structures) and mobile (apparatus, automobiles, special vehicle units, and portable equipment) assets are properly designed, developed, built, and maintained. Maintains asset inventory control, budget management

on maintenance costs, and supervises new station construction and upgrades to existing structures.

1 – Deputy Chief of Training and Safety; Leadership, ensures all department personnel are properly trained using the latest training and assessment methods, administers a safety and wellness program, including physical fitness, according to modern standards. Develops and assists in the delivery of policy and procedures training programs.

8 - Fire Prevention Specialists; carry out goals and objectives per the Assistant Chief of Fire Prevention.

2 - Training Safety Specialists; carry out the goals and objectives of the Deputy Chief of Training and Safety.

D) Recommended Staffing Levels

The following staffing levels are based on maintaining the per company level staffing as identified in this section of the report, with a reduction in the number of companies and a change in the shift design currently in use in the Bureau of Fire, as identified in Section IV – Deployment Plan of this report.

The recommended staffing levels fall well within national averages. The book published by the NFPA <u>Organizing for Fire and Rescue Services¹¹</u> discusses staffing practices. On page 117 it states that staffing levels for cities of 250,000 or more population have staffing levels in the range of .5 to 2.9 firefighters per 1000 population. The ERASE recommendation calls for total department staffing of 592, which is a ratio of 1.8 firefighters per 1000 population (592 personnel divided by 328,000 people). If the ratio is figured for the minimum on duty shift staffing of 501(167 per shift X 3 shifts) the ratio is 1.5. This puts the ERASE recommendation in the middle of the national averages for cities in the population range of Pittsburgh.

Staffing for each of 3 shifts;

- 1 Deputy Chief
- 5 Battalion Chiefs (one for each of 5 response zones in the City)
- 1 Training / Safety Officer
- 25 Lieutenants (one for each of 25 Engine companies)
- 15 Captains (11 Captains for 11 Truck companies, 4 Captains for 4 Squad companies)
- 75 Firefighters (including drivers) for the 25 Engine companies
- 45 Firefighters (including drivers) for the Truck and Squad companies
- 25 Firefighters used as Floaters

Total Shift Personnel for each of 3 shifts 192

¹¹ Organizing for Fire and Rescue Services; A Special Edition of the Fire Protection Handbook 2003

Staffing for Administration / Fire Prevention / Training

- 1 Chief of Department
- 1 Assistant Chief of Operations
- 1 Assistant Chief/ Fire Marshal of Fire Prevention
- 1 Director of Administration
- 1 Deputy Chief of Fixed and Mobile Assets
- 1 Deputy Chief of Training and Safety
- 8 Fire Prevention Specialists¹²
- 2 Training and Safety Specialists

Total Administration / Fire Prevention / Training personnel 16

Total Staffing of the Pittsburgh Bureau of Fire 592 (576 Operations plus 16 Administrative / Fire Prevention / Training)

Comparison of Current and Proposed Staffing

Current Pittsburgh Bureau Allocated Staffing	891
Proposed Staffing	592
Net Change	299

Refer to spread sheet in Appendix One for detailed cost analysis.

¹² This number only accounts for one Captain to supervise the fire investigation requirements of the city, as the future of the cooperative fire/police Arson investigation unit appears uncertain at this time

Section I Recommendations

These recommendations comply with <u>NFPA 1710 Standard for the Organization and</u> <u>Deployment of Fire Suppression Operations, Emergency Medical Operations, and</u> <u>Special Operations to the Public by Career Fire Departments 2001 Edition</u>

C) Recommended Staffing

I -C - 1. Staff and respond Engine and Truck companies with a minimum of four personnel, one officer and 3 firefighters.

I - C - 2. Assign four personnel to Squad companies and respond with no less than three personnel, one officer and 2 firefighters

I - C - 3. Staff 1 Deputy Chief and 1 Safety Officer city wide, and 5 Battalion Chiefs one for each of the five response zones in the City.

I - C - 4. Staff the Administration and Fire Prevention Bureau with the following positions;

- 1 Chief of Department
- 1 Assistant Chief of Operations
- 1 Assistant Chief / Fire Marshal of Fire Prevention
- 1 Director of Administration
- 1 Deputy Chief of Fixed and Mobile Assets
- 1 Deputy Chief of Training and Safety
- 8 Fire Prevention Specialists
- 2 Training and Safety Specialists

D) Recommended Staffing Totals

I - D - 1. Staff the Pittsburgh Bureau of Fire with 592 total personnel of whom 16 are administrative, fire prevention, and training personnel and 576 are operations shift personnel.

Section II – Fire Station Location

A) Response Time and Station Location

Of significant importance to the Bureau of Fire response criteria is station location and response times. The ERASE Team was given several items to help review and understand current station locations in relation to response times. Various maps of the city were provided and appropriate markings entered on them to facilitate the use of information relating to current and proposed station locations. Additional materials noting response levels, response times to different areas, and other data were also reviewed in order to help gain a good understanding and to evaluate the current situation and then formulate sound recommendations.

NFPA standard 1710 defines "response time" as "The time that begins when units are en route to the emergency incident and ends when units arrive at the scene". This is an important point to comprehend as many people misinterpret that the standard, when referring to response time, is considering the time frame from when the call is first received until arrival at the emergency. [In Chapter 4 of the Standard, response time objectives are stated as follows: one minute for "turn out time" - safely don protective clothing and be on board apparatus with seat belt on (which is not part of the "response time"), a 4 minute response time for the first arriving unit and eight minutes for the arrival of a first due assignment (additional response units on first alarm), or in the case of a medical emergency 8 minutes for the arrival of advanced life support personnel] It should be noted that this general time does not include several other factors that affect the overall time of response from onset of the emergency. Specific comments from the standard are found in Appendix 5 of this report.

In reality the overall time of response to an emergency consists of the time it takes to recognize the emergency, the time it takes to call for assistance, the time it takes for the dispatch center to take the information from the caller and dispatch the appropriate response, the turnout time of the responders and the actual driving time to the emergency scene under the current situation in regard to weather, road and traffic conditions.

Generally apparatus are considered to travel at an "average" speed of 35mph. It should also be generally acknowledged that this might be a nice average but isn't always attainable for a number of reasons. There are many things, which can impact response time and speeds, and should be considered when anticipating response times for apparatus. The total response time involves all of the above information and should be considered in its entirety when computing and figuring response times.¹³

Because of the terrain that most apparatus has to respond to throughout the city we recognized that some station locations had been strategically located many years ago as a

¹³ Fire Chief Magazine, May, 2001, Travel Times and the myth of the 35mph apparatus, Ronald J. Coleman, Primedia Business Magazines and Media

result of bridges that were not serviceable, community interaction, incident occurrence rates, and a host of other issues. However, over time there have been many dynamic changes to these same areas and a review of stations, their locations, response times, and response times from potential new station locations was required.

Suggestions have been made by other organizations about station location and apparatus deployment. These organizations included the <u>Ernst & Young Study of 1991</u>, the <u>Carnegie Mellon University Study of 2003</u>, the report <u>Blending EMS and Fire</u>, the information provided by the Mayor's Office and information provided by the Pittsburgh Firefighters Union Local #1. This information included the number of fires that each station responded to in their areas and potential response times from some of those stations as well as distance and coverage overlap information. After reviewing this information and performing our own analysis it became apparent that changes should be made. While some station locations and response times are adequate, it was noted that several stations were very close to other stations; sometimes the response times were within seconds of each other to the same locations. Some stations, which are very close to each other, have been deployed with an Engine in one house and a Truck company in another. Yet, these same stations responded to the same incidents in the same response area as first due companies.

It became obvious that some stations should be closed, others relocated, and some established as multi company stations to improve efficiency while maintaining acceptable response times.

B) Response Time Analysis – Existing Stations

In order to see how response times from some of these existing stations might work in a potential redeployment plan we surveyed a response time trial during daytime response in these areas in several different directions from the noted stations.

The methodology for this study included going to the fire stations identified in the following tables and driving from these stations in either three or four different directions¹⁴ to various points¹⁵ in the station's response zone. The sample response data acquired in our study was obtained by driving the most direct route, during normal traffic conditions at mid day and while following all traffic control signs and signals. Average speeds varying from a low of 7.7 mph. up to a high of 32.6 mph were achieved during the analysis based on the streets used and the associated traffic conditions. A Garmin Global Positioning System (GPS), Model 2610 using Mapsource North American City Navigator version 5 software including streets for the City of Pittsburgh was used to assist in conducting the research. Times and distances were calculated while moving. The GPS did not calculate the time that the test vehicle used for the study was sitting at stop lights, stop signs or in stalled traffic.

¹⁴ Selection was based on the current streets available to traverse the stations immediate response zone ¹⁵ Determined by how far we traveled in a period of three minutes or two miles, which ever came first

After performing a general review on the station locations throughout the city, a review of emergency activity (types of responses, number of responses, and threat potential) levels and location of first alarm companies supporting the primary response company, we selected the following stations as being the most redundant and reasonable to eliminate or relocate. It should be noted that the team identified areas for station relocation where appropriate. However, we are not necessarily identifying the particular exact locations used for test response times as the sites for new fire stations to be built. This applies to all of the noted station relocation sites used in this review.

