Is the Staffing and Deployment in Howland Township Adequate?

Ohio Fire Executive Program

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Warren, Ohio

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ABSTRACT

Howland Township has experienced considerable growth over the past forty-five years. Retention and recruitment of volunteer firefighters is following the national downward trend. Howland Township has three fire stations. The last two were built in 1957. Commercial, industrial, and residential locations at that time determined the placement of the stations.

As a result of this continued growth, traffic increase, and call volume increases, it was not clear whether the Howland Fire Department was providing adequate services to the community.

A search for available data was the first step in starting this descriptive research paper. Data was gathered from Township records, Trumbull County Planning Commission, National Publications, and the National Fire Academy Library Resource Center.

Once this data was gathered, the historical results of the Howland Fire Department were compared to the national standard and other's recommendations. Following this procedure, a computer program was used to determine the most advantageous station locations and staffing was determined on several risk factors.

The results gave insight that relocation of one existing station and building of a new station would offer the best coverage for the community. The recommendation was to build two new stations and re-deploy current staffing. The research recommendations allows for any future growth and when to deploy additional staffing.

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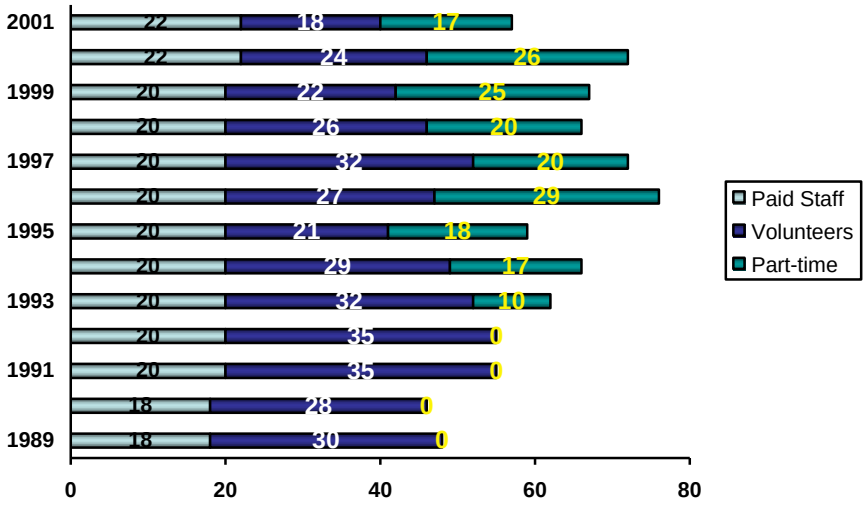
INTRODUCTION

The Howland Fire Department is charged with the risk management of the community. In order to have effective and efficient distribution and operation of the Howland Fire Department, several elements need to be evaluated. As a result of forty-five years of continued growth and increased services provided to the community, it was not certain that adequate staffing and deployment was being achieved by the Township's Fire Department. This growth has resulted in increased buildings, traffic, and call volume. Areas furthest from current fire stations have now built up, increasing response times.

It was determined that a descriptive research process would be used to achieve the desired results.

Being adjacent to the City of Warren, Howland Township is urban in character and contains three fire stations. The main station, built in 1945, is located on State Route 46 at Howland Corners. The two sub-stations built, in 1957, are located at 3403 Ridge Rd. SE (Bolindale) and 2180 Wilson Ave. NE (Morgandale). All stations have had subsequent additions.

The Howland Fire Department has grown from an all-volunteer staffed department in 1945 to the current combination staffed department in 2002. Current staffing consists of 22 career personnel, 18 part-time personnel, and 17 volunteer personnel. The department also has one full-time administrative assistant and one part-time secretary. (Figure 1)



Howland Fire Department Staff

Figure 1

Historically, the Howland Fire Department has prided itself on quick response times. Several items both internal and external have a direct effect on response times. Actual data was not tracked until 1993, when part-time staffing was provided to assist in daytime responses. This action showed our response times to be 7.08 minutes when the stations were not staffed. When they were staffed, response times were reduced to 3.73 minutes. However, several areas of the Township are not receiving good or even fair response times.

Many internal and external factors have a direct reflection on the response times achieved. There are two major internal factors. The first is the inability to staff personnel at the substations on a full-time basis. The second is the inability to recruit and retain volunteer personnel to cover the stations when staffing is absent. The two external factors are 1) the growth to the northeast and southeast areas of the Township and 2) increased traffic congestion. The Township has enjoyed continued growth both commercial and residential in the last forty-five years. These forty-five years are essential since this is the last time new fire stations were built to protect a specific area in the community. Large amounts of commercial growth have occurred in three major traffic corridors. The Niles Cortland Rd. (St. Rt. 46) north-south corridor, the East

Market St, east-west corridor, and the Elm Rd. (St. Rt. 5) corridor in the western corner of the Township have all seen major build-up in the last forty-five years. The Township valuation has doubled within the last fifteen years. There have also been more than twenty residential allotments started in this fifteen-year period.

