

Hamilton Township Fire Department Organization Analysis

March 2015

Management
Partners



Management Partners



March 25, 2015

Mr. Gary T. Boeres
Township Administrator
P.O. Box 699
7780 South State Route 48
Hamilton Twp. Ohio 45039

Dear Mr. Boeres:

Management Partners is pleased to transmit this project report on the results of the Fire Department Organization Analysis. The report is based on our review of department operations and service demand profiles, and data provided by Fire Department staff either through personal interviews or written documents. Management Partners also conducted a survey of fire department employees and used the results of that survey to inform our analysis.

The report makes 17 recommendations for improving the operations of the Hamilton Township Fire Department in the areas of organization structure, resource deployment, automatic aid practices, and use of industry best practices.

While cost savings was not a primary objective of the engagement the report does identify operational modifications that have the potential for saving nearly \$100,000 of annual operating costs. Other recommendations for strategic planning and regional cooperation would improve service quality while potentially saving money for fire departments in the region.

It has been a pleasure to work with the Hamilton Township officials and fire department staff and we look forward to discussing this report with you.

Sincerely,

A handwritten signature in black ink, appearing to read "Gerald E. Newfarmer", written in a cursive style.

Gerald E. Newfarmer
President and CEO

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Background

Hamilton Township has a professional fire department consisting of full- and part-time career service personnel. In addition to providing fire protection and emergency medical services to residents of Hamilton Township, the Village of Maineville, and the southern part of the Village of South Lebanon, the Township also has mutual and automatic aid agreements with 13 neighboring jurisdictions. The Hamilton Township occupies a 25 square mile area and has a population of 24,468. The land use in the Township is 46.3% agricultural/vacant, 38.2% residential, 8.8% recreation/open space, 3.8% public/semi-public space, 2.4% industrial, and 0.5% commercial.

Hamilton Township is home to schools (elementary to college), elder-care facilities, and industrial and commercial occupancies, all of which create a wide variety of hazards.

Hamilton Township is currently conducting a search for a new fire chief. As such, the township trustees determined it is prudent to have an expert review of the fire department during this transition in leadership and in light of the recent fiscal crisis the Township has faced. Accordingly, Management Partners was engaged to perform an organization analysis of the Fire Department and make recommendations to the Township Board of Trustees to enhance efficiency and effectiveness and to improve service quality.

Methodology

Management Partners provided a project team with extensive experience in fire department organization analyses as well as career command experience in fire department management and operations. Team members have executed numerous fire department organization reviews and staffing analyses including most recently Phoenix, Arizona; Covington and Florence, Kentucky; and St. Louis Park, Minnesota. The project team includes a member who previously served as the fire chief of Columbus, Ohio, for 10 years and is currently a board member of the National Fire Protection Association.

The project team members spent several days interviewing command staff of the department, visiting department facilities, and reviewing equipment. Team members analyzed land use information to develop a sense of the built environment that is protected and served. Service demand data, such as number of ambulance and fire runs, were provided by department staff and analyzed by Management Partners' team members to develop a comprehensive profile of service demand. Staffing and operations were compared with best practices and national standards. The standards and practices are set forth below.

The project team members applied their industry experience and insight to the information collected and developed an initial staffing analysis. This report details the outcomes of Management Partners' organization analysis and recommendations for operations.

Current Best Practice Parameters for Service Delivery

This section of the report sets forth the standards and best practice parameters which are referenced throughout the report.

Glossary of Related Terms

System Terms

Mutual Aid: Outside department assistance summoned to the incident after the home department has arrived and determined aid is needed.

Automatic Mutual Aid: Outside department units dispatched by pre-arrangement, simultaneously with the home department.

Nearest Station Response: Dispatching initial units from whichever station is closest to the incident and has units “in quarters” at that time.

Requirements and Standards Terms

Occupational Safety and Health Administration (OSHA) Requirements: Mandatory personnel safety obligations applied by federal and state OSHA, including “Best Practice” advisories, such as *Best Practices for Protecting EMS Responders During Treatment and Transport of Victims of Hazardous Substance Releases*.

National Institute for Occupational Safety and Health (NIOSH): Conducts relevant fire department incident analyses, investigates all firefighter line-of-duty deaths, inspects equipment involved in incident happenings, and issues advisories.

National Fire Protection Association (NFPA): Issues consensus-based standards which, although not legal requirements, may be judged in legal proceedings to have the weight of law. Those related most directly to the Hamilton Township Fire Department include:

- NFPA 1500 “Standard on Fire Department Occupational Safety and Health Program.”

- 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.”

Emergency Response Units and Personnel Terms

Engine Company: Pumper apparatus and full crew.

Ladder Company: Aerial ladder truck and crew.

Ambulance: A transport ambulance at basic life support (BLS) or advanced life support (ALS) level. ALS requires staffing by at least one certified paramedic.

Squad: Specialized vehicle carrying equipment used at technical rescue incidents such as confined space, trench collapse, high-angle, machinery, vehicle crash, building collapse, and mountain rescue.

EMT: Emergency medical technician trained and certified as a pre-hospital provider. The following list describes the different levels that can be achieved:

- First Responder (initial aid provider, defibrillator trained)
- EMT-Basic (trained at a basic level, not using invasive procedures)
- EMT-Intermediate (certified for some advanced procedures)
- EMT-Paramedic (certified for advanced life support protocols and some invasive procedures and operating under the license and direction of a physician director)

Paramedic Vehicle (engine, ambulance): ALS equipped and staffed to include at least one paramedic.

Rapid Intervention Team: Crew standing by solely to rescue endangered firefighters. Required by both OSHA and NFPA, the initial two-person team must be increased to four at working incidents. No personnel assigned as such a team is allowed to perform any other tasks except to stand by or enter the structure for rescue of downed firefighters. Note that this requires additional responders at the scene. Further, best practices do not include assigning a responding ambulance (medic) crew to tasks other than conducting emergency medical services at the incident.

Incident Command: Refers to the officer responsible for all incident activities, plus various command functions and protocols.

