

INTRODUCTION

Senefeld and Associates was retained by the City of Muncie to conduct a study of the current locations of their fire stations in an effort to determine if these stations were located such that fire apparatus could provide the finest service possible.

SCOPE

To determine if the stations were located where apparatus would be able to provide acceptable response time, Senefeld and Associates reviewed the response history for the last four years and potential growth areas of the City. Senefeld and Associates also reviewed station locations in reference to this response data and obstructions to these responses such as railroad crossings and possible traffic congestion. Also factored into the study were high hazards such as warehouses with known quantities of hazardous materials, nursing homes and high rise structures within the response district of the City.

To conduct a study of the responses that the City of Muncie has made in the last four years, the staff at Senefeld and Associates with the assistance of the staff of Muncie Fire Department, obtained response data in MS Excel format. The over 6,800 responses were then transferred into a dBase IV file and this permitted the data to be transferred into a Geographical Indicator System (GIS). The GIS permits each response to be located on a map of the response area. Responses for each year were plotted to permit a review of response patterns. A number of methods were used to determine the best locations for these stations. One method was to factor in the posted speed limits for the various streets in the response area and by using an average speed of 30 mph determine where the apparatus should be able to be respond to within the district. At this speed, the time for the apparatus to de-accelerate, stopping, and re-accelerating is factored in for the streets with the City.

Senefeld and Associates, through the data entry, has been able to correlate each year onto an overlapping mapping program that will indicate the location of the responses in the City's Fire Protection District.

The location of each fire station was factored into the study to determine if the station was providing the best service to the area. Also considered, was the type of apparatus that responded out of each station to determine if any overlap of services was present and by relocating some apparatus or stations could services be improved.

The third method was to enter all critical data for the last four years responses and determine what was the response time for each of the fire stations. These were plotted on various maps that would clearly indicate where the apparatus could travel within a given time frame.

Input from the firefighters and chief officers was also collected to gather their opinions of the current stations, their locations and whether they felt the stations were located such that they provided the best service possible to the community.

1.0 STATION 1

Constructed in the early 1900's and then renovated in 1977, with a one story addition, the station houses not only fire apparatus and personnel but also the administration offices for the department. The station has three apparatus bays that are approximately 47' x 71' in size, has 12' x 12' apparatus doors with a ceiling height in the fire bays of 13' and a PlyMovent system is provided to remove apparatus exhaust. Fire gear storage is provided through an open 'wardrobe style' storage system with 'off duty' gear storage provided in the basement.

The administration offices are located on the first floor and are extremely small for the daily operations that are conducted by the department. The Chief's office is accessible directly off of the front lobby thus providing little or no separation from distraction of activities that commonly occur in the lobby. The Assistant Chief and Deputy Chief share a small office that is roughly 10'x15' in size. Two Lieutenant Fire Inspectors share an office that is roughly 10'x15'. The Chief Inspector's office is approximately 10'x12' in dimensions and is extremely small. To meet with outside agencies, members of the community that desire to meet with department staff officers or other individuals that often come in to the fire administration offices on a daily basis have no conference room available to conduct such meetings. The Secretary/Receptionist has a small working space with little or no waiting space. Storage space for all of the offices is limited to a room that measures approximately 8'x8'.

A maintenance bay exists at the rear of the building that is accessible from the alley where all minor and routine maintenance work on fire apparatus is performed. Bay size is approximately 20'x60' and has no lift or pit facilities that are needed to perform repairs and servicing on modern fire apparatus. Nearly all tools and equipment is stored along the bay walls and oil is stored in a small closet. At the rear of the facility is parking for staff.

apparatus checkouts since this would place them in the travel portion of the street. Personnel cannot pull apparatus out of station to conduct equipment checks and when the apparatus attempts to back into the station upon returning to the station requires stopping all eastbound traffic.

- Apparatus bays are extremely small both in floor space and height. The size of today's fire apparatus continues to enlarge and would not be able to fit into the station. The overhead doors permit the apparatus access but in the event a compartment door is not fully closed could result in damage to the apparatus and could also cause serious structural damage to the station. With the reserve apparatus being stationed behind front-line apparatus, movement around inside the station by personnel is extremely hampered. It should be noted that when this station was constructed the apparatus at that time had sufficient room. With the advent of the apparatus that department's need for protecting cities such as Muncie, this station will not accommodate operations of today's apparatus that are constructed with ten foot height plus. The downtown area with high-rise units, office buildings and other structures that are over 3 stories in height, require aerial apparatus in close proximity.
- The offices in the station are not conducive to fire department operations that occur on a daily basis. Offices are not available for many officers and many times they are sharing space. This does not permit these individuals the ability to conduct business with personnel or outside agencies without intruding on other officers. The lack of space to store records or equipment is seriously lacking and hampers operations. The close proximity of the offices to the building entrance causes disruption of operations when visitors enter and exit the office. It was also noted that the station, because of the cramped quarters does not comply with ADA requirements for this type of public facility.
- The area provided for training is lacking in not only size and space but the current facility is located below the apparatus bays and water is leaking down

into the room. The room needs to be conducive to learning so that current firefighters and new personnel's interest is maintained during training sessions. Storage space for training aids and equipment is needed and not available in the current facility. If other companies wish to attend training at the main station, parking is not readily available.

- The maintenance facility is extremely small and access is limited. Again due to apparatus size that is commonly found in the fire service the maintenance personnel can access the facility but moving around inside is extremely difficult. Working on more than one apparatus at a time is not possible due to the lack of space in the current facility.
- There is a lack of space for personnel to be able to workout and conduct physical fitness training that is critical to today's firefighting operations. Personnel need space for cardiovascular exercising as well as weight training. The space should be large enough to accommodate the number of personnel that are on duty.