This research is intended to determine if there is a need to build new or relocate existing fire stations to better serve the community and to determine what staffing would be required to maintain services previously provided to the residents of the Township.

Several publications, research papers and internal data will be researched to determine the best way to determine staffing and deployment. There is considerable information available, but there appears to be little or no standard criteria and factors for each area to be researched.

The following questions will be answered.

1. Is the current deployment and staffing appropriate considering the growth and changes in the community?
2. Is the organization effective in delivering the services offered in a timely manner?
3. Are the missions, visions, and goals of the department realistic and obtainable?
4. What are the reasons for the departments past success?
5. Will past performance be acceptable in the future?
6. Who will need to approve the recommendations?
7. Will the changes take into account future growth of the community?
8. What is the most effective and efficient use of public and private resources to provide the recommended levels of service?

BACKGROUND AND SIGNIFICANCE

The Howland Fire Department, as stated previously, is the risk management department for the community. The department provides a quadra of services that protects life and property. They include fire suppression, emergency medical services, rescue operations, code enforcement, fire prevention, hazardous materials, training, and non-emergency transport services. There are several factors in providing these services. Response capability would review the staffing available to respond even in the event of multiple calls. The amount of time once the call is received until the crew arrives on the scene is important as fires increase and medical patient status worsens with time. Is the personnel trained in all areas necessary to provide the service requested by the customer? There are several national standards established as criteria to measure the department's effectiveness. These include fire service, health care, and insurance agencies that have published standards.

Research was done to see if this Township's growth has outgrown its ability to deliver services effectively. According to the Trumbull County Planning Commission (TCPC, 1999) in the Howland Township master plan, the population of the Township has grown from 11,842 in 1960 to 17,502 in 1994. The U.S. Census (2001) reports the Township population at 17,540. While the significance of population in the Township is important, the influx of transient population due to commercial growth is a major factor. As is the case nationwide, there are more families with less children, resulting in more structures with less population in them. The Township has no set method or criteria to follow as to when a fire station needs added. It also has no criteria for where or when to build stations.

The largest controlling factor or performance factor relied on in the past was the Insurance Services Office (ISO, 1980) fire suppression rating schedule. The Township, in the

past fifteen years, was upgraded from a class 9/5 to a class 3 community. This rating schedule recommends that a fire engine be located no further than 1.5 mile from any area. It also recommends that a ladder truck be no more than 2.5 miles from any area. Howland Township now has several areas that are outside of these perimeters.

As research was being done on this project, maps showing deficiency areas based on run volume, response times, and distance traveled were completed. This information will be valuable as it compares to national standards and risk criteria. The data also will be utilized as it compares to the same types of response whether staffed or not staffed.

This research paper was conducted as a part of the Ohio Fire Executive Program and will be presented to Howland Township as a tool for elected officials to make a more informed decision on staffing and deployment of the Howland Fire Department.

LITERATURE REVIEW

The United States Fire Administration Learning Resource Center Library was utilized for the literature review. An internet review was conducted and several previous research papers and reports were requested. There were several papers reviewed, five were used as part of this research paper.

Fitzpatrick, R conducted a study, distance versus travel time, with the methodology that distance alone could not be used as a factor in response time. As was shown in this study, the ability to use larger roadways and obtain a cruising speed would allow a fire apparatus farther away to arrive quicker. “Average apparatus speeds ranged from 19 mile-per-hour on short, downtown, multiple lane streets to 36 mile-per-hour on long, non-residential, multi-lane streets (Public Technology, Inc., 1988)” (p. 5).

Denver Urban Observatory (1974) showed in their report that moving existing fire stations and combining resources could be cost effective and improve efficiency. The report stated, "the most interesting result from the Denver project was the ability to develop (through a combination of judgment and quantitative analysis) a station configuration which provides the same level of service with five fewer companies" (p. 15). Another tool used by the Denver study was the Station Configuration Information Model or SCIM, which allowed proposed configurations to be analyzed.

Chaiken and Bruns (1978) pointed out that master planning, good statistics, and costs were major factors in success. It also looked at dispatching times as a factor in improving response times. This proved to be a factor that was not considered previously. Trumbull County 9-1-1 dispatch times for calls were determined to be one minute and forty-nine seconds on the average.

In looking at the difficulty of determining station location, the report stated "if you have only three stations you shouldn't need complicated techniques to figure out whether they are well-located and, if not, where better sites might be" (p. 6).

The study by T. Harmer (1993) was beneficial as a way to establish risk factors as criteria for determining when to build new stations. This study looked at response times, risk factors, and travel distance of 1.5 miles, demand zones, and all areas outside 5 road miles of existing stations.

A staffing review, written by B. Spicer (2000), gave indication that staffing levels do not always have a direct effect on efficiency. The review determined "The results from the research project did not indicate a fourth person assigned to the engine company would significantly increase efficiency…." (p. 20).