Safety Officer: Personnel at the scene with authority to override the Incident Commander if firefighter safety is endangered. This is both an OSHA and NFPA practice.

Summary of Basic Applicable National Standards

The national standard for response travel time goals of which Hamilton Township officials should be aware, and which reflect the typical exponential increase in structural fire growth, are summarized below.

Fire Suppression Incident

The NFPA recommended standard is four minutes (“wheels turning time”) or less for the arrival of the first-arriving engine company at a fire suppression or related incident and eight minutes (“wheels turning time”) or less for the deployment of a full first-alarm assignment at that fire suppression incident.

The group of firefighters servicing the first due engine company should consist of a minimum of four trained and equipped personnel. The group of firefighters servicing a full first-alarm assignment of apparatus (maximum of eight minutes arrival on scene), should consist of a minimum of fifteen trained and equipped responders for a single, detached, dwelling fire.

The OSHA “two in two out” regulation and NFPA Standard 1710 call for the presence of a minimum of four firefighters before entry may be made into an area which is immediately dangerous to life and health (IDLH fire area) unless it clearly is evident that a successful rescue may be accomplished. No fewer than two personnel remaining with visual or voice contact with each other may enter an IDLH area.

Working fires and similar incidents require the presence of a “Rapid Intervention Team” consisting of a minimum of four firefighters standing by for rescue entry, as specified by OSHA.

Emergency Medical Incident

The response time standard is four minutes (240 seconds) or less for the arrival of a unit with first responder and defibrillator (or higher) level capability at an emergency medical incident. The response time standard is eight minutes (480 seconds) or less for the arrival of an ALS unit at an emergency medical incident, where this service is provided by the fire department.

These travel time allowances do not include dispatch and turn-out time. One additional minute is allowed for dispatch and one minute is added for turn-out time, for a total of two minutes, unless local experience or practices differ as they may in cases where volunteers are used.

Fire Fighting and Related Standard Details

OSHA calls for the following operational safety measures nationally, or for OSHA-approved state plans.

Once fire fighters begin the interior attack on an interior structural fire, the atmosphere is assumed to be IDLH (immediately dangerous to life and health), and paragraph 29 CFR 1910.134(g)(4) (two-in/two-out) applies.

All personnel engaged in interior structural firefighting must wear a self-contained breathing apparatus (SCBA), work in teams of two or more, and maintain voice or visual contact (not radio). 29CFR 1910.134

Initially, at an interior structural fire, four individuals are required (minimum), two as an interior team and two outside for rapid assistance or rescue. (29 CFR 1910.134(g)(4)) (Exception is a known life-hazard situation requiring immediate action.)

The National Fire Protection Association issues standards for firefighting operations. Although NFPA standards are legally binding only in those communities which formally adopt them, they do represent national/industry standards, and are used in expert testimony to describe a "Reasonable Person Standard" and a scientifically derived "Standard of Care when a Standard of Duty exists."

NFPA Standard 1710 provisions include:

- "The number of (firefighters) shall be sufficient ... given the expected fire-fighting conditions." (5.2.2)
- "On-duty personnel ... shall be organized into company units ..." (5.2.2.2)
- "Supervisory chief officers shall be dispatched to all full alarm assignments." (5.2.2.2.3)
- "These companies shall be staffed with a minimum of four on-duty personnel." (engines and ladders) (5.2.3.1.1)
- "In (special areas)...companies shall be staffed with a minimum of five or six members." (5.2.3.1.2)

- "...provide for the arrival of an engine company within a 240 second travel time to 90 percent of incidents." (5.2.4.1.1)
- "...deploy an initial full alarm assignment within a 480-second travel time to 90 percent of the incidents." (5.2.4.2.1)
- "The initial full alarm assignment to a structure fire in a (2,000 sq. ft., two-story) single family dwelling with no basement or exposures shall provide for..... Incident Commander plus 14 personnel (minimum), with duties outlined in 8 sub-sections" (5.2.4.2.2)
- "...(response) to occupancies with hazards greater (than above) shall deploy additional resources on the initial alarm" (5.2.4.2.3)
- "... (escalating) beyond an initial full alarm assignment...upgrade to a full four person or larger Rapid Intervention Crew, plus a Safety Officer" (5.2.4.3.3. & 4.)

Pre-Hospital Emergency Medical Standard Details

NFPA Standard 1710 calls for emergency medical assistance, including automatic external defibrillator application when needed, to begin within 240 seconds travel time and, if not at the ALS level, ALS service must arrive within 480 seconds if ALS is needed.

The Standard 1710 key response times (for EMS, fire, and rescue calls) of four minutes and eight minutes do not include call handling and dispatch time at the 911/dispatch center (these are outlined in specific NFPA and other standards), nor do they include the "turn out time" at the station which is assumed nationally not to exceed 60 seconds. Rather, the four and eight minute times are defined as "road/travel/wheels turning" time from fire station ramp to the incident scene. Standard 1710 calls for those travel times to be met for a minimum of 90% of the annual incidents. Of course, there typically is additional delay at the scene for officer size-up and set-up of equipment.

Legal Considerations

Fire Departments may be subject to legally imposed sanctions, but often are judged additionally in emergency medical litigation by the "advisories" promulgated by the American Heart and Medical Associations. These advisories establish a basis for determining an accepted standard of care.

The basic research regarding emergency response time and standard of care protocols as they relate to survivability of persons suffering cardiac arrest began in the Seattle-King County, Washington area. Since the early 1990s, the still nationally used Eisenberg Model (*Annals of Emergency Medicine*, November 1993 “Predicting Survival From Out-Of-Hospital Cardiac Arrest: A Graphic Model”) serves as a basis for the “Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiac Care” which is updated periodically by the American Heart Association.

Survival rate statistics included in the research, based on arrival time of paramedics, demonstrate that the survival rate of potential survivors increases from 6.9% to 51.0% if CPR begins at five minutes, defibrillation at six, and advanced cardiac life support (ALS/paramedic) at seven minutes, rather than a longer response time producing CPR at ten minutes, defibrillation at eleven minutes, and ACLS at thirteen minutes (“Effectiveness of Fire-Based EMS”, IAFF, undated, derived from the Eisenberg Study). Five minutes faster response time and corresponding care protocols at the scene appear to produce a significant improvement in survivability.