Station 25	Time: 0940		
Riota Way & Colerain St	ET: 3.0 Min	Distance: 1.2 Miles	Avg Speed 13.7mph
2819 Brownsville Rd	ET: 3.0 Min	Distance: 1.1 Miles	Avg Speed 14.0mph
2920 Home	ET: 3.0 min	Distance: 1.0 Mile	Avg Speed 13.4mph

The first two stations reviewed were Stations 25 & Station 23:

Station 23	Time: 1015		
Riota Way & Colerain St	ET: 1.3 Min	Distance: 0.3 Mile	Avg Speed 10.6mph
433 Linview Ave	ET: 3.0 Min	Distance: 0.9 Mile	Avg Speed 17.1mph
2500 (Street Name N/A)	ET: 3.0 Min	Distance 1.0 Miles	Avg Speed 17.0mph

We noted that the response times to some of these areas are very close together and could easily be improved by combining these stations into one new location. In reviewing some potential locations the team looked at areas where a station could potentially be placed to combine these two stations. A general area that the team identified for relocating and combining Station 25 & Station 23 was in the area of Brownsville Road and Becks Run Road. While no specific address is recommended for this relocation, response time data was acquired from this intersection as a representative sample for evaluation and demonstration purposes.

Brownsville & Becks Run	Time: 1028		
803 Agnew	ET: 3.0 Min	Distance: 1.3 Miles	Avg Speed 23.4mph
10 Esther St	ET: 3.0 Min	Distance: 0.9 Mile	Avg Speed 14.6mph
Sta. 25 to Intersection	ET: 1.5 Min	Distance: 0.8 Mile	Avg Speed 25.4mph
2819 Brownsville Rd	ET: 2.9 Min	Distance: 0.9 Mile	Avg Speed 14.6mph

The next two stations the team identified as stations that could possibly be combined into one new location were Station 21 & Station 22:

Station 21	Time: 1140		
1102 Mifflin Rd	ET: 3.0 Min	Distance: 1.3 Miles	Avg Speed 22.1mph
549 Glass Run Rd	ET: 3.1 Min	Distance: 1.1 Miles	Avg Speed 22.1mph
1969 Streets Run	ET: 3.4 Min	Distance: 1.7 Miles	Avg Speed 25.1mph

Station 22	Time: 1215		
1206 Arlington Ave	ET: 3.1 Min	Distance: 1.0 Miles	Avg Speed 17.8mph
300 Felmouth	ET: 3.1 Min	Distance: 1.4 Miles	Avg Speed 22.8mph
300 Felmouth	ET: 3.0 Min	Distance: 0.8 Mile	Avg Speed 19.5mph

Response times for Station 22 going in two different directions took us to the same address in the same period of time. Therefore, that address is shown here twice since it was accomplished using the same criteria for time and distance.

In Battalion 1 there were two stations that were identified that could be relocated and/or combined. These were Stations 35 and Station 34.

Station 35 (E35)	Time: 0940		
Truck 34 Station	ET: 1.8 Min	Distance: 0.9 Mile	Avg Speed 19.8mph
2802 California	ET: 3.0 Min	Distance: 1.0 Mile	Avg Speed 20.0mph
340 Lincoln Ave	ET: 3.0 Min	Distance: 1.3 Miles	Avg Speed 22.6mph

Station 34 (E34)	Time: 0911		
4900 Perry Highway	ET: 3.0 Min	Distance: 1.1 Miles	Avg Speed 19.4mph
Milroy St & East St (Int)	ET: 3.0 Min	Distance: 1.5 Miles	Avg Speed 25.0mph
Truck 34 Station	ET: 3.0 Min	Distance: 1.7 Miles	Avg Speed 27.4mph

A potential location to relocate a new station was identified at or near the intersection of Berhoff & Woods Run. This area has several lots and vacant buildings that the city could potentially acquire for redevelopment of a multiuse station.

Berhoff & Woods Run	Time: 1025		
4081 Brighton Rd	ET: 2.9 Min	Distance: 1.2 Miles	Avg Speed 24.2mph
1816 Brighton Rd	ET: 3.1 Min	Distance: 1.4 Miles	Avg Speed 25.6mph
Doerr St & Beaver Ave	ET: 3.0 Min	Distance: 0.9 Miles	Avg Speed 18.1mph
Truck 34 Station	ET: 0.5 Min	Distance: 0.1 Mile	Avg Speed 7.7mph

An additional location that could be considered was located at or near the intersection of Marshall Avenue and Danbury.

Marshall Ave & Danbury	Time: 1058		
Truck 34 Station	ET: 3.0 min	Distance: 1.2 Miles	Avg Speed 25.6mph
2403 Perrysville Ave	ET: 2.9 Min	Distance: 1.2 Miles	Avg Speed 25.4mph
3341 Delaware St	ET: 2.3 Min	Distance: 1.1 Miles	Avg Speed 18.8mph
Marshall Ave & Atmore St	ET: 1.5 Min	Distance: 0.6 Mile	Avg Speed 25.4mph

We also identified the possibility of closing Station 13 with Station 20 taking over the Station 13 response area. With that thought in mind the team measured the time and distance from Station 13 to Station 20 for this purpose.

Sta. 13 to Sta. 20	Time: 1120		
Station 13 to Station 20	ET: 4.25 Min	Distance: 2.3 Miles	Avg Speed 32.6mph

C) Results of Response Time Analysis

The times and distances driven during our on-site visits demonstrated that several of the stations currently in service could be combined into one station to give better service to the citizens the Bureau of Fire serves, as well as providing a potential significant cost savings to the city. In many cases the test vehicle would end up driving by or very near another fire station during one of the legs of the test drive. We believe that building new stations that can adequately house and support all of the types of apparatus that are necessary to serve the citizens of that area can have a positive impact on the community at large, and the firefighters that are housed in those stations.

Additionally, housing two or more companies that are due on the first alarm together will assist in training, procedure development, and help to insure that adequate personnel are on the scene in an acceptable period of time to effectively combat the fire or other emergency and not adversely impact firefighter and civilian lives.

A list of stations that the team recommends to be closed is contained elsewhere in this report¹⁶ and should be referred to for specific information on those stations. Additionally, at least three (3) new stations should be constructed that would combine the apparatus currently in service at Stations 23 & 25, Stations 34 & 35, and near Station 38.

D) Use of Technology

There are two current technologies successfully in use in the modern fire service that can be helpful in improving response times within the City of Pittsburgh.

- 1) An automated mapping program via a mobile data terminal in each vehicle would provide quick and reliable mapping so fire apparatus can quickly and safely respond to a given location.
- 2) A traffic light pre-emption system, which allows for a faster and safer response time by controlling the direction and movement of traffic ahead of the emergency vehicle.

Although these technologies have associated costs, they are much less expensive than staffing additional fire stations and companies. These technologies should be part of a

¹⁶ Section IV-E, Deployment Plan, Proposed Deployment

capital improvement program so that over a period of time all Bureau of Fire apparatus and vehicles can realize full advantage of the technologies.

E) Implementation of Mutual Aid

The City of Pittsburgh has numerous areas within its jurisdictional boundaries, which are remote from the main areas of the city. These areas have very limited emergency call activity yet still require fire/rescue service coverage and in several cases contribute significant tax base revenues to the city. Surrounding these fringe areas are suburban communities, which provide fire protection services to properties very close to those located just inside the city boundaries. Throughout the United States other jurisdictions have faced this same situation as communities have grown around established cities.

A common solution to this situation is to establish Mutual Aid agreements between municipalities and jurisdictions that have common interests in delivering emergency services in the most timely and cost effective manner, and in the delivery of disaster and catastrophic incident support. There are two approaches to Mutual Aid, the first being that aid is sent when specifically requested by the agency having jurisdiction at the incident site. The second type of Mutual Aid is based on an automatic response program where the closest response agency is alerted and dispatched on alarms from a location, regardless of who has primary jurisdiction. The agency having jurisdiction may respond as well depending on the nature of the incident and the agreement with the local Mutual Aid agency involved in the initial response.

This approach could work very well for several areas in the City of Pittsburgh where a suburban fire department may have a fire station closer to certain areas of the city than the closest city fire station. An automatic response Mutual Aid agreement may provide a faster initial response for these areas without the need of having to staff a fire station for an area that has very few actual emergency calls. The exploration of establishing Mutual Aid agreements with other agencies surrounding the City of Pittsburgh should begin as soon as possible.

The need for Mutual Aid between fire departments of urban and suburban areas has been demonstrated many times in the past as well as in recent incidents in Pittsburgh and Chicago, Illinois.¹⁷ Both the city and the surrounding communities can benefit from this type of intergovernmental cooperation.

¹⁷ Pittsburgh was involved in mutual aid operations during the Floods of 2004 and Chicago received mutual aid from suburban departments during a high rise fire (LaSalle Bank Building) on December 6, 2004

Section II Recommendations

Part C of these recommendations were developed with <u>NFPA 1710 Standard for the</u> <u>Organization and Deployment of Fire Suppression Operations, Emergency Medical</u> <u>Operations, and Special Operations to the Public by Career Fire Departments 2001</u> <u>Edition</u> in complete consideration and should comply with the standard assuming a properly organized response plan will be implemented.

C) Results of Response Time Analysis

II - C - 1. Close the following stations:

(see Appendix Seven through Fifteen)

3, 34 (Perrysville location), 34 (Central location), 35, 36, 38,

5, 13, 14, 11, 21, 23, 25

II - C - 2. Build 3 new stations in Zones 4-9, 1-5, and 1-7 (See Appendix Eight and Fifteen)

II - C - 3. Keep the following stations;

32/33, 37, 39, 10, 12, 18, 19, 6, 7, 8, 15, 17, 4, 20, 22, 24, 26, 27,

28, 29, 30, 31

D) Use of Technology

II - D - 1. Incorporate into a capital improvement program technologies for mapping and mobile data terminals and traffic control devices for key intersection control.