Fire suppression rating schedule (ISO, 1980) was reviewed. The publication stated, “The built upon area of a city should have a first due engine company within 1.5 miles and a ladder service company within 2.5 miles” (p. 22). The Howland Fire Department currently rates a class 3, which puts it in the top 3% of the communities in the State of Ohio and the United States.

Cote (1997), discusses the planning of fire station locations declaring, “nothing is more important than the element of time when an emergency is reported. Fire growth can expand at a rate many times its volume per minute”(p.10-250). The document also supports the adoption of standards for the community. Once locations are adopted, then resources can be allocated. The risks of an area protected by a fire station should also be a factor.

Bachtler and Brennan (1995), sets response distance standards of commercial areas within one mile, residential areas within two miles, and low risk areas within three miles. It also states that street layouts, traffic density, response hazards, special needs, response history, anticipated change, and volunteer members residences must all be taken into consideration.

Coleman and Granito (1998, p. 77), refer to the following factors when planning for community fire protection.

1. “Identify the nature and the extent of the risk it faces”
2. “Establish the levels of service desired”
3. “Identify the most efficient and effective use of public and private resources to provide the established service levels”
4. “Implement a management and evaluation system that ensures the attachment and timely revision of service level standards”.

They also suggest a review of historical data, (ISO rating), the components of a larger system, the impact of the department, and the financial concerns.

The (TCPC, 1999) completed the Howland Township Comprehensive Plan, the plan provided much of the community data and information that would be needed. The plan quotes, " Therefore, as was recommended in the 1997 Howland Fire Department Development Plan, two new fire stations should be built in the vicinity of the Eastwood Mall and State Route 46 at or between North River Road and King-Graves Road"(p. 154).

The Howland Fire Department's annual reports and development plan would provide additional statistics for the research study. These reports provided information and history of call volume, response times, budgets, and loss history. This data will be invaluable in determining service needs and will allow for consideration of future growth.

The computer program by Bode, J. (FLAME 1992-1996) will be utilized to determine the hypothesis of the correct station locations. In order to do this, the station criteria will need to be determined and then station configurations for the most cost effective and efficient will be sought. Maps will be generated to show how proposed new locations would improve deficient areas.

The National Fire Protection Association (NFPA 2001) has adopted NFPA 1710 and 1720 standards. The standard would, "specify the minimum criteria addressing the effectiveness and efficiency of the career public fire suppression, emergency medical service, and special operations delivery in protecting the public of the jurisdiction and the occupational safety and health of fire department employees" (NFPA, 2001) (p1710-4).

As a result of the literature review, it was felt that enough information and data was available to meet the desired intent of the research paper.

PROCEDURES

The need to search for available data was the first step in starting the research paper. The historical growth would require obtaining data from the Howland Townships Zoning Department (HTZD, 1992-2001) and the (HTCP, 1999). This data would look at new construction, traffic patterns, congestion points, and future growth potential.

The second step was to review all available data from the Howland Fire Department. This would include data on response times both when the stations were staffed and non-staffed. This step required the review of not only the total travel distance, traffic issue, staffed versus not staffed, but also the adequacy of the available crew. The call volumes and type of calls would be included as determination of emphasis.

The third step was to see how this data compares to national standards, other publications, and research papers reviewed.

The fourth step was to use national standards and computer programs to determine if a more efficient and effective proposal is capable.

The fifth and final step was to analyze staffing according to the recommendation of national standard and research papers reviewed.

These steps, all-inclusive, will allow the results to be presented to the Howland Township Board of Trustees.

RESULTS

Howland Township is situated in Trumbull County. Trumbull County is found in the northeast corner of the State of Ohio. The Township would be considered urban in nature, with a more upscale population. The population has continued to grow, except for the 1990's, which saw a decrease, as did all other communities in the county. However, for the purposes of this

research paper, the population has almost doubled since the last fire station was built. The (HTCP, 1999), stated that 44.23% of all the acreage in Howland Township was devoted to residential land use. This figure nearly doubled that found in the 1975 Land Use Survey. The report also stated the Township still has 30.66% of acreage considered open space. Commercial property use from 1975 to 1996 grew from 1% to 4.39% and that number continues to increase.

As an example of the continued growth, since 1996, the Township has seen the following new growth not counting permits for additions. (Figure 2)

Howland Township Zoning Yearly Reports

Year	**Residential** *	**Commercial**
1996	83	13
1997	87	8
1998	79	9
1999	77	9
2000	86	9
2001	54	9

- ***Includes multi-family units, which accounted for 94 of the residential properties***

Howland Zoning Yearly Report

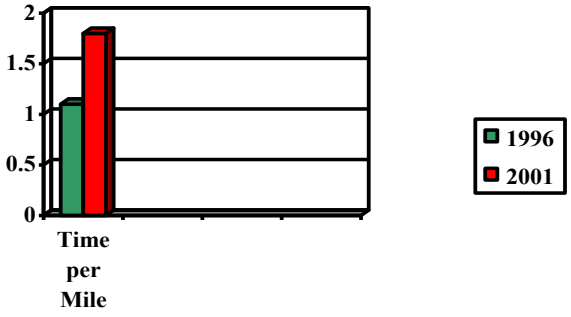
Figure 2

A report from the Howland Township Zoning Inspector in October 2001 showed 16 developments had 206 single family and 309 multi-family lots available for building. This reflects the continued growth in the community and the added need for services or expanded services provided by the fire department.