Table 1 shows data often used in fire department/EMS performance studies. It presents a very approximate summary of both heart and severe trauma recovery percentages combined, based on available data.

Table 1. Chance of Recovery from Heart and Severe Trauma Incidents (non-breathing) Statistics from King County, Washington

Chance of Recovery	Response Times in Minutes after Breathing Stops
98.00%	1
92.00%	2
72.00%	3
50.00%	4
25.00%	5
11.00%	6
8.00%	7
5.00%	8
2.00%	9
0.05%	10

Because response time is so critical in reducing mortality from cardiac events, as early as 1992 the American Medical Association and the American Heart Association established the following industry standard for emergency response to a cardiac arrest:

For cardiac arrest, the highest hospital discharge rate has been achieved in patients in whom CPR was initiated within 4 minutes of arrest and ACLS within 8 minutes. Early bystander rescue breathing as CPR intervention and fast emergency medical services (EMS) response are therefore essential in improving survival rates and good neurological recovery rates.¹

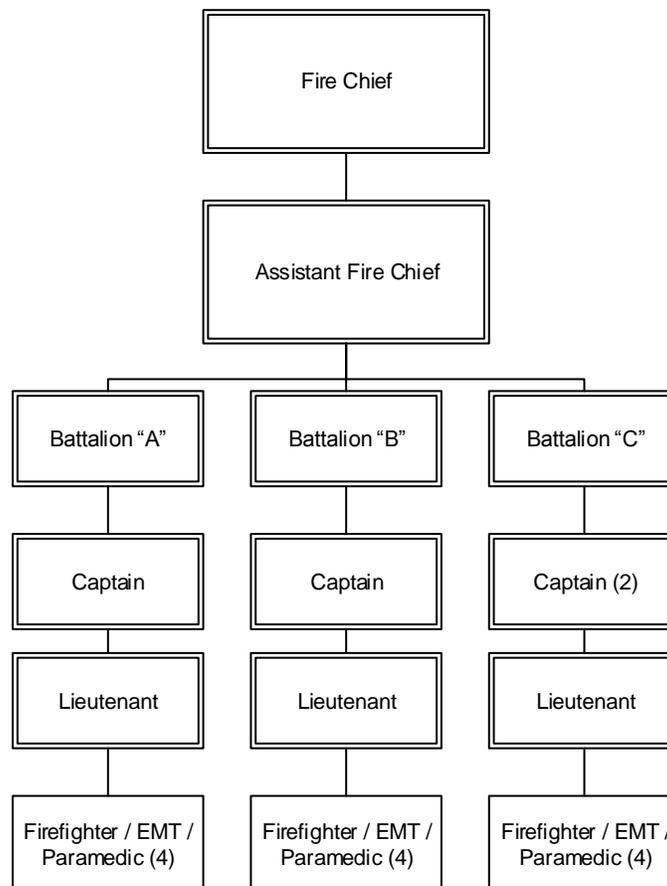
Judicial decisions often are based on such non-mandated “industry standards” or “prudent man behavior” or “standard of care” concepts.

¹The Journal of the American Medical Association; “Guideline for Cardiopulmonary Resuscitation and Emergency Cardiac Care,” Vol. 268, No. 76; October 28, 1992; p..2184).

Department Organization and Service Environment

The current organization plan for the Hamilton Township Fire Department is shown in Figure 1.

Figure 1. Hamilton Township Fire Department Organization Chart



This chart is based on the full-time career members of the Hamilton Fire Department as it is currently organized. (Volunteers and part-time positions are not shown on the chart.)

Table 2 shows the authorized positions in the Hamilton Township Fire Department for the Fiscal Year (FY) 2013/14.

Table 2. Authorized Positions in Fiscal Year 2012/13

Position Title	Authorized Number
Fire Chief	1
Assistant Fire Chief (Part-time)	1
Captain	4
Lieutenant (Part-time)	3
Firefighter (Full-time)	12
Firefighter (Part-time)	27
Total	48

The FY 2013/14 budget for the Hamilton Township Fire Department is \$3,303,720. Personnel costs, including salaries and benefits, account for \$1,478,517 or 45% of the total budget. The balance, \$1,825,203, is for contracts and other non-personnel costs. All funding for the fire department is provided by a special Fire/EMS property tax levy.

Including fire suppression and advanced life support, the Hamilton Township Fire Department describes itself on its website as offering “fire prevention and inspection services, public education, and injury prevention programs.”

Table 3 shows the staffing and apparatus for each of the two stations currently operated by the Hamilton Fire Department.

Table 3. Station Apparatus and Staffing

Station	Apparatus and Staffing
Station 76	Utility Truck, Engine, Tanker, Ambulance – 4 normal staffing, 3 minimum
Station 77	Utility Truck, Engine, Ladder, Ambulance - 4 normal staffing, 3 minimum
Reserve Equipment	Engine, Ambulance

For effective emergency response purposes, placement of fire and ambulance stations typically is calculated to provide a “running time” that allows at least 90% of that station’s annual calls to be reached within

about four minutes. That time is reasonably lengthened in some jurisdictions, if necessary, by a number of variables. These variables may include type of department, range of services offered, population density, annual call volume, EMS demand, and available budget.

Both stations 76 and 77 house a utility truck, engine, and ambulance while station 76 houses the tanker and station 77 houses the ladder. Station 76 is generally led by the on-duty Captain while a Lieutenant is in charge at station 77.

Station 76 is located in the center of Hamilton Township and station 77 is near the north border. The longer travel times to the southern portion of the township is mitigated by the extensive mutual aid agreements the Hamilton Township Fire department has with surrounding jurisdictions, including Deerfield Township, Lebanon, Salem Morrow, and Union Township, among others.