E) Implementation of Mutual Aid

II - E - 1. Begin the development of Mutual Aid agreements with surrounding communities with the intent of providing exchange aid as requested and specific area automatic mutual aid response.

Section III - Apparatus and Fire Station Design and Condition

Firefighting is a technical process and is comprised of two essential elements: the firefighter with his/her education, training, experience and the equipment and apparatus available for use in fire and rescue operations. The performance level of a firefighter is directly affected by the type of technology available for use and its condition of operability.

For example, in suppressing any given fire a certain amount of water must be applied (gallons per minute-GPM) at a specific rate (critical fire flow) to overcome the heat release of the burning fuel, which is required to extinguish the fire. Fire hose comes in different sizes and each individual size flows various amounts of water, based on various pressures required to produce an effective fire stream for firefighting operations. Fire Engines have different size pumps that can pump various total flows (GPM) at certain pressures, based on their design and maintenance condition. If a fire required 750 GPM to suppress it, and you had 2 $\frac{1}{2}$ " fire hose (which requires three firefighters to maneuver the line) which flows approximately 250 GPM, you would need three attack lines which equates to 9 firefighters and one Engine Company, providing it's pump is in good shape and can meet the pressure requirements to supply these attack lines with the appropriate pressure and volume to meet the critical fire flow required.

If you were using 1 ³/₄" fire hose, which flows 200 GPM, but can be handled by two firefighters, you could meet the 750 GPM critical fire flow with four lines operated by 8 firefighters, one less than the example above. If the pump on the Engine involved in the exercise is not properly maintained, it might take two Engine Companies instead of just one to reach the correct pressures for the attack lines while maintaining the necessary volume of flow. So by having the appropriate technology, well maintained, and properly applied we can eliminate the need for one firefighter on the same fire attack and minimize the use of extra Apparatus. While this is just one example, all high quality fire ground operations are tied to the combination of well educated, trained, and physically fit firefighters equipped with well maintained and properly designed equipment and apparatus.

With poor design or poor maintenance in the equipment and apparatus area of concern, firefighter capabilities are seriously diminished as well as their personal safety and the safety of those that they may have to assist or rescue at an emergency scene. An additional aspect is the condition and design of the fire station itself. If there are no acceptable areas to allow for training, to perform required maintenance, for living quarters, and for officers to administer personnel management requirements, the fire response force will be diminished in its effectiveness.

While conducting the study our on site team spent five days specifically studying and reviewing the Bureau of Fire stations, apparatus, and equipment. Additional reviews of station conditions and apparatus issues occurred throughout the performance of this

project. Various standards and recommendations were used as our guidelines, as well as the expertise of our staff. In many cases, a layperson with no fire service experience could have determined the lack of maintenance and poor conditions detected, as they are very obvious. Comments from the firefighters indicated that vital Apparatus has been out of service for months without return to service due to the inability of the City to maintain the vehicles. A simple view of the City garage shows fire apparatus that has been out of service for extended periods of time without being returned to service. Important portable equipment is out of service and the fire station conditions were found to be unacceptable in many locations.

The issue at hand is that strictly having personnel will not make an efficient and effective Fire Bureau. The necessary funds to fix, repair, and upgrade the out of service Apparatus, portable equipment, and to make station repairs and upgrades must be appropriated and expended to ensure a safe working environment for the firefighters and an effective response force for the public.

A) Apparatus Review

There are many categories of fire department apparatus each of which is designed to perform a specific function on the emergency scene. The ERASE team focused on the Engine and Truck apparatus employed by the department. Engine and Truck type apparatus are basic to any firefighting operation. The department uses these two main categories of apparatus extensively. Another major category of fire apparatus is the Squad apparatus. The department could benefit by incorporating this type of apparatus as recommended elsewhere in this report.

The review process of the Apparatus evaluations was performed during site visits. Each station was visited and the apparatus operating out of each particular station was evaluated. The evaluation primarily consisted of a visual inspection in order to gain a general understanding of current apparatus and equipment conditions. An in-depth evaluation was beyond the scope of this report. However, based on the results of our limited evaluation and the poor state of the apparatus and its apparent lack of proper maintenance, an in depth study is recommended.

The evaluation of the apparatus included the following specific categories involving the condition and availability of the item being reviewed;

- 1) vehicle,
- 2) portable equipment,
- 3) hose and nozzles,
- 4) ground ladders,
- 5) Personal Protective Equipment (PPE) including protective clothing, Breathing Apparatus (SCBA) and Personal Alert Safety System (PASS),
- 6) functional seatbelts,
- 7) Thermal imager equipped, and
- 8) Mobile data terminal equipped.

The following is a summary of our observations;

Condition Evaluated	Poor	Fair	Good
Apparatus	5, X6, 8, 10, 12, X14, X19, 19, 21, 26, 38	3, 13, 15, 20, 25, 29, 31, 39	4, 6, 7, 11, 22, 24, 30, 32
Equipment on Apparatus	5, X14	3, 6, X6, 8, 10, 12, 13, 15, 19, 20, 21, 25, 26, 38, 39	4, 7, X19, 22, 24, 29, 30, 31, 32
Hose	29 (3 inch hose)	3, 5, 6, X6, 8, 10, 12, 13, X14, 15, X19, 19, 20, 21, 24, 25, 26, 31, 38, 39	4, 7, 22, 30, 32
Ground Ladders		5, X6, 7, 8, 10, 12, X14, 15, X19, 20, 21, 24, 25, 26, 29, 38, 39	3, 4, 6, 11, 19, 22, 30, 31, 32
Protective Clothing			All
SCBA and PASS devices			All
Seat Belts	X6, 13, X14, X19, 21, 25, 39 (one or more belts found not functional)		
Thermal Imaging Equipment	Not Available - All		
Mobile Data Terminals	Not Available - All		

Engine Companies by Company Number (X designates a reserve apparatus)

Truck, Quint, and Foam Companies by Company Number	ſ
(X designates a reserve apparatus)	

Condition	Poor	Fair	Good
Evaluated			
Apparatus	X3, A5, 6, 13, A17, 18, 23, A27, 34	26, 30 (except for partially broken springs)	8, 24, 37 - (Foam One)
Equipment on Apparatus	6	X3, A5, 13, 14, 18, 23, 26, A27, 34	8, A17, 24, 30, 37
Ground Ladders		A5, 6, 13, 14, A17, 26, A27	8, 24, 30, 34
Protective Clothing			All
SCBA and PASS devices			All
Seat Belts	X3, A5, A17, 18, 23, 26, A27 (one or more belts found not functional)		
Thermal Imaging Equipment	Not Available - All		
Mobile Data Terminals	Not Available - All		

Age of Apparatus Fleet

The average age of Pittsburgh Bureau of Fire Engine and Truck Apparatus is greater than 12 years old, with some reserve apparatus in excess of 20 years old. While there are no specific standards or recommendations for the replacement of fire apparatus based strictly on the age of the unit, our experience has shown that 15 years of active and 3-5 years of reserve duty is average for a city like Pittsburgh. This life span is based on the premise that the apparatus is used and operated correctly and is well maintained (serviced as

recommended by the manufacturer and all damage is repaired immediately within manufacturer specifications). With the current age of many of the city's apparatus and the poor quality of apparatus maintenance, we believe the city will need to invest significant funds in apparatus rebuilding or replacement in the next five years.

The decision to replace apparatus encompasses many factors, such as safety compliance with current standards, maintenance costs, functionality for current requirements, anticipated emergency call volume and nature of activity, and the type of assignment available for the apparatus (active front line versus reserve). For example, during our site visit activities it was made known to us that Pittsburgh firefighters are sometimes required to ride apparatus on the rear step of older apparatus (because the design does not have jump seats for the firefighters to sit in, with seat belts fastened. On one occasion we actually observed firefighters riding on the rear step of a reserve apparatus.

The practice of firefighters riding in a standing position¹⁸ on the rear step of fire apparatus has been considered an unreasonable safety risk for years (for at least twenty years, which is longer than the typical life span of a piece of urban fire apparatus) and is a major safety violation. This situation would require the retirement of apparatus based on design alone, regardless of condition. In other examples an apparatus may need to be replaced because it cannot perform within the standards of the original design, for example a pump that cannot meet pressure and volume requirements necessary for modern firefighting tactics. Failure to replace an Engine that is in this type of condition would require two Engine companies to meet the normal performance of one, which then add staffing requirements. In some cases, the total cost of performing refurbishment or simple maintenance costs may indicate that retirement of the apparatus is the most efficient choice.

Our review provided for a visual check and overview evaluation of the condition of the apparatus. To perform an in depth review of the Bureau's apparatus would require approximately two days per vehicle, with maintenance records and a qualified Fire Apparatus mechanic present. While it would require a significant work effort to complete¹⁹ this type of review, from our observations and overview evaluations, we must recommend this task be undertaken for both firefighter safety and for the protection of the public.