Howland Township has good arterial traffic corridors. However, due to the transverse of the Mosquito Creek from the north to the south of the community in its central area, there are

only three ways to get from the eastern portion of the Township to the western portion of the Township. These corridors are North River Rd. to the north, East Market St. (Old Rt. 82) in the center and State Rt. 422 to the east. This hampers movements to the western portion of the community. The increased traffic flow has required the recent widening of State Rt. 46 (south) and a new interchange for State Rt. 11 at King Graves Road. Proposed widening of State Rt. 46 (north), State Rt. 422, and a State Rt. 46 (south) connector are in process. These projects substantiate the increased response times that are associated with traffic concerns.

These concerns are characterized by the increase in response times. In 1996, travel distance was 1.1 minute per mile. In 2001the travel distance response time increased to 1.83 minute. (Figure 3) This indicates a 60% increase in response times. Because of this increase, more areas fall into a deficient area due to response times exceeding acceptable national standards.



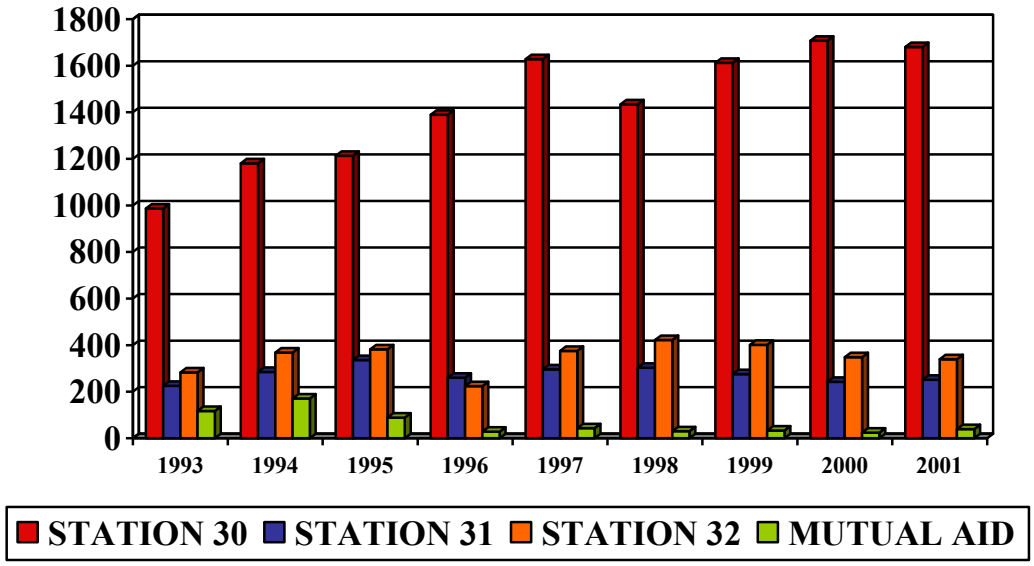
Time Per Mile Response

Howland Fire Department Annual Reports

Figure 3

The valuation of the Township has grown from approximately 272 million dollars in 1987 to 434 million dollars in 2001. This represents a 63% increase, which confirms the added protection requirements and a reason for increased traffic flow.

The Township is divided into three response areas, which are primary areas, served by its three fire stations. The calls received by each area were reviewed and it was found that while the Bolindale Station #31 and Morgandale Station #32 have seen a slight decrease or steady call volume, the main station or Howland Corner Station #30 has seen an increase from just under a thousand calls in 1993 to over sixteen hundred calls in 2001. (Figure 4)