Hamilton Township Fire Department Demand Profile and Resources

Fire and EMS Demand

Table 4 summarizes the demand for fire suppression and emergency medical service responded to by the Hamilton Township Fire department from January 1, 2014 through November 20, 2014.

Table 4. Hamilton Township Fire Department Fire and Emergency Medical Service Demand January 2014 through November 2014

Incident Type	Total	Percent of Total
Fire Run	70	7%
Ambulance Run	604	62%
Hazmat	65	7%
Public Service / Assist Police / Public Information	76	8%
Good Intent Call	50	5%
False Alarms	97	10%
Severe Weather	3	0%
Other	12	1%
Total	977	100%

There were a total of 977 incidents requiring a response by the fire department during the first 11 months of 2014 – an average of 2.9 per day. As Table 4 shows, ambulance runs account for 62% of all calls or an average of 1.8 calls per day. Fire runs with an actual fire account for only 7% of total runs or an average of once every 4.8 days. Ten percent of all incidents were false alarms.

The demand data for 2014 indicate that the Fire Department is not overburdened in terms of workload.

Table 5 shows the level of mutual and automatic aid given and received by Hamilton Township.

Table 5. Mutual and Automatic Aid January 2014 through November 2014

Jurisdiction	Mutual Aid Received	Mutual Aid Given	Automatic Aid Received	Automatic Aid Given
City of Mason Fire Department	0	0	0	2
Duke/Cinergy Gas & Electric	1	0	0	0
Deerfield Township Fire and Rescue	6	6	30	32
Goshen Fire Rescue	0	3	0	1
Harlan Township Fire Department	1	0	1	10
Lebanon Fire Division	0	1	0	2
Loveland Symmes Fire Department	0	0	0	2
Miami Township Fire Department	0	0	0	1
Miami Valley Care Flight	0	1	0	0
Salem Morrow Fire Department	3	2	3	7
Turtlecreek Township Fire	2	0	0	0
Union Township Fire Department	7	3	10	8
Warren County Building Department	1	0	0	0
Total	21	16	44	65

Mutual or automatic aid was received 65 times, or once every 5.1 days, which equates to a 9% mutual aid received factor. The Hamilton Township Fire Department provided mutual or automatic aid 81 times, or once every 4.1 days, an 11% mutual aid provided factor. This indicates the Hamilton Township Fire Department provides more mutual aid than it receives but not so much to cause concern as it is understandable that

the larger jurisdictions in the region that receive more calls will also receive more mutual aid.

Fire/EMS Response Time

Table 6 shows response times (from tones to end of travel time) for fire and ambulance runs during the January 1, 2014 to November 20, 2014 time period. (Tones is an audible alarm that is sounded in the fire station alerting the station to a requirement to dispatch a unit to an emergency.)

Table 6. Fire and Ambulance Run Response Times

Incident Type	0 to 1 minute	1 to 2 minutes	2 to 3 minutes	3 to 4 minutes	4 to 5 minutes	Over 5 minutes
Fire Run	11%	24%	7%	4%	9%	44%
Ambulance Run	10%	4%	6%	10%	14%	56%

NFPA standard response time for fire runs is five minutes or less 90% of the time. (This consists of one minute from tones to “out the door” and four minutes “wheels turning time.”) The Hamilton Township Fire Department is reaching the five minute goal only 56% of the time and is over five minutes 44% of the time.

NFPA standard response time for ambulance runs is five minutes 90% of the time for first responders. (This consists of one minute from tones to “out the door” and four minutes “wheels turning time.”) Ambulances responded within five minutes only 44% of the time and are over five minutes 56% of the time.

While neither the fire nor ambulance response time experience meets industry standards it should be noted that the only industry standards established are for urban areas. Given that Hamilton Township is largely rural and agricultural/open space, it is not surprising that response times would be longer. Response time experience for Hamilton Township should also be tempered with an understanding of automatic aid.

Automatic aid operates so that when a fire call to a particular location is received a pre-established response protocol sends tones to designated fire responders irrespective of the jurisdiction of the responder. This means that it is possible, and in some cases even likely, that a fire department from another automatic aid jurisdiction may arrive at the fire scene before Hamilton Township’s fire department even though the fire is within the jurisdiction of Hamilton Township. In such a case, the arrival

time of the automatic aid responder is the crucial factor, not Hamilton Township's arrival time. For most fire call incidents, automatic aid calls to stations in a number of different jurisdictions. In rural areas, the only solution to meeting response time standards is to have more fire stations, a solution that is not affordable in most rural jurisdictions.

Automatic aid for emergency medical service is a bit different than for fire calls. An emergency medical service call will be toned at the station of the jurisdiction with the emergency unless that jurisdiction's ambulance is shown in the dispatch center as out of service. In that case, the nearest automatic aid jurisdiction's emergency medical responder is dispatched to the scene.

The leading edge practice for emergency medical service response would be to automatically dispatch the nearest responder regardless of the jurisdiction. The "nearest station" protocol is not widely practiced nationally even though it is the highest service quality level.

The obstacle to "nearest station" practice is primarily because of the uncertainty regarding equity. One jurisdiction may potentially provide more emergency medical service runs to an area within another jurisdiction, due to its proximity, than the host jurisdiction actually provides. Irrespective of the potential equity issue, some jurisdictions have entered into "nearest station" agreements with one another in order to provide the highest quality of emergency medical service within their service areas. Hamilton Township officials should initiate discussions with its automatic aid partners to design and implement "nearest station" emergency medical service. Successful implementation of this practice would have a favorable impact on emergency medical service response times in Hamilton Township as well as with other jurisdictions.

Recommendation 1. Initiate "nearest station" emergency medical service protocol discussions with partner automatic aid jurisdictions.

(Nearest station protocols are already in place for fire calls automatic aid. As noted earlier, fire scene standards require 15 personnel for appropriate staffing. Since most stations have two to six personnel at any one time a fire call response is required from three or more stations. One of the responding stations would be the "nearest station" regardless of the jurisdiction of the fire.)