To provide an approximate cost scenario until an in depth evaluation of the existing apparatus is conducted we used the following approach. Apparatus that were listed in the

¹⁸ This practice is an unreasonable risk and should not be allowed to take place under any

circumstance. It is recommended that a strict policy be put in place that forbids this practice. If a reserve apparatus needs to be used that does not provide for seated positions with a working restraint system, the company personnel not in the cab should be transported by other means to the emergency scene. Nationally, approximately 30% of the annual firefighter fatalities are from vehicle accidents while responding to or from the emergency scene. Unrestrained, externally exposed firefighters are at severe and unacceptable risk.

¹⁹ With approximately 50 Apparatus plus automobiles, this task would take over 100 days to complete.

"poor" condition category for the Apparatus itself are considered to be in need of being replaced, a rating of "fair" resulted in the consideration of the Apparatus being refurbished, and any Apparatus with a "good" evaluation were left as they currently are, for the purpose of this report. While there are many special options that can be ordered on a modern custom fire apparatus, these options can also increase the cost of the unit substantially. After evaluating the current pricing structures for different fire apparatus we arrived at a price estimate that we believe will be adequate to purchase well designed, safe, and NFPA compliant apparatus that will meet the needs of the Pittsburgh Bureau of Fire. The cost estimates are \$250,000.00 for an Engine, \$500,000.00 for a Ladder Truck, and \$300,000.00 for a Squad. We further inquired into discounts for purchasing several apparatus at one time and were able to obtain quotes of 10% to 15% as the attainable discounts for this approach to acquisition. If possible, this multi unit purchase approach would have significant savings for the City. The following chart shows an approximation to the numbers²⁰ of apparatus that should be replaced and the associated costs.

Nine Engines	@ \$250,000.00	=	\$2,250,000.00
Seven Trucks	@ \$500,000.00	=	\$3,500,000.00
Four Squads ²¹	@ \$300,000.00	=	\$1,200,000.00
	Тс	otal =	\$6,950,000.00
	Х		.15 discount (multi purchase)
			\$1,042,500.00 savings
	Estimated Replacement G	Costs	\$5,907,500.00
Refurbishmen	t		
Eight Engines	@ \$75,000.00		\$600,000.00
Two Trucks	@ \$100,000.00		\$200,000.00
	Estimated Refurbishmen	t Costs	\$800.000.00

Estimated Total Apparatus Related Refurbishment & Replacement Costs \$6,707,500.00

While performing the site visits and Apparatus inspections various members of the Bureau of Fire informed us that there were some new Apparatus on order or in the process of being ordered, however they did not give specific information as to which

²⁰ Based on the recommended deployment plan in this report and the apparatus that were available to our personnel for inspection during the conduct of the on site inspections for this section of the report.
²¹ If the City follows the recommendations in this report for merging the Bureau of EMS with the Bureau of

²¹ If the City follows the recommendations in this report for merging the Bureau of EMS with the Bureau of Fire, the number of Squads required would be 2 instead of 4, as EMS has two Squad vehicles already (providing that these units are in good condition), which would save \$600,000.00.

Apparatus was / were being replaced or when the any new Apparatus would be delivered. If the City does have new Apparatus on order any pre payment funds could be deducted from this cost estimate. The costs due upon delivery would still have to be paid and could simply be subtracted from our total estimate. Depending on the price paid for any Apparatus that the City may have on order (if equal or less than our estimate per Apparatus type) this sum should still be accurate for the overall immediate needs of the replacement program recommended. It is important for the reader to understand that the need identified for replacements is now and it takes a period of up to a year to get Apparatus designed and built so the action required is immediate.

ERASE also recommends that a comprehensive capital improvement plan be initiated to replace apparatus on a continuing basis based on the factors mentioned in this section, as soon as possible. The Apparatus that we reviewed, that was in good condition, will wear out in the future and the City should have an ongoing rotation and purchase program in place to address these issues, instead of having so many Apparatus fall into the "Poor" category all at the same time. A reasonable replacement program that ensures apparatus will not be in service beyond its safe and efficient life span is essential to providing a safe working environment for the firefighters and an efficient and effective response force to the public.

Maintenance of Pittsburgh Bureau of Fire Apparatus

Although beyond the scope of this report a discussion of apparatus condition must include maintenance issues. There is an apparent lack of proper maintenance of vehicles and equipment. The specifics of the maintenance program within or for the Fire Department is not well know to the ERASE team. This is due to a lack of information concerning the "maintenance program" that was requested but never provided. It is clear however from our observations and comments gleaned from officers and firefighters that there is an urgent need for a comprehensive evaluation and improvement program in regard to maintenance. Extended out of service times of weeks and months, as reported to us by officers and other personnel during our site visits are unacceptable.

B) Fire Station Review

The fire station design and condition were surveyed over several days. The survey addressed the condition of the following categories;

- 1) structure,
- 2) interior finish,
- 3) Apparatus floor area,
- 4) parking and access to facility,
- 5) kitchen area,
- 6) living quarters (bunk room, showers, personal locker area)
- 7) training area,
- 8) fitness area and equipment,
- 9) appliances,
- 10) storage and work area.

Condition	Poor	Fair	Good
Evaluated			
		5*, 35*, 36*	3*, 4, 6, 7, 8, 10, 11*, 12, 13*,
General			14*, 15, 17, 18, 19, 20, 21*,
Condition of			22, 23*, 24, 25*, 26, 27, 28,
Station			29, 30, 31, 32, 34*,
Structure			34*(Central Ave.), 37, 38*, 39
		5*, 17, 34*,	3*, 4, 6, 7, 8, 10, 11*, 12, 13*,
General		35*, 36*	14*, 15, 18, 19, 20, 21*, 22,
Condition of			23*, 24, 25*, 26, 27, 28, 29,
Interior Finish			30, 31, 32, 34* (Central Ave),
			37, 38*, 39
		5*, 11*, 14*,	All other stations
Kitchen Areas		19, 21*, 25*	
		4 1 4 %	
A 7.		4,14*	All other stations
Appliance			
Condition			
		6 11* 15 10	All other stations
Livina		$0, 11^{\circ}, 10, 19, 10, 19, 10$	All other stations
Duartors			
Quarters			
		5* 11* 19	All other stations
Training Areas		21*. 25*	
	19. 21*. 39	3*. 6. 17. 29	All other stations
Fitness Area &	(no	34*	
Equipment	equipment at		
1 1 1 1	all)		
Storage and	22	5*, 11*, 19,	All other stations
Work Areas		21*, 29, 32,	
		34*, 34*	
		(Central	
		Ave.)	

The following is a summary of our observations on Conditions:

* Recommended for closing
| Apparatus Floor
Area (vehicle
capacity) | 1 | 2 | 3 | 4 |
|---|---------------------------------------|--|---|-----------|
| Station Numbers | 19, 20,
21*, 22,
28, 35*,
39 | 3*, 6, 11*, 12, 13*,
14*, 23*, 25*, 26, 29,
30, 31, 34*,
34*(Central Ave),
36* | 5*, 7, 8,
10, 15, 17,
18, 24, 27,
32, 37 | 4,
38* |

The following is a summary of our observations on Design:

Parking areas are inadequate at Stations 5*, 6, 10, 13*, 15, 18, 19, 24, 27, 30, 34*, 35*, 36*, and 39.

Access in and out of Stations 21*, 25*, 34*, 36*, and 39, is inadequate and needs to be addressed.

The observations made by ERASE team members were visual in nature and should not be considered in-depth and detailed enough to make specific recommendations about each station. Our goal was to get a general understanding of the conditions the stations are currently in and to assess the impact of these conditions on overall effectiveness and efficiency of the Bureau of Fire. It is clear from our observations that there is a need for a comprehensive review of these facilities and a capital improvement plan should be a result of that review.

The impact of poor station design and a lack of maintenance have further effects on operating costs. For example without a work area where tools can be maintained they will not be ready for emergency service and will either break or wear out sooner than the intended service life. This will cost the City additional monies to replace equipment earlier than necessary. A lack of a physical fitness work out area leads to unfit firefighters, injuries and accelerated workmen's compensation costs and disabilities, let alone fatalities. The incurred costs from a lack of maintenance or design issues for all resources of the Bureau of Fire cannot be overlooked. While these costs may be hidden in the overall budget of the department in other categories such as benefits, equipment replacement, and so forth, they can be controlled through a proactive management approach.

* Recommended for closing

Section III Recommendations

Recommendations III A 1, 2, 3 were developed with NFPA Standards 1901, Standard for Automotive Fire Apparatus in complete consideration. Recommendation III A 4 complies with NFPA 1500 Standard on Fire Department Occupational Safety and Health Program.

III - A - 1 Perform a comprehensive evaluation of all apparatus and implement a capital improvement program to insure that the Pittsburgh Bureau of Fire has a modern state of the art fleet of apparatus to include Engine, Truck, Squad, and other vehicles such as chief officer and utility vehicles.

III - A - 2 Design and purchase Apparatus to replace the units identified in the "Poor" category of this report. Purchase in multiple unit orders if possible to obtain the available discounts those manufacturers will provide.

III - A - 3 Perform a comprehensive evaluation of the maintenance program for apparatus and equipment. Implement necessary changes as soon as possible.

III - A - 4 Immediately stop the practice of firefighters riding on the tailboard of any apparatus.

III - B - 1 Review the Station conditions listed in the "Poor" and "Inadequate" categories and develop a maintenance program to address these issues and implement corrective action. Stations that are slated for closing should be addressed on a temporary basis until the companies are moved to other quarters.