Howland Fire Department

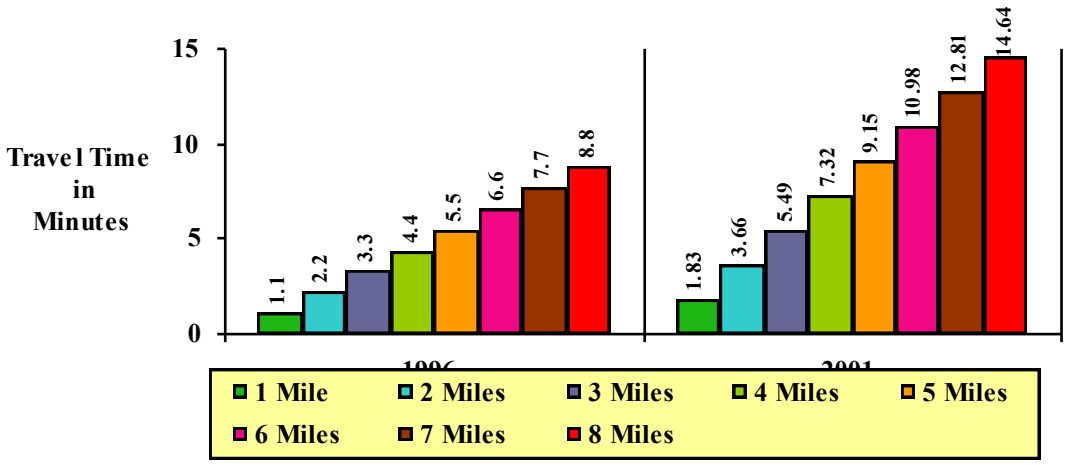
Historical Call Volume

Figure 4

The response distance to calls has increased with the built up of the northeast and southeast sections of the community areas. These areas are as much as 3.2 miles from the closest station per the Howland Development Plan, 1997. The inability to respond with volunteers has meant responses from Station #30 to Bolindale and Morgandale areas of 4.6 to 4.7 miles, which increases response distances. (Figure 5)

The call volume for Howland Township Fire Department is averaging about seven calls per day. It is unrealistic to have the public fund enough tax support to staff all stations with on-

duty personnel. However, in utilizing the Flame Program by Bode, staffing the two new proposed stations with current personnel would reduce travel distance by 1.5 miles or 2.75 minutes, which would reduce damage or loss of life in the Bolindale or Morgandale areas. These stations are seeing less than one call per day. This proposal would allow for a close response of



Response Travel Per Mile

Howland Fire Department Annual Report

Figure 5

four of the seven calls received each day. The study in Tallahassee by Harmer, discussed risk criteria of three calls per day as the amount of calls when a station should be built. This would also be appropriate for when a station should be staffed. Following this criterion, it would suggest these stations would not require 100% staffing.

The National Fire Protection Association (NFPA) has developed staffing standards. Those standards are NFPA 1710 and NFPA 1720. NFPA 1710 covers career departments or mostly career departments. NFPA 1720 covers departments who are volunteer or mostly volunteer. There are differences of opinion on how to determine which standard a combination department falls. The most common definition was deciding who supports whom. In the Howland Fire Department, the volunteers support the career staff. Therefore, NFPA 1710 would

be used. It requires four personnel per fire engine to arrive in four minutes and a full first company assignment of fifteen personnel to arrive within eight minutes. A study of the past three years shows the department did not meet this standard once.

The Portsmouth Fire and Rescue Services report by Spicer, had results that showed a three person crew could be as effective as was a four-person crew. The result would be what gives you the best protection while meeting financial constraints. Additional personnel will need to be added to the current force, but should be done in increments that are in line with call volume, response times, and to maintain the I.S.O. Class 3 rating.

The research yielded the following results:

1) Is the current deployment and staffing appropriate considering the growth and changes in the community?

   The empirical data would show that current station locations were not adequate or appropriate due to the amount of calls being responded to outside acceptable times. The American Heart Association reports that brain death begins four to six minutes after respiratory arrest. The Fire Protection Handbook NFPA reports that fires grow by volumes for every minute a fire remains unattended. NFPA 1710 standard reports the first engine company should be on the scene within four minutes.

   The average response time in 2001 was 5.1 minutes for emergencies. However, certain areas far exceeded this number. Traffic congestion on State Rt. 46 is worst than it has ever been, and as reported by the Howland Township Comprehensive Plan, is a problem.

2) Is the organization effective in delivering the services offered in a timely fashion?

This answer is no! There are certain areas of the Township where the national standards are nowhere close to being met. However, the public in general is not aware of this and no public concerns have been raised.

3) Are the mission's goals and goals of the department realistic and obtainable?

Mission Statement

The Howland Fire Department and Emergency Services will be the risk managers and prevention leaders to meet the needs and desires of the community.

Vision Statement

Howland Fire Department and Emergency Services will provide customer service through prevention, education, and services. To meet the need of the community, no matter how small or complex, while ensuring the safety and well being of all.

A. Provide leadership in public safety issues.
B. Provide quality educational opportunities and career development.
C. Ensuring tools and equipment to meet needs of the community.
D. Obtain and maintain involvement and communication of the staff.

Goals are part of the strategic plan.

The department can obtain the goals and meet the mission and vision statements. However, this is a living document and will be in constant change. The department is currently not meeting these items completely.

4) What are the reasons for the departments past success?

The department has always been a trendsetter and on the cutting edge with technology. They were the first department in the county to offer paramedic service in the county in 1978. The department promotes an ongoing public education program

that touches over 5,000 people annually. Much work is done through the schools. The combination department has been utilized in keeping taxes low and insurance ratings the best in the county. A good training program keeps personnel up to speed with the latest technology. The fire losses have been historically low for a community of its size and makeup.