Hamilton Township Future Scan

As noted earlier, the current land use in Hamilton Township is 46.3% agricultural and 8.8% is recreational/open space. With over 55% of the land use in the township being undeveloped, due diligence demands a scan of the likely future land uses in the township to determine if there is potential for significant impact on fire department operations. To execute this future scan Management Partners analyzed information from the Warren County Planning Agency to become familiar with the projected impact of growth.

Hamilton Township Population Growth

The population of Hamilton Township is increasing as it has historically. From 2000 to 2009, Township population grew 79%, or an average of 8.7% per year. Since that time the estimated annual rate of growth for the Township has slowed to 3.4% (Economic Development Handbook, 2010, p. 38). The 2010 population of the Township, as reported by the U.S. Census, was 23,556 or 11.1% of the total population of Warren County population (212,693).

There are no specific population projections available for Hamilton Township. However, there are population projections available for Warren County. Assuming that Hamilton Township's proportion of Warren County's population remains a constant of 11.1%, Table 7 indicates the population estimate for the township through the year 2040.

Table 7. Hamilton Township Population Projection

Year	Hamilton Township	Warren County
2015	24,468	220,430
2020	25,060	225,770
2025	25,667	231,230
2030	26,156	235,640
2035	26,533	239,040
2040	26,536	239,060

The projection indicates that residential population is expected to grow slowly from the current level of 24,468 to 26,536 by the year 2040 – a total increase of 8.5% over the next 25 years. This projection would indicate that there is no likely significant impact on future operations of the fire department from a demographic point of view.

Hamilton Township Land Use

Land use patterns have an impact on fire department operations. Management Partners reviewed documents dealing with future land use patterns in Hamilton Township to factor in any potential impact on fire department operations. The *Hamilton Township Economic Development Handbook, 2010* provides the most current information on land use and projected development. The handbook identifies the types of development, by percentage, existing and proposed for the Township. Table 8 shows the existing and proposed land use array for Hamilton Township.

Table 8. Hamilton Township Existing and Proposed Land Use by Percentage

Land Use Type	Existing Land Use (Percentage)	Proposed Land Use (Percentage)	Percent Change
Agricultural/Vacant	46.3%	29%	-17.3%
Commercial	0.5%	4%	3.5%
Industrial	2.4%	8%	5.6%
Multi-Family	0.2%	1%	0.8%
Public Semi Public	3.8%	6%	2.2%
Rec and Open Space	8.8%	12%	3.2%
Rural Residential	7.9%	28%	20.1%
Single Family	30.1%	12%	-18.1%
Commercial	0.5%	4%	3.5%

Growth in the Township is expected to be spurred by future development of industrial, commercial, and residential projects. Industrially zoned land along Grandin Road, west of SR48, is an area of potential redevelopment of a former manufacturing use. The land use plan indicates growth in manufacturing uses from roughly 2.4% to 8% of the total land area. Commercially zoned land totals approximately 928 acres (B-1, Neighborhood Business and B-2, General Business zoning). These districts allow for convenience goods and personal service establishments on B-1 zoned properties and personal and household services to serve areas beyond adjacent neighborhoods. Based on the Land Use Plan, the amount of land devoted to commercial use (B-1 and B-2) is anticipated to increase from 0.5 to 3.5 percent.

The area in the Township with the greatest concentration of land zoned for commercial development, the intersection of U.S. 22 and State Route 48, has adjacent land that is zoned to support multi-family and a higher density of single family than is allowed in other parts of the Township. With respect to future fire service needs it is important to note that the three largest increases in land use in the Township are increases in rural residential, industrial, and commercial uses, while single family development, as a percentage of total land use is anticipated to decline.

The implication of the proposed land use for the fire department is that daytime population is likely to increase and additional commercial and industrial occupancies will come online. This increase will result in a greater inspection workload but should be manageable with current resources. Given the location of the proposed land use, fire station location is likely to become a factor.

Rural residential is expected to grow significantly, reinforcing the future importance of implementing “nearest station” emergency medical service due to an increase in low density residential occupancy.

Analysis and Recommendations

This section of the report sets forth the analytical outcomes and recommendations based on our assessment of fire department operations and staffing. Issues covered in this section include fire station functionality and location, department command staff, purchase of services, strategic planning, overtime, emergency medical service, and minimum staffing.

Fire Station Functionality and Location

The most striking observation of our assessment of the fire department is that neither fire station is serviceable in terms of accommodating modern day apparatus or by virtue of its location within the Township.

Fire Station 76 serves as the Fire Department headquarters. It is the original fire house and is over 50 years old. The station is landlocked and the access doors are not configured to house modern day aerial trucks. Living quarters are run down and not suitable for simultaneous male and female occupancy. Office space is cramped and training facilities are out of date. This station houses a utility truck, pumper, tanker, ambulance, and staff car.

Fire Station 77 is newer than Station 76 and was located at its site based on political considerations rather than sound fire service planning factors. Station 77 has appropriate height and floor space configuration to accommodate modern fire equipment. However, it has a continuing issue with water penetration and mold formation due to faulty construction. Station 77 houses an ambulance, aerial truck, utility truck, and an engine that serves primarily as a reserve.

Normal staffing of each fire station is four personnel with a minimum staffing of three per station.

Due to the physical characteristics noted above, and as a result of the less than optimal location of Station 77, there is a significant operational imbalance between the two stations. Table 9 shows the distribution of apparatus operations between the two stations.

Table 9. 2014 Apparatus Operations by Station by Type

Operation Type	Station 76 Number of Calls	Station 76 Percent of Total Calls	Station 77 Number of Calls	Station 77 Percent of Total Calls
EMS/Rescue	1,782	75%	603	25%
Fire	118	72%	47	28%
Hazardous Condition	70	59%	51	41%
Service Call	105	84%	21	16%
Good Intent Call	148	70%	66	30%
False Call	164	62%	98	38%
Severe Weather	8	50%	8	50%
Other	25	96%	1	4%
Total	2,420	71%	895	29%

As shown in Table 9, Station 76 had around two and half times the number of apparatus operations as Station 77.