Section IV - Deployment Plan

A) Shift Design

There are several basic shift designs used in the fire service.²² For career fire departments there are two basic shift designs, a 24-hour shift with one on duty tour of 24 hours and a 10 and 14-hour shift requiring two on duty tours (1-10 hours and 1-14 hours) for every 24-hour period. The 24-hour shift design can be staffed by a 3-platoon system (24hours on duty 48 hours off duty) or 4-platoon system (24 hours on duty 72 hours off duty) and the 10 - 14 system that is staffed with a 4-platoon system. Each has advantages and disadvantages.

There are two major considerations when designing a schedule for a full time career fire department, determining how many personnel are needed to staff the department and taking into account the Federal Labor Law known as the Fair Labor Standards Act. The act states that a person can work a maximum of 212 hours in a 28 day period or 53 hours per week without the employer paying time and a half overtime.

The ERASE team considered the current 10 - 14 shift schedule used by the Pittsburgh Bureau of Fire and the 24-hour shift staffed by a three-platoon system. The rationale for this comparison was that given the current economic state of the City of Pittsburgh there is a great need to lower operational costs. Also, the emergency incident rate and overall call volume involving structure fires or extremely strenuous and ongoing emergency operations has dropped significantly in the City of Pittsburgh which eliminates the concerns from decades ago about too long of a work shift tour based on the potential for fatigue. Throughout the United States this shift design is utilized by many cities with a higher call volume than Pittsburgh without fatigue issues among their firefighters.

We believe the best way to accomplish this is to implement a shift schedule that provides for the adequate number of personnel needed to provide fire services to the city on a daily basis while being fiscally reasonable. The 24/48-shift schedule fits well into the City of Pittsburgh's needs. Although a 24 hour 3 platoon system potentially requires a greater expenditure of overtime pay this can be eliminated. By using a "floater system" of additional personnel to lower the average pay cycle hours and providing coverage for time off such as vacations, overtime shifts will be dramatically reduced and costs contained . The extra floater positions required are less than the number required to staff an entire 4th shift of personnel required in the 10 – 14 shift schedule. This shift design also reduces the number of officer positions required, which are at a higher compensation level than firefighter positions. The spreadsheet provided in Appendix A of this report shows the details in concise numerical format for the positions and cost savings.

²² Organizing for Fire and Rescue Services A Special Edition of the Fire Protection Handbook 2003

Hours Reduction Shifts (HRSs); Lowering the hours worked per pay cycle by use of a floater system

Staffing the extra "floater" personnel for each shift allows for the scheduling of a floater to work the shift of other personnel in a prescribed cycle of a 28-day period. The floater would staff the position of the person off duty on the prescribed Hours Reduction Shift or HRS. The personnel's off duty HRS would be scheduled at a shift at the end of one pay cycle and the beginning of the next. This reduces the OT hours from 12 to 0 for the previous pay cycle and from 12 to 0 hours OT for the upcoming pay cycle.

Labor management issues in Regard to the FLSA and the proposed HRS system -

The actual days and total number of personnel allowed off on each shift for HRS will need to be decided on, as well as how many personnel are allowed off on vacation on each shift. This can be worked out through cooperation of labor and management. For the purpose of our calculations in shift coverage requirements we used the total number of shift personnel. We used this methodology even though it is our understanding that currently Pittsburgh Bureau of Fire personnel above the rank of Lieutenant i.e. Captain, Battalion Chief and Deputy Chief are considered exempt form FLSA requirements because they are considered "management". This inclusion of these ranks into the work hours recommended (which would be a benefit to the personnel) is a point of negotiation for the City with the labor union. Another area that can be discussed is how to handle the payroll under FLSA rules when a person is off sick or on vacation time. A thoughtful and cooperative process of labor management collaboration can address these issues.

Number of Floater Position Calculation -

FLSA 212 hours maximum in a 28-day cycle or 53 hour workweek

365 days per year divided by 3 shifts = 121.6 days for each shift to be on duty

121.6 shifts X 24 hours worked each shift = 2918.4 hours worked per year

365 days a year divided by the FLSA 28 day pay cycle = 13 pay cycles per year

2918.4 hours worked per year divided by 13 pay cycles = 224 hours per pay cycle

224 hours per pay cycle -212 = 12 hours Over Time per cycle

Each pay cycle includes 12 hours of Over Time. To reduce the Over Time HRS at the end of a pay cycle and the beginning of the next cycle lowers the Over Time to 0 hours. This equals 6.5 HRS (13 pay cycles divided by .5 24 hour shift) for each personnel per year.

6.5 HRS for each personnel would mean coverage of 156 hours per year for each personnel or 29,952 hours (156 hours X 192 shift personnel) of HRS coverage each year.

Each personnel works 114.5 shifts each year (121 - 6.5 HRS) or 2748 hours per year

To cover the total number of HRS hours off 29,952, 10.8 floaters would be needed (29,952 divided by 2748 hours worked per year)

For vacation shifts off at an average of 8 shifts each year equals 8 vacation shifts X 192 shift personnel = 1536 shifts of vacation each year or 36,864 hours of coverage time.

36, 864 divided by 2748 (annual hours worked) = 13.5 floaters to cover vacation time

Total floaters recommended 11 for HRS and 14 for Vacation coverage

Note: In calculating the number of floaters needed total scheduled work hours were used. Vacation time off and sick day averages were not considered. It would be virtually impossible to incorporate these numbers into the calculation because exact numbers are not known i.e. how many vacation days or sick days will be used by department personnel at specific times during the year. The above calculations will, however, adequately depict the number of floater positions needed for the proposed shift change.

B) Legislative issue in Changing Shift Design

We were informed by several sources that the current shift schedule used in the Bureau of Fire is actually legislated into part of a state code. After requesting documentation from numerous sources without response, we are including the information here for further review. If there is a state statute or code that does state the required work schedule design for Cities of the Second Class", then a) legislative change is required, or b) the City must negotiate²³ the change with the firefighters union. Either way, given the current state of finances in the City of Pittsburgh and the need to maintain public protection, we believe this must be accomplished in order to realize the potential financial saving needed to help the city in its overall financial recovery.

C) Company Officer Structure

Currently the officer structure of the Bureau of Fire calls for the rank of Captain on all Engine companies and the rank of Lieutenant on Truck companies. By changing the officer structure to a system that calls for the rank of lieutenant on engine companies and captains on truck and squad companies a significant financial saving can be realized. This change is reflected in the spreadsheet provided in Appendix A of this report. The rationale for this change is that under the proposed deployment of fire companies in the city a Lieutenant is considered a single company officer at the supervisory level and a Captain is considered a mid level multi company officer. In the proposed deployment

²³ This process has occurred in Pennsylvania in other Cities, regarding shift design change.

Truck and Squad companies are stationed with engine companies, having the rank of Captain on these companies is the preferred way of providing proper supervision in a multi company station. At fire scenes, Ladder Trucks and Squads are working with multiple Engine companies and are considered site wide resources at most fire ground operations. The need of the Truck and Squad companies to coordinate with multiple other company officers and to coordinate their tactical operations requires a more experienced and higher ranking officer, than the single Engine company.

D) Current Deployment Pittsburgh Bureau of Fire

The Bureau of Fire currently deploys its resources in 35 fire stations throughout the city. There are 33 Engine companies (3 of which are considered Quint style apparatus that can function as a Truck) 11 Truck companies and 1 MAC (mobile air unit) with one person. Engine and Truck companies have a minimum staffing of 4 personnel, one officer and three firefighters. Three of the "Engine" companies are actually Engine/Quint companies and are staffed with 5 personnel. There are 23 personnel assigned to Administration, Fire Prevention and Training.

E) Proposed Deployment

The proposed deployment of Bureau of Fire resources to adequately provide safe and effective fire protection to the citizens of Pittsburgh consists of 25 Engine Companies, 11 Truck companies and 4 Squad Companies deployed in 25 fire stations. These resources are supervised by one Deputy Chief responsible for city wide activities, 5 Battalion Chiefs each responsible for one of 5 response zones and 1 city – wide Training / Safety Officer responsible for on shift training and safety.

Stations to be Closed²⁴ -

This recommendation requires the closing of the following stations; 3 - 34 (Perrysville location) - 34 (Central location) - 35 - 36 - 38 - 5 - 13 - 14 - 11 - 21 - 23 - 25. This recommendation requires keeping the following stations;

Stations to remain operational -

32/33 - 37 - 39 - 10 - 12 - 18 - 19 - 6 - 7 - 8 - 15 - 17 - 4 - 20 - 22 - 24 - 26 - 27 - 28 - 29 - 30 - 31.