5) Will the past performance be acceptable in the future?

   The answer is no! The public is more aware of what the department does. Television shows similar to the early seventies show "Emergency" gave people the idea that fire departments should provide EMS services, now 80% of departments in Ohio do! The legal system has opened the door to lawsuits, which will again cause a reaction towards risk prevention. Public record laws will also make statistics readily available. Departments will need to meet the public's expectations or face the consequences.

6) Who will approve the recommendations?

   The Howland Township Board of Trustees will have the initial approval. Then the public will voice their thoughts. However, the public will react if the Board of Trustees does not respond in a timely manner.

7) Will the change take into account future growth of the community?

   The answer is yes! The recommendations take into account future growth by reviewing all the criteria and risk factors.

8) What is the most effective and efficient use of public and private resources to provide the recommended level of services?

The department's last tax levy was in 1988. These are continuing levies and, as a result, are collecting only 2.5 mills on Class I residential properties out of 5.5 voted mills because of

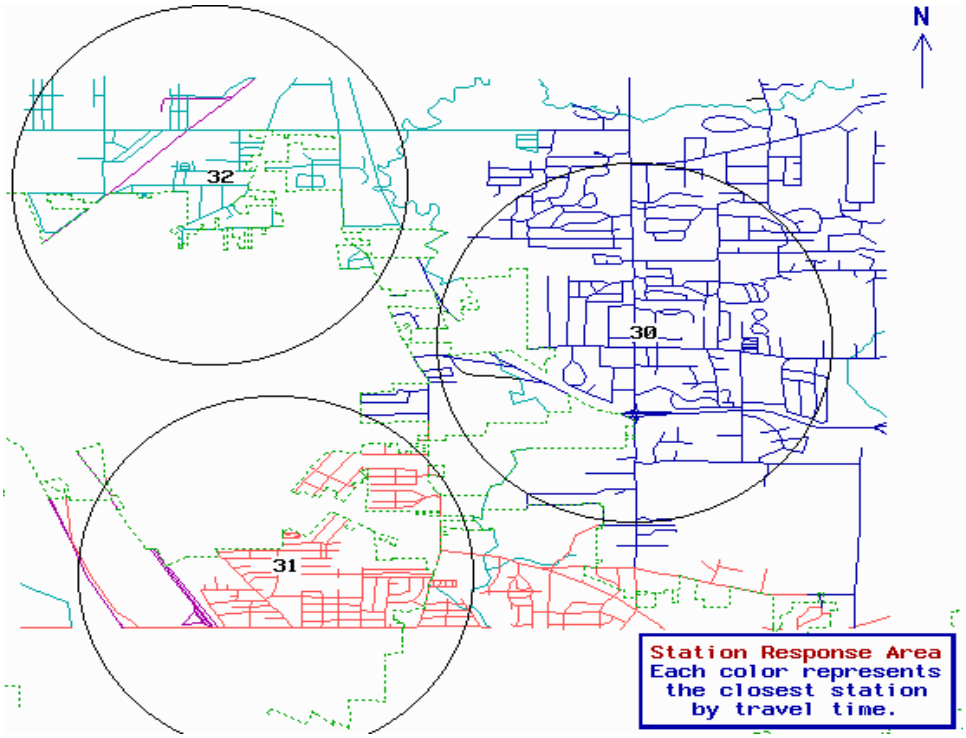
growth. The department also generated 31% of its expenditures in 2001 in non-tax dollars. These monies came from EMS billing, grants, etc.

DISCUSSION

Howland Township is still a growing urban community. While the residential population has declined in the past decade (Trumbull County, 1999), the number of structures both residential and commercial has increased. As a result, transient population due to the commercial build up has increased dramatically. There was still 3,550.75 acres of vacant land in the Township to build upon as of December 1998, (Frankland 1998). The trend over the last ten years shows a build up of 708 residential structures, 86 commercial structures, and a planned and plotted additional 206 single family residential and 309 multi-family lots, (Howland Zoning 2001). The majority of this residential growth, 56%, has been in the eastern portion of the Township (see graph), which accounted for 1,220 residential permits since 1991 (Howland Zoning 2002).

Establishing that growth has occurred and will continue to occur, the next step is to determine if the current coverage is adequate or are there other proposals.