The poor station functionality, advanced age, high maintenance demands, less than optimal location, and operations imbalance between the two stations combine to suggest a strategic aim should be to have a single new station more appropriately located and designed for state-of-the-art functionality.

Recommendation 2. Develop a plan for a new fire station appropriately located and designed for state-of-the-art service. This new station would replace the two existing stations.

It is understood that Hamilton Township is not financially able to construct a single new fire station to replace the two current stations at this time. As it makes progress returning to a sound financial footing, funding for a new fire station could become more readily available. At that time, more detailed planning and analysis for location and design of a fire station can commence.

The design should accommodate at a minimum, two pumpers (one pumper in reserve); an aerial truck; two ambulances (one ambulance in reserve); a utility truck; a tanker truck; and appropriate staff vehicles for command staff.

One potential benefit of having a single station is that ambulance service may be modified. At an average of 1.8 emergency medical service runs per day, and continuing automatic aid agreements with neighboring jurisdictions, it is possible to meet service demand with a single ambulance. We would note that even with a single ambulance the minimum staffing level of six per shift should not be changed. The minimum staffing of six would provide two persons for each of a single ambulance, a pumper, and an aerial truck. When normal staffing of eight is realized, the second ambulance could be placed in service. With two ambulances in service it would be possible to use “dynamic positioning” of the second ambulance.

Dynamic positioning is a leading edge practice in emergency medical service whereby an ambulance is sited temporarily outside of its permanent housing site so as to be better positioned to respond to an emergency medical service call. Dynamic positioning must be supported by historical analysis of ambulance runs by location of call, time of day, day of week, and season of the year to develop a predictive algorithm showing the best location for the high probability sites of an ambulance service call.

In addition to developing a predictive algorithm, a robust community education program is necessary prior to implementing dynamic positioning. With this approach an ambulance will be temporarily relocated from its permanent station to another available site that is likely to be highly visible to the public while it awaits for a potential EMS call. This is likely to attract notice and may provoke questions.

To mitigate speculation and concern, extensive community outreach explaining the rationale for dynamic positioning is critical. It is important to explain that dynamic positioning is an innovative emergency medical services concept designed to optimize response time performance to medical emergencies. It is also important to note that this practice has been recommended as a result of a professional review of the Fire Department. An explanation that dynamic positioning improves service quality without increasing cost is noteworthy.

The concept of dynamic positioning should be detailed in a variety of media to reach the broadest possible cross-section of the public. The Township’s website, social media, print media, media relations, and Fire Department personal contacts with community groups are examples of outreach efforts that should be used. A well-conceived education program can imbue confidence that Township officials are diligent in employing the best practices for providing emergency medical services.

Implementing dynamic positioning would be a step in the direction of using the “nearest station” concept of emergency medical service. As mentioned above, as the rural residential population grows, “nearest station” protocols represent an improvement of quality of service with no increase in operating cost.

Recommendation 3. Implement dynamic positioning for ambulance service when two ambulances are available.

Dynamic positioning of ambulances does not need to wait for construction of a new fire station. This practice could be implemented at any time after completing the analysis necessary to develop the predictive algorithm.

Fire Department Command Staff Considerations

The fire department command staff consists of a chief, part-time assistant chief, and three captains. The position of chief is currently vacant and the Township is in the process of recruitment. The assistant chief position is funded to serve half-time. The three captain positions are all full-time career service employees of Hamilton Township. Each captain is in charge of a shift. During the course of our assessment a few issues were raised regarding department command staff on which we were asked to analyze and report.

Assistant Fire Chief

The assistant fire chief is a part-time position. The person filling the position is highly regarded within the department and impressed our team as being effective in her role. By all accounts from our interviews with department and Township staff, and our direct interactions with her, the assistant chief is a stabilizing and positive element of department operations. The assistant chief is a registered nurse who works three consecutive weeks for Hamilton Township and then three consecutive weeks on an oil platform in the Gulf of Mexico. Management Partners was asked to consider the need for an assistant chief and the appropriateness of the current deployment of that position.

We would normally not expect to see an assistant chief position in a department the size of the Hamilton Township Fire Department. Although it could not be established empirically, it appears the assistant chief position was needed to attend to the administration of the department in support of the previous fire chief. In our opinion, a fire chief with appropriate skills in the size of a department like Hamilton

Township should be able to carry out all administrative duties without the support of a part-time assistant chief.

Strategically, the Township should conduct its search for a new chief to employ someone who has demonstrated management and administrative capacity, in addition to the requisite leadership skills. We recognize that due to several factors the Township may not be in a position to employ a person with extensive demonstrated successful experience as a fire chief in another jurisdiction. This being the case, the Township would be advised to retain the current part-time assistant chief to support the newly employed chief for at least six months. This would provide a window of opportunity for the new chief to become familiar with the department and its strengths and weaknesses and judge the value added of a part-time assistant chief position. It would also give township administration time to judge the new chief and determine the importance of the part-time assistant chief position to the success of the new chief

We believe the default objective should be to eliminate the assistant fire chief position as a matter of economy and efficiency but that outcome should be implemented as a function of the results of the process described above.

Recommendation 4. Eliminate the assistant fire chief position. The timing of this action should be worked out in consultation with the new fire chief.

In our opinion, a maximum of six months should be allowed from the date the new chief takes over leadership of the department to the time the position is eliminated. It should be clearly articulated to candidates for the fire chief position that eliminating the assistant fire chief position is a given.

Fire Captains

Leadership

Fire captains are the daily leaders of the Fire Department's operating personnel. The employee survey (Attachment B) indicated a lack of confidence in command staff. Over two-thirds of department staff either disagreed or strongly disagreed with the statement, "Our command staff does a good job compared to other fire departments in the area/region." Over half (54%) of the respondents do not think the department is viewed favorably by other departments in the area or region.

Our interviews and analysis of department operations reinforce the responses in the employee survey, indicating a need for stronger leadership at the very top of the department. In most of the interviews, the assistant fire chief was identified as, “the glue that holds the department together.” However, this position is only part-time position, not the nominal leader of the department, and is not a viable alternative to the chief as the department leader. It is our view that weak or non-existent leadership from the chief’s position is a strong contributing factor to what is seen as weak leadership from daily command staff.