New Stations to be built -

1 new station in Zone 4-9 area near current stations 23 & 25 1 new station in Zone 1-5 area near current stations 34 & 35 1 new station in Zone 1-7 area near current station 38

²⁴ See Appendix Six for addresses and locations of stations and Appendix Seven through Fifteen for Mapping purposes

The distribution of the fire companies in the 25 proposed stations is as follows;

Station 32/33 Engine / Truck Station 37 Engine Station 39 Engine Station10 Engine / Truck Station 12 Engine / Truck Station 18 Engine / Squad Station 19 Engine Station 6 Engine / Truck Station 7 Engine Station 8 Engine / Truck Station 15 Engine Station 17 Engine / Truck Station 4 Engine / Squad Station 20 Engine Station 22 Engine Station 24 Engine / Truck Station 26 Engine Station27 Engine / Squad Station 28 Engine / Truck Station 29 Engine Station 30 Engine / Truck Station 31 Engine New Station Zone 4-9 Engine / Truck New Station Zone 1-5 Engine / Truck New Station Zone 1-7 Engine / Squad

Comparison of Current and Proposed Deployment of Fire Companies -

Current deployment of fire companies in the City of Pittsburgh

33 Engine companies - minimum staffing 4 personnel
(3 of the engines can function as Quint companies - minimum staffing 5 personnel)
11 Truck Companies - minimum staffing 4 personnel
1 MAC (air unit) with 1 firefighter
Supervision 1 Deputy Chief, 5 Battalion Chiefs

Proposed deployment of fire companies in the City of Pittsburgh

25 Engine companies - minimum staffing 4 personnel
11 Truck companies - minimum staffing 4 personnel
4 Squad companies minimum staffing 4 personnel
Supervision; 1 Deputy Chief, 5 Battalion Chiefs, 1 Training / Safety Officer

Current total number of fire companies in the City of Pittsburgh - 44

Proposed total number of fire companies in the city of Pittsburgh - 40

Net reduction in fire companies under proposed plan - 4

F) Administration, Fire Prevention, Training Deployment

According to the information provided by the City Administration and the Bureau of Fire there are 23 personnel in administration and fire prevention. This plan calls for the deployment of 16 personnel in Administration and Fire Prevention not counting civilian support staff.

These personnel should be deployed as follows;

- 1 Chief of Department
- 1 Assistant Chief of Operations
- 1 Assistant Chief/Fire Marshal of Fire Prevention
- 1 Director of Administration
- 1 Deputy Chief of Fixed and Mobile Assets
- 1 Deputy Chief of Training
- 8 Fire Prevention specialists
- 2 Training / Safety specialists

Section IV Recommendations

IV - A - 1. Institute a 24 / 48 3-platoon schedule with a floater system to allow for HRS (hour reduction shifts) to reduce overtime costs. Negotiate with the labor organization and / or change any statutory rules or regulations that require the current shift design.

IV - A - 2. Engage in a cooperative effort with the labor organization to address the issue of shift personnel above the rank of Lieutenant in FLSA program and design procedures for FLSA compliance and scheduling.

IV - C - 1. Change the officer structure regarding Lieutenants and Captains assigned to fire apparatus companies. Lieutenants should be assigned to Engine companies and Captains assigned to Truck and Squad companies. Engage in discussions with the labor union to ensure a smooth transition to this approach by using attrition.

IV - E - 1. Close the following fire stations; 3 - 34 (Perrysville location) - 34 (Central location) - 35 - 36 - 38 - 5 - 13 - 14 - 11 - 21 - 23 - 25.

IV - E - 2. Build 3 new stations; 1 station in Zone 4-9 area near current stations 23 & 25, 1 station in Zone 1-5 area near current stations 34 & 35, 1 station in Zone 1-7 area near current station 38. Exact locations to be determined by the availability of property and functional response times.

IV - E - 3. Deploy fire companies as follows;

Station 32/33 Engine / Truck Station 37 Engine Station 39 Engine Station 10 Engine / Truck Station 12 Engine / Truck Station 18 Engine / Squad Station 19 Engine Station 6 Engine / Truck Station 7 Engine Station 8 Engine / Truck Station 15 Engine Station 17 Engine / Truck Station 4 Engine / Squad Station 20 Engine Station 22 Engine Station 24 Engine / Truck Station 26 Engine Station 27 Engine / Squad Station 28 Engine / Truck

Station 29 Engine Station 30 Engine / Truck Station 31 Engine New Station Zone 4-9 Engine / Truck New Station Zone 1-5 Engine / Truck New Station Zone 107 Engine / Squad

IV – E –4. Deploy Administrative, Fire Prevention, and Training positions as follows;

- 1 Chief of Department
- 1 Assistant Chief of Operations
- 1 Assistant Chief/Fire Marshal of Fire Prevention
- 1 Director of Administration
- 1 Deputy Chief of Fixed and Mobile Assets
- 1 Deputy Chief of Training
- 8 Fire Prevention specialists
- 2 Training / Safety specialists

Section V – Emergency Medical Services in the Fire Service

The issue of EMS in the City of Pittsburgh is a complex situation with a history involving both public safety forces and hospital involvement. To fully understand how the system became a component of the Department of Public Safety and the advantages of public agency administered emergency medical care we have provided a historic perspective of the EMS system in the City.

Pittsburgh EMS began in 1975 as a new public safety service during a time when the city had no Department of Public Safety. The Mayor of Pittsburgh at that time, Pete Flaherty, came to understand that the rapid transportation provided by the police bureau called "ambulance service" did nothing to help the patient while enroute to the hospital. Bleeding wasn't controlled, fractures were not immobilized, CPR was non-existent and if a person needed to be rescued from an accident or dangerous situation, the nature and extent of his injuries where never considered in the process.

This was not the fault of the police officers. They were sent out to do a job without the proper training, tools, equipment, education or direction. Efforts were made to train the police and upgrade their equipment. Those efforts failed. Police officers never joined the force to be "ambulance drivers" and the concept of transporting a critically ill heart patient in the same vehicle that had just previously transported intoxicated subjects to jail was unacceptable. The police needed to do police work and the time requirements of a modern EMS system where far greater per call than the fast ride to the hospital that they were used to providing.

The early to mid seventies were an exciting time for EMS in the United States, as a number of events caused a rapid escalation of the public's knowledge and expectation of proper pre-hospital emergency care. The first such influence was the return of combat medics and physicians from Vietnam to civilian life. They quickly pointed out that your chances of surviving a battlefront injury were far greater than your chances of surviving a serious car accident on one of Pittsburgh's parkways. The use of highly trained non-physician "medics", the use of helicopters for rapid evacuation to specialized treatment (trauma) units close to the forward areas reduced battlefront fatalities to less than 2%. Obviously, the question became "why can't we do that here?"

The second major influence that probably did more than any other single thing to spur the rapid growth of quality EMS in this country was a television program called "Emergency" that premiered in 1973. It was a weekly series about a fire rescue squad in the Los Angeles County Fire Department. It featured two "firefighter paramedics" performing lifesaving activities each week along with its accompanying engine company and the doctors and nurses of Rampart General Hospital. It gave birth to an entire new career and it was based in a modern, progressive fire department. Suddenly, a program about quality pre-hospital care was being beamed into America's homes each week.

Soon, community after community began to ask if that service and level of care was available in their town (no) and if not, how they could get it.

Many communities, like Pittsburgh, took a critical look at their existing services and made significant changes. Very few continued to use the police for this new service while many communities implemented these programs through their fire departments. In a number of communities "3rd Service" programs, not police, not fire but a third public safety agency was created for this purpose. A number of communities chose to create EMS Authorities or community owned non-profits to operate the services. In a few communities, private for-profit entities were contracted to provide the services. Financial stability and quality of care issues surfaced and many of these services failed within a short period of time.

In Pittsburgh, prior to 1975, based on the Los Angeles County Fire Department model, shown in the television show "Emergency" and a recognition that the police needed to do police work, the city looked at the idea of putting the new EMS service in the Bureau of Fire. The fire chief at the time was greatly opposed to the idea and publicly stated that "his firemen would never be litter carriers" and the fire union overwhelmingly rejected the idea when it was presented to them at a union meeting. It became painfully obvious that the fire service in Pittsburgh wanted no part of this new national movement called Fire Service EMS.

The city then resolved its dilemma in 1975 with the creation of a 3rd Service System. This new organization was created from the ground up to be a leader in pre-hospital emergency care. It was staffed by Paramedics who were bright, well-educated, highly trained and motivated individuals. The City of Pittsburgh's EMS service was quickly recognized as one of the leading services in the country. Within a short period of time, they were assigned other public safety responsibilities in addition to the ambulance service. Rescue, extrication, river rescue, SCUBA team, and hazardous materials response were all eventually given to the EMS service as they had demonstrated time and again the ability to provide a quality emergency service in all of their other endeavors.

The Department of EMS continued to grow and evolve as a critical life saving service, one that deals with people's injuries where they find them, whether on top of a bridge, in a wrecked car or in the back bedroom of a three story walk up. The EMS service became much more than just an "ambulance service". The department developed into much more of a life saving service and has continually expanded its services since its inception.

The Pittsburgh Bureau of EMS operates in a medically controlled environment and hand in hand with a residency program in emergency medicine. Physicians respond with paramedics to serious calls. There is no system like it in the United States. The need for treatment and the need for rescue are interwoven in such a way as to provide the optimal environment for lifesaving in a pre-hospital setting. The residents and visitors to Pittsburgh have enjoyed this level of service for almost 30 years. The system has served over 2 million people during that time and has saved tens of thousands of lives. Any contemplated change in the provision of this service due to Pittsburgh's present financial

plight, should not diminish in any way, the quality of service that is rendered by this organization.

That brings us to this moment in time. The city is in financial trouble. Oversight boards and committees are looking for ways to reduce spending and lower the cost of government. EMS generates a significant amount of revenue to support its operation but not enough to cover its entire budget. A general fund appropriation is still needed to cover the shortfall. The question that we must answer is whether something can be done that will further reduce costs, not reduce the quality of care and actually improve the overall level of service delivery provided by the city's emergency response system. We believe that such a way exists to accomplish a vision of improved service to citizens in need, at significantly lower costs.