As stated, the Township is currently served by three fire stations. The original station (Station # 30) was built in 1945 with several subsequent additions. It is located at 169 Niles Cortland Rd. N.E. (Howland Corners). In 1957, the Township built two substations, one in the Bolindale area (Station #31) at 3403 Ridge Rd. SE, and the other in the Morgandale area (Station #32) located at 2180 Wilson Ave. N.E. (Figure 6)

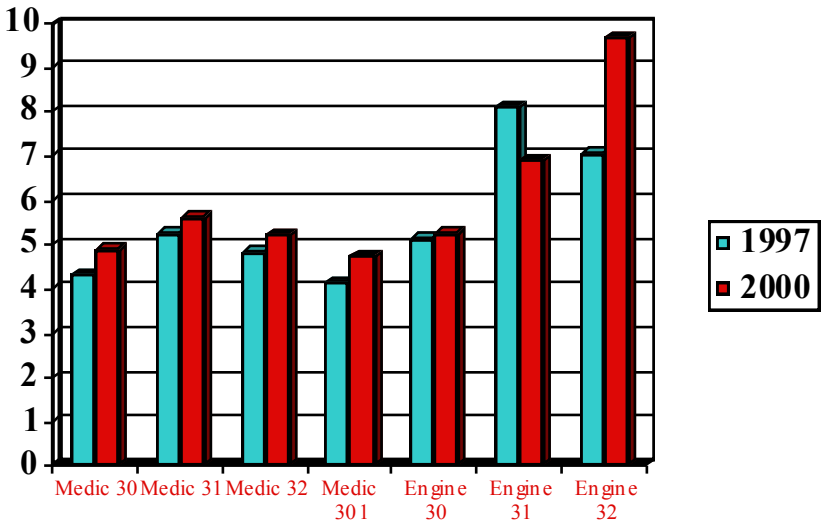


Existing Fire Station Locations

FLAME Program

Figure 6

The department was an all-volunteer department at that time. In the 1960's, dispatchers and a fire chief were first hired. Later in that decade, drivers were employed. In the 1970's, firefighters were employed and the department began to provide Emergency Medical Services transports. In the late 1970's into the 1980', additional fire personnel were hired as calls increased. In the 1990's, part-time staffing was implemented to supplement career staffing when volunteer personnel were not available. Later in the 1990's, this part-time staffing covered shifts when full-time firefighters were scheduled off or absent. This again, as result of increased call volume and a dwindling volunteer staff.



Average Response Time Per Unit

Howland Fire Department Annual Report

Figure 7

Increased response times, due to crowded highways, build-up of areas outside of the one and one half mile radius of the three fire stations, has caused the response time to increase 60% in the last five years. (Figure 7) Currently, there are areas 3.7 miles or farther from first response companies. At 1.83 minutes per response mile, that would mean response times to these areas are 6.77 minutes not counting the average dispatch time of 1.49 minutes per call for a total response time of 8 minutes and 35 seconds for these areas. It is recommended that the first arriving fire engine or EMS Unit arrive within four minutes (NFPA 2001). This means that these areas are twice the recommended limits. This assumption is that the fire stations are staffed; volunteer responses would increase this response time.

Fire stations should be no more than one and one half miles from response areas (ISO 1980), would mean that one new station and one station relocation is needed to adequately cover the Township as a whole. This would allow for response area coverage, but would not guarantee arrival times because of staffing issues. This risk would have to be evaluated to determine nature and extent of risk, levels of service desired, and effective use of public and private funds (ICMA

1988). It is recommended that response to commercial areas be one mile, residential areas two miles, and low-density areas be three miles (Fire Chief 1995).

It is understood that not all criteria can be achieved due to the financial constraints. Therefore, the risks of response times must be considered (NFPA Handbook 1997).

The Tallahassee report sets criteria in the following manner:

1. Variable response standard from three minutes maximum risk to six minutes minimum risk. This level met 90% of all emergency calls.
2. Truck companies would be a five-minute to eight-minute response, taking into account five risk factor levels.
3. Identify all areas outside of five road miles of existing stations. These areas would be looked at when the areas had more than a 10% built up area.
4. The new station needs would be determined by time deficiencies of the area outside the five miles from an existing station.

Clovis, California and Pittsburgh, Pennsylvania used standards of response to 90% of all calls within five minutes or less. Sarasota, Florida uses the low risk within five miles, medium risk within three miles, and high risk within one and one half miles. Palm Beach, California uses criteria of three alarms per day. They also look at annual trends and development activity (Hamer, Tallahassee 1993).

These criteria were evaluated due to the tiered staffing levels and travel concerns of Howland Township.

The final area for consideration is customer satisfaction and availability of service. A study conducted by Youngstown State University (YSU, 1996), showed that 97%, of those surveyed, gave the Howland Fire Department a favorable rating. The results also indicated that

99% felt they were courteous, 100% felt they were professional, and 99% felt they were helpful. As to whether the Township should propose additional levies for each of the Township departments, the fire department received the highest support at 25% (YSU 1996).