Effective leaders communicate a vision of what it takes to be successful, including what it means to do a good job. We refer to this definition as the “success profile,” and discuss it in more detail in the Management System section that follows.

Another tool that is helpful to strengthening leadership is development and adoption of a command staff code of behavior. A code of behavior is a tool some department use as part of a success profile. It defines and articulates expected leadership qualities and behaviors so a culture of continuous improvement is embedded in command staff. We have included a model code of behavior as Attachment C to this report. This can be a starting point for the new chief and company officers to develop a department-specific command staff code of behavior.

Recommendation 5. Develop and adopt a department command staff code of behavior.

Another element of leadership that appeared to be missing from command staff practice is a daily duties regimen. Nearly every career service fire department and many volunteer departments have an articulated schedule of duties that are performed on daily, weekly, and monthly schedules. It is the company commander’s job (captains in the Hamilton Township Fire Department) to see to the execution of these scheduled duties. It is the responsibility of the fire chief to see that there is an articulated duty schedule and to monitor the execution of those duties.

We found no evidence of an articulated schedule of duties. It may well be that each captain has an approach to a duty regimen. However, best practice is that a duty schedule be in writing so that it can be uniformly performed with documented results.

Recommendation 6. Develop and adopt a written duty schedule for department activities.

Advanced Life Support

The Hamilton Township Fire Department has developed and maintains a high service quality level for emergency medical services in that a significant percentage of its duty staff has advanced life support (ALS) certification. In fact, having such a certification is a basic qualification for employment by the fire department. However, two of the four captains do not have ALS certifications. There have been questions as to whether the two captains without ALS certification should be required to earn such certification. Management Partners was asked to consider this question in its assessment and report a recommendation to the Township.

In our research we learned that while two captains do not have ALS certification, they do have intermediate certification which allows them to perform every duty of an ALS certification holder except for the administration of a particular heart procedure and medication.

From our research we learned that in terms of assignment, fire captains rarely, if ever, ride the ambulance. This would indicate little practical benefit for a fire captain to have an ALS certification.

The Management Partners team also discussed with the Human Resources Director the process by which fire captains would gain ALS certification. The director reported that the Township would give the fire captains release time during scheduled duty hours to attend classes and pay for a replacement during the 18 month period it would take to earn the certification. In addition, the Township would pay for the direct educational fees and costs associated with certification. The Township would also pay the cost associated with replacing the captains during the time when they are released from duty for purposes of gaining their certification. Her ballpark estimate of the cost to the Township for requiring the two captains to earn ALS certification was a minimum of \$60,000 per captain.

During our interviews with the captains we learned that one of the captains has two years until retirement and that she plans to take retirement at that time.

While there is something to be said for not asking personnel you lead to do something you would not do yourself, in this case we believe the benefit of requiring these two captains to gain ALS certification is not justified by the cost.

In the case of one captain, there would be at most six months where the department would see any benefit of her certification. Due to assignment

methodology whereby captains are assigned to ride on pumpers rather than the ambulance, there is little benefit to the department of the second captain having an ALS certification. A sounder and more economical approach would be to require any future captains promoted to have achieved ALS certification. This would mean the Township would avoid \$120,000 in potential costs that could be better used for almost any other department or township purpose.

Recommendation 7. Do not require current captains to become certified in advanced life support.

Recommendation 8. Require advanced life support certification as a condition of promotion to the position of captain.

Purchase of Service

Nearing the end of our field work we were informed that labor negotiations with the union were ongoing with no projected end date. Given that the labor contract has expired and the fire chief position is vacant, this would be an ideal time for the Township to explore the option of purchasing emergency medical and fire suppression services from another jurisdiction or a combination of jurisdictions.

The fire department operating budget exceeds \$3.3 million and it is almost certain that a new fire house will be needed in the future. Fire apparatus and ambulances will require replacement in the future as well. This would be an appropriate time for the Township to explore with its automatic aid partners the cost of purchasing service from them, either singly or combined. As demonstrated earlier in Table 5, during the first 11 months of 2014 the Township received automatic/mutual aid from nine different jurisdictions a total of 65 times. These jurisdictions may find that providing service to Hamilton Township on a purchase of services basis helps to reduce their unit cost in such a way that it also becomes more economical for the Township to purchase services rather than provide them in-house.

To determine if this would be a better approach, the Township should prepare an analysis of its operating and capital improvements and equipment costs over the next ten to 15 years. The cost of a single new fire station, replacement of apparatus and ambulances, and annual operating costs over the next ten to fifteen years is likely to approach \$50 million. Aggregating total long term costs of providing the services with township assets will allow township officials to make an informed decision about

the economy of purchasing fire and emergency medical services from another jurisdiction or jurisdictions. While there would likely be complexity to purchase services, it is worth at least an in-depth analysis of the advantages and disadvantages of such an arrangement.

Recommendation 9. Investigate the cost of purchasing emergency medical and fire suppression services from another jurisdiction.

Strategic Plan

The Hamilton Township Fire Department does not have a strategic plan. Given the importance of automatic aid agreements to the Township and other jurisdictions in the region, it is vital for the Township to develop a long term strategic plan for fire and emergency medical service.

The fire department strategic planning effort should be led by Township administration with the support of fire department professional staff. The strategic plan should include a “force field analysis” that estimates the impact of changes in the regional environment that are likely to affect the Township’s fire and emergency medical service as well as the other typical elements of a strategic plan such as financial condition analysis, demographic and land use projections, and competitive analysis. Given the appropriate current reliance on the interlocking automatic aid agreements, an analysis of the forces of change in the region is crucial to a sound strategic plan for the fire department.

Recommendation 10. Develop a strategic plan for the Hamilton Township Fire Department.

As the region grows and evolves, the service environment will also morph into a different profile. This evolution will have an impact on the current service models and demand profiles in the various jurisdictions that have interlocking automatic aid agreements.