Pittsburgh presently finds itself with a very expensive, greatly underutilized resource in the Bureau of Fire and an under funded, under staffed, overworked, aging EMS system, struggling to accomplish its lifesaving mission. A look at Pittsburgh's annual fire loss would show that were it not for the issue of fire exposures and the occasional person removed from a building, it would be very difficult to justify the expense of waiting for a fire emergency to take place. We believe that a solution exists that can improve both the fire and EMS financial situations and at the same time improve the services rendered to the public in both areas.

The most widely used method of providing EMS is through the fire service and there are numerous examples of city fire departments that do it well²⁵. Those fire departments that provide high quality EMS do it through an approach of total integration, one in which there are no barriers between agency personnel.

In fire agencies were EMS is incorporated rather than integrated there are often numerous personnel issues, which can lead to diminished levels of service to the community. It has been shown time after time that EMS will not be optimized when it functions as the "step child" of the fire service. When properly designed and integrated, the underutilized, available resources of fire suppression are available to support the life saving mission of EMS. The fire department then becomes more efficient and cost effective while enhancing its service to the community at the same time. EMS gets some much-needed support for its missions. As there are many more response units in most communities than there are EMS vehicles, and the fire units are generally in the station waiting for a call (In Pittsburgh more than 97% of the time according to dispatch records at 911) the integrated fire units are often able to arrive on the scene to begin lifesaving efforts earlier than most EMS units. It is this situation that leads to the use of fire apparatus as "first responders" in Pittsburgh and other communities.

The Pittsburgh effort and others as well have been only marginally successful and not well embraced. The cultural differences and the different levels of emergency medical

²⁵ Chicago, Metro Dade Fire/Rescue, Los Angeles, Seattle, and Dallas all have excellent fire department based EMS programs

training between the agencies have been able to thwart the best intentions. A Fire Service EMS program that works raises the entire level of education for the agency and not just for a few select entities within it. Within integrated departments EMS becomes a critical mission of the fire agency equal to the concern for and practiced far more often than, fire suppression activities. In communities such as Pittsburgh there are many more people in need of emergency medical services intervention than those in need of fire suppression services. Many progressive fire agencies have come to realize that even their name "Fire Department" is single purposed and self-limiting and does not describe the myriad number of responsibilities within a modern fire service organization. There are many fire departments now called "Fire/Rescue" in recognition of their changed mission and responsibilities.

In an integrated system, over time, everyone becomes a firefighter/paramedic or firefighter/emergency medical technician as those training and educational levels are adopted as the entry level for the department. The youngest, strongest, healthiest recruits are assigned to the busy rescues at completion of training. After a period of time they can move on to the Engine, Ladder Truck or Squad companies but all the time maintaining their medical and fire certifications as a condition of continued employment. Eventually, the agency reaches a point where all personnel are cross trained and working totally on the primary mission of life saving regardless of where it occurs, in a burning structure or crashed vehicle, with the highest levels of care always available, regardless of which vehicle arrives first. The mission is totally integrated. There are no longer fire people and EMS people, there are just employees working to do the best job possible for the citizens that pay them. The response times overall are lower and the level of care is higher as compared to the traditional first responder company. This integration also allows the medically controlled rescue services addressed earlier to be provided for by the fire service without a diminished level of emergency medical care to the victim as the two former, different agencies are now the same one.

Where these programs have been successful (Dallas, Phoenix...) the success has followed total integration and the removal of traditional and cultural barriers to total integration. The two former competitors no longer exist; only the newly designed entity remains. The makeover must be all encompassing for success. The new entity is then more efficient, more cost effective and set up to deliver higher levels of service to the community than either were able to do individually before.

We are aware of the cultural and historic differences between the Bureau of EMS and the Bureau of Fire and the management challenges created by this history. However, the best (quality of care, efficiency, and effectiveness) EMS delivery system will come from a merger of the two bureaus. Emergency services must be organized and deployed for the benefit of the people that need the service and not be influenced by historical differences between those that provide the service.

If history is a teacher, we know that such integration in Pittsburgh will be extremely difficult. Its accomplishment at this moment, growing out of Pittsburgh's financial crisis, would send a very strong message that Pittsburgh is not doing business the same old way.

This recommended integration of fire and EMS is a way to improve the services provided by the fire bureau and strengthen and improve upon the pre-hospital care delivery system and its mission of medically directed specialized rescue services. The integration of these two agencies creates a situation that allows for additional savings for the city and improved services through a synergy that does not exist today. It is our belief, that if properly planned and implemented, such integration can be successful, simultaneously accruing taxpayer savings and service improvements. It may be necessary to secure relief from a number of onerous state laws to accomplish this integration and the accompanying cost savings, but the battle, if won, could pay great dividends to the taxpayers of Pittsburgh.

Success will require the support of all involved stakeholders, the Mayor and Council, Management, the fire and EMS labor organizations and their leadership, as well as the people of Pittsburgh. Hopefully, with all working for a common purpose, a win will occur for everyone. Pittsburgh should have the best Public Safety Services available for a city of its size that it can afford. We believe that if these changes can be implemented, the citizens and emergency responders in Pittsburgh will get service that is markedly better than what they get today at less cost.

Section V Recommendations

V - 1. Merge the Bureau of EMS with the Bureau of Fire and create a Fire / Rescue agency. This merger would be a full integration effort with all personnel being cross trained and all resources such as apparatus and stations being shared as required to deliver the best and most comprehensive service to the citizens of Pittsburgh.

V-2. Initiate a training plan to determine how long it will take to cross train the minimal number of personnel required to properly integrate the Bureau of EMS into the Bureau of Fire.

V - 3. Establish the new hire requirements for cross training in both fire and EMS and establish the policies on assignment and rotation for cross-trained personnel and the respective response stations where EMS units would be stationed.

V - 4. Evaluate the EMS personnel who will be retiring and may leave as a point of attrition prior to the merge to determine the actual working numbers of personnel who would become part of the Bureau of Fire. An accounting of the firefighters with EMS training should also be performed so that adequate numbers of EMS qualified personnel are on staff on each shift and in the appropriate stations.

V-5. Begin the negotiation process to include the EMS service in the labor organization's contract and design an implementation date at the start of the next contract.

V - 6. Plan for the integration of the budgets of EMS and Fire as of January 1, 2006 (providing adequate training can be completed by this date for all effected personnel).

Appendix One

ALLOCATED STAFFING LEVELS

	Per Shift	Total	Costs
Engines	33		
Captains	33	120	\$7,277,160
Lieutenants	0	0	\$0
FF	110	440	\$22,547,800
Total	143	572	\$29,824,960
Trucks	11		
Captains	0	0	\$0
Lieutenants	10.75	43	\$2,370,590
FF	45	180	\$9,224,100
Total	55.75	223	\$11,594,690
Chiefs			
DC	1	4	\$322 864
BC	5	20	\$1 467 580
Safety/Training	0	20	\$0 \$0
Total	6	24	φυ \$1 790 <i>ΔΔΔ</i>
10tal	0	27	ψ1,750,444
Squad	1		
Captain	0	0	\$0
FF	1	4	\$204.980
Total	1	4	\$204,980
			¥ - ,
Vacancy			
Captain	4.45	3248.5	\$1,075,254
Lieutenant	1.39	1014.7	\$335,866
FF	22.16	16176.8	\$5,354,521
Total			\$6,765,640
Total Personnel	205.75	819	\$49,975,734
Admin	Allocated	Funded	Costs
Chief of Bureau of Fire	1	1	\$85,292
Deputy Chief - Bureau of Fire	0	0	\$0
Asst Chief - Operations	1	1	\$80,096
Asst Chief - Prevention	0	0	\$0
Asst Chief - Training & Safety	0	0	\$0
Asst Chief - Administration	0	0	\$0
Battalion Chief	1	1	\$73,379
Instructor	6	6	\$400,248
Fire Prevention Specialists	14	0	\$0
Total Administration	23	9	\$639.015

Assumes Captains on Engines, Lieutenants on Trucks. Firefighter pay average of Master & 4th Year FF salary and Vacancy pay of \$331 per person

PROPOSED STAFFING LEVELS

	Per Shift	Total	Costs
Engines	25		
Captains	0	0	\$0
Lieutenants	25	75	\$4,134,750
FF	75	225	\$11,530,125
Total	100	300	\$15,664,875
Trucks	11		
Captains	11	33	\$2,001,219
Lieutenants	0	0	\$0
FF	33	99	\$5,073,255
Total	44	132	\$7,074,474
Chiefs			
DC	1	3	\$242,148
BC	5	15	\$1,100,685
Safety/Training	1	3	\$220,137
Total	6	18	\$1,562,970
Squad	0		
Captain	4	12	\$727,716
FF	12	36	\$1,844,820
Total	16	48	\$2,572,536
Floaters			
Captains	0	0	\$0
Lieutenants	0	0	\$0
FF	27	81	\$4,150,845
Total	27	81	\$4,150,845
Total Personnel	177	531	\$31,025,700
Admin		Proposed	Costs
Chief of Bureau of Fire		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$85 292
Deputy Chief - Bureau of Fire		1	\$82,000
Asst Chief - Operations		1	\$80.096
Asst Chief - Prevention		1	\$80.096
Asst Chief - Training & Safety		1	\$80,716
Asst Chief - Administration		1	\$80,716
Battalion Chief		0	\$0
Instructor		2	\$133,416
Fire Prevention Specialists		8	\$441,040
Total Administration		16	\$1,063,372