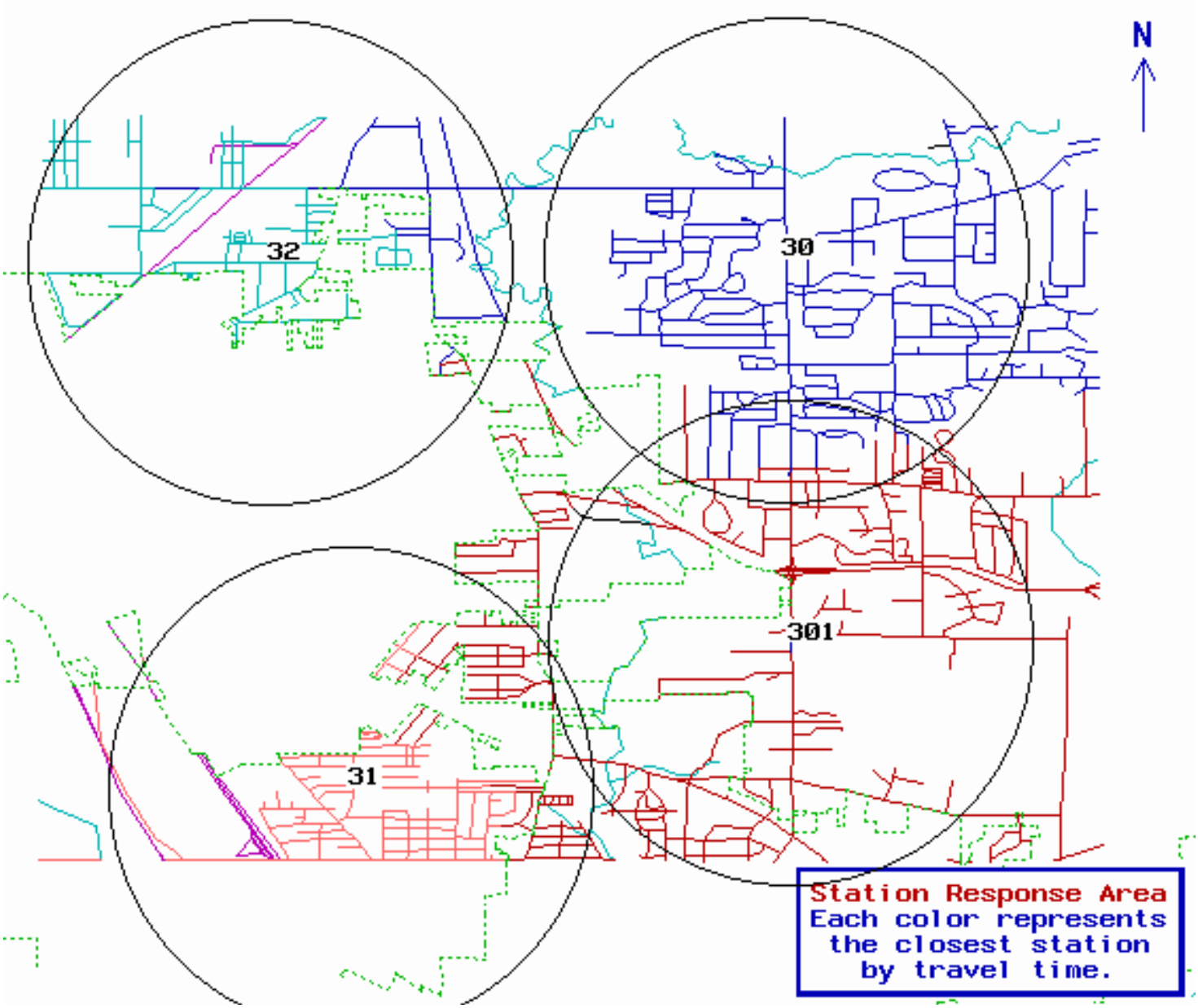
The result would be what criteria should be used to evaluate Howland Township's staffing and deployment and how will this criterion meet existing standards or studies.

RECOMMENDATIONS

The intent of this project was to determine if the staffing and deployment of the Howland Fire Department was adequate. A review of the standards and studies provided many different and sometimes opposing views.

No study took into account all of the issues involved in Howland Township. However, several similarities are important criteria that should be included. Factors such as growth, response times, call volume, travel distance, and risk prevailed throughout the reference material.

In comparing the current factors to the common criteria, several factors required attention. The first criterion to be addressed was response times. In order to meet the four to six minutes response times recommended, the F.L.A.M.E. Program was used to determine that one fire station needed relocated and a new fire station needed built. As a result of implementing this, the majority of calls in the Township would be achieved in less than six minutes. This proposed station locations would also improve the response time of units responding to the other station locations when volunteer personnel staff those stations. (Figure 8)



Four Station Configuration Proposed Locations

FLAME Program

Figure 8

The staffing of the two stations versus just one, with existing personnel, would put resources on a first response to a greater area of the community.

The growth criteria would use the three calls per day as a justification when to staff another station or increase staffing at stations already staffed.

Travel distances under this proposal would put over 90% of the Township within 11/2 miles of the first response engine. Because of the station configurations, any future growth could be handled by adding additional staffing.

The use of automatic mutual aid response is also recommended in order to have additional personnel at structure fires. This would further enhance the capabilities of meeting the need for fifteen personnel on the scene within eight minutes. The community should monitor the numbers of fires and their risk classification to assure adequate staffing for the safety of firefighters.

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