Assumes Lieutenants on Engines, Captains on Trucks, Firefighter pay average of Master and 4th Year FF Salary, Floater positions reduce overtime

FOILNINAL SAVINGS ALLOCATED VS FROFOSED

	Per Shift	Total	Costs
Engines	-8		
Captains	-33	-120	(\$7,277,160)
Lieutenants	25	75	\$4,134,750
FF	-35	-215	(\$11,017,675)
Total	-43	-272	(\$14,160,085)
Trucks	0		
Captains	11	33	\$2,001,219
Lieutenants	-10.75	-43	(\$2,370,590)
FF	-12	-81	(\$4,150,845)
Total	-11.75	-91	(\$4,520,216)
Chiefs			
DC	0	-1	(\$80,716)
BC	0	-5	(\$366,895)
Safety/Training	1	3	\$220,137
Total	0	-6	(\$227,474)
Squad	0		
Captain	4	12	\$727,716
FF	11	32	\$1,639,840
Total	15	44	\$2,367,556
Floaters			
Captains	-4.45	-3248.5	(\$1,075,254)
Lieutenants	-1.39	-1014.7	(\$335,866)
FF	4.84	-16095.8	(\$1,203,676)
Total	4.84	81	(\$2,614,795)
Total Personnel	-28.75	-288	(\$19,155,014)

Admin	Proposed	Change	Change
Chief of Bureau of Fire	1	0	\$0
Deputy Chief - Bureau of Fire	1	1	\$82,000
Asst Chief - Operations	1	0	\$0
Asst Chief - Prevention	1	1	\$80,096
Asst Chief - Training & Safety	1	1	\$80,716
Asst Chief - Administration	1	1	\$80,716
Battalion Chief	0	-1	(\$73,379)
Instructor	2	-4	(\$266,832)
Fire Prevention Specialists	8	8	\$441,040
Total Administration	16	7	\$424,357

Assumes Lieutenants on Engines, Captains on Trucks, Firefighter pay average of Master and 4^{th} Year FF salary

Appendix Two

Administration Organizational Chart



Appendix Three

Operations Organizational Chart



Appendix Four

Fire Prevention Organizational Chart



Appendix Five

Comments from NFPA 1710, 2001 edition

"4.1.2.1.1 (2)* - four minutes (240 seconds) or less for the arrival of the first arriving Engine company at a fire suppression incident and / or 8 minutes (480 seconds) or less for the deployment of a full first alarm assignment at a fire suppression incident."

"4.1.2.1.2 – The fire department shall establish a performance objective of not less than 90 percent for the achievement of each response time objective specified in 4.1.2.1.1."

Appendix – an asterisk (*) in the standard indicates to refer to the Appendices for clarification on comments made in the standard. The * shown in 4.1.2.1.1 (2) relates to the following statement -

"A.4.1.2.1.1 (2) – this service delivery requirement is intended to have a fire department plan and situate its resources to consistently meet a 4 – minute initial company fire suppression response and 8 minute full alarm fire response assignment. However, it is recognized that while on some occasions (for example a company is out of service for training) the initial company response may not be met in the 4-minute requirement, the 8-minute criteria must always be met."

Appendix Six

Current City of Pittsburgh Bureau of Fire Station and Company Assignments

Company	Туре	Address	Location
No. 3 *	Engine	1401 Penn Ave., 22	Strip District
No. 4	Engine & Truck	1324 Forbes Ave.	Mercy Hospital
No. 5*	Engine	2945 Webster Ave.	Hill District
No. 6	Engine & Truck	3958 Penn Ave.	Lawrenceville
No. 7	Engine	4603 Stanton Ave.	Stanton Heights
No. 8	Engine & Truck	5714 Penn Circle W.	East Liberty
No. 10	Engine	2500 Allequippa St.	Upper Oakland
No. 11*	Engine	800 S. Millvale Ave.	Baum Blvd.
No. 12	Engine	4156 Winterburn St.	Greenfield
No. 13*	Engine & Truck	200 Flowers Ave.	Hazelwood
No. 14*	Truck	259 McKee Pl.	Oakland
No. 15	Engine	7024 Lemington Ave.	Homewood
No. 17	Engine & Truck	7601 Hamilton Ave.	Homewood
No. 18	Quint (Engine / Truck)	5858 Northumberland	Squirrel Hill
No. 19	Engine	195 Homestead St.	Swisshelm Park
No. 20	Engine	514 Baldwin Road	Hays
No. 21*	Engine	212 Walter Ave.	Allentown
No. 22	Engine	1945 Arlington Ave.	Arlington
No. 23*	Quint (Engine / Truck)	1704 Brownsville Rd.	Carrick
No. 24	Engine & Truck	1729 Mary St.	South Side
No. 25*	Engine	2406 Saw Mill Run	Rt. 88 & 51
No. 26	Engine & Truck	630 Brookline Blvd.	Brookline
No. 27	Quint (Engine / Truck)	96 Virginia Ave.	Mt. Washington
No. 28	Engine	1428 Beechview Ave.	Beechview
No. 29	Engine	2100 Noblestown Rd.	Westwood
No. 30	Engine & Truck	916 Steuben St.	Elliot
No. 31	Engine	3000 Chartiers Ave.	Sheraden
No. 32 / 33	Engine 32 & Truck 33	900 Spring Garden	Spring Garden
No. 34*	Engine	3914 Perrysville Ave.	Perry High School
No. 34*	Truck	3284 Central Avenue	Woods Run Area
No. 35*	Engine	1519 Orchlee St.	Brighton Heights
No. 36*	Engine	2800 Shadeland Ave.	Marshal/Brighton
No. 37	Engine	1124 W. North Ave.	Manchester
No. 38*	Engine	198 Essen St.	Northview Heights

No. 39 Engine 1800 Ley St. Troy Hill

* recommended for closing with 3 new stations to be built by in the areas of current stations 23 & 25, 34 & 35, and 38

Appendix Seven



Zone 1

Map legend

Appendix Eight



Recommended Station Closings in Zones 1-2, 1-3, 1-5, and 1-6

Station 34 located at 3914 Perrysville Avenue - Perry High School Area Station 34 located at 3284 Central Avenue - Woods Run Area Station 35 located at 1519 Orchlee Street - Brighton Heights Station 36 located at 2800 Shadeland Avenue - Marshal/Brighton Area Station 38 located at 198 Essen Street - Northview Heights

New construction of two Fire Stations in Zones 1-5 and 1-7

Map legend

Appendix Nine



Recommended Station Closing in Zone 1-4

Station 3 located at 1401 Penn Avenue - Strip District

Map legend

Appendix Ten

Zone 2 – Western Areas

Map legend

Appendix Eleven



Recommended Station Closings in Zones 2-2 and 2-7

Station 5 located at 2945 Webster Avenue - Hill District Station 11 located at 800 S. Millvale Avenue - Baum Boulevard Area Station 14 located at 259 McKee Place – Oakland

Map legend



Appendix Twelve

Zone 2 – Southern Areas

Recommended Station Closing in Zone 2-12

Station 13 located at 200 Flowers Avenue - Hazelwood

Map legend



Appendix Thirteen

Zone 4

Map legend



Appendix Fourteen

Recommended Station Closing in Zone 4-5

Station 21 located at 212 Walter Avenue - Allentown

Map legend



Recommended Station Closings in Zones 4-9 and 4-11

Station 23 located at 1704 Brownsville Road - Carrick Station 25 located at 2406 Saw Mill Run - Route 88 & 51

New construction of one Fire Station in Zone 4-9

Map legend

Appendix Sixteen

References

1) Current organized labor contract between the City of Pittsburgh and Local 1 of the International Association of Fire Fighters

2) Copy of the current organized labor contract between the City of Pittsburgh and Local1 Fraternal Association of Professional Paramedics

3) Mission statements or department descriptions, which identify the roles and responsibilities of the Bureau of Fire and EMS in the delivery of public safety services to the City of Pittsburgh

4) Ernst and Young study of the Bureau of Fire

5) Copies of the Annual Bureau of Fire Report for the past five years

6) Deployment plan for Bureau of Fire, City of Pittsburgh, Pennsylvania

7) Geographical identification and City Map of the 5 - Battalion Zones

8) Bureau of Fire personnel roster with names, ranks, and start dates

9) Bureau of Fire Budget for the past three years

10) Copies of any mutual aid agreements with governmental entities other than those within the City of Pittsburgh

11) Bureau of Fire Standard Operating Procedures or Guidelines and Administrative Rules or Policy

12) Bureau of Fire Safety Program, Maintenance Program, and Training Program

- 13) Bureau of Fire Incident Response Data taken from the NFIRS Reporting System
- 14) Fire Prevention Activity Reports for the Bureau of Fire
- 15) Firefighter Personnel Injury / Death Data

16) Inventory sheets identifying tools and equipment carried on the various types of apparatus within the Bureau of Fire, including hose lengths, diameters, flow capacities of nozzles, SCBA, ladders, ropes, and small tools and rescue equipment

17) Radio communication information including frequencies and communication plan for use of dispatch and fire ground operation channels

18) Job descriptions and requirements for all positions in the Bureau of Fire and Bureau of EMS

19) Sample copies of all Bureau of Fire reports (incidents, inspection, pre fire plans, injury, accident, training, etc.)

20) Copies of all firefighter injury / death investigation reports for the past five years