The ideal approach would be that the jurisdictions in the region would enter into a cooperative arrangement to develop a regional strategic plan. Over the next ten years, regional jurisdictions will be investing millions of dollars in facilities and equipment, as well as annual operations. Fire and emergency medical services are susceptible to economies of scale, so a regional approach to strategic planning is likely to save residents significant sums of money.

Recommendation 11. Take the lead in developing a regional strategic plan for fire and emergency medical services among regional jurisdictions.

Given that there have unfortunately been few successful models of regional strategic planning for fire and emergency medical services, focus should first be on developing a strategic plan for the Hamilton Township Fire Department as described in Recommendation 10.

Management System

Organizational structure is an important element of effective and efficient management of the Fire Department. However, if a sound structure does not have an embedded management system that facilitates operations, the outcomes will be less than optimal. This section sets forth the elements of a management system appropriate for the Hamilton Township Fire Department.

Strategic Plans

The primary services of the department should be driven by a strategic plan as discussed in more detail in the section above.

Programs and Projects

Fire department operations can be divided into two types of activities: programs and projects. Programs are the services that the department provides on a daily basis for public consumption and use. Examples of programs include emergency medical service, fire suppression, and fire prevention, among others.

Projects are specific activities designed to implement a new activity or make a physical improvement to an asset. Examples of projects include developing a duty schedule for daily, weekly and monthly operations or developing a command staff code of behavior. Projects are characterized by having a specifically stated outcome, a beginning and ending date, an identified budget, a designated manager, and timely monitoring and reporting.

Success Profiles and Program Performance Measures

The ongoing activities of the department (programs) usually consume the largest amount of resources. A requisite factor for high-performance management is an articulation of what success looks like for each

program. For example, success for emergency medical services might be “98% survivor rate for viable emergency medical services patients.”

Identifying and stating the success profile for a program allows all stakeholders to understand what the program is meant to accomplish. This is especially crucial for employees working in the program. Without a success profile it would be difficult to know when the intended outcomes have been achieved. Note that the success profile identifies how success is measured and also sets a specific performance standard.

Performance Monitoring and Reporting

Unless there is systematic monitoring and reporting of program performance and project progress, continuous improvement is left to chance. The most basic purpose for monitoring and reporting is to make adjustments to operations, resource allocation, policies, and procedures when substandard performance becomes evident.

High-performance management demands agility and timeliness in making adjustments when conditions change or when efforts do not reach their target. The most effective monitoring and reporting systems tie to the budget process. While budgets are being prepared and performance measures and standards are being agreed upon, the cycle for monitoring and reporting should also be established.

The monitoring and reporting cycle should be tailored to the success profile for the program or project. Some programs, such as the emergency medical service example cited above, might be monitored and reported on a monthly basis. For projects, the monitoring and reporting cycle should be tied to the milestones for the project.

Each program and project should have the monitoring and reporting cycle established upon approval of its resource allocation. That allocation approval usually occurs during the budget process.

Reporting on programs and projects should be formatted so it is useful for different groups of stakeholders. The Board of Trustees may receive reports on groups of programs or projects on a quarterly basis, while the Township administrator may get the same report on a monthly basis. Employees may get reports on a weekly basis about their programs while customers/external stakeholders may receive an annual report.

There is no prescription for ideal reporting frequency. An appropriate reporting cycle and format is a function of the substance and circumstance of the projects and programs. Programs and projects that

are high profile or heavily resourced may demand more frequent and in-depth reporting than those that use less resources or have a lower profile.

Annual Work Plan

After the budget is approved, an annual work plan for the department that provides detailed information regarding programs and projects for the year should be developed. For each program and project, the work plan would spell out the resources allocated, person responsible for program operations and team members, the success profile in terms of targeted performance measures and standards, actions steps and associated target dates, and monitoring and reporting cycles.

Employee/Team Performance Reviews

In addition to monitoring program performance on a scheduled basis, it is also necessary to monitor and evaluate the performance of personnel assigned to specific duties and tasks in the context of programs and projects. Performance evaluation should be heavily oriented to program/project success profiles. These evaluations should also include some elements that speak to teamwork and relationships with other Township staff.

Table 10 summarizes the elements and timing of a model management system.

Table 10. Recommended Management System

System Element	Annual Completion Target
Review and evaluate program performance data and establish continuous improvement goals	At least 30 days prior to beginning of budget process
Conduct annual strengths, weaknesses, opportunities, threats (SWOT) analysis	At least 30 days prior to beginning of budget process
Update strategic plan	At least 30 days prior to beginning of budget process
Project employee turnover and develop replacement strategy	At least 30 days prior to beginning of budget process
Develop inventory of projects to be initiated/completed in the next budget cycle	At least 30 days prior to beginning of budget process
Develop operating and capital budget requests and presentation based on above system elements	By date of budget hearing with Township Administrator
Develop annual work plan	One week following budget approval
Update program performance standards and continuous improvement goals	One week following budget approval
Update position success profiles	One week following budget approval
Communicate annual work plan and updated position success profiles to all department employees	Two weeks following budget approval
Communicate updated program performance standards and continuous improvement goals to all department employees	Two weeks following budget approval
Collect program performance data, evaluate program performance and report on outcomes to stakeholders: employees, customers, township administration, elected officials, industry peers	Continuous throughout the year on monthly, quarterly, semi-annual, annual basis
Review progress on projects/goals	As needed, throughout the year
Conduct employee/team performance reviews	At least annually
Prepare written annual report	At least 30 days prior to beginning of budget process

Establishing a management system will improve the efficiency and effectiveness of the department and support a culture of continuous improvement.

Recommendation 12. Implement a management system for the Fire Department.

Department Overtime

Our analysis of overtime for the Fire Department for the first eleven months of 2014 indicates there were 94 incidents of overtime. Overtime cost was \$54,369 for 1,911 hours worked. This computes to an average of

1.8 overtime shifts per week. With an average of 20 hours per overtime shift, the average cost was \$578 per shift. Overtime shifts were distributed among ten department personnel for an average of 9.4 overtime shifts per person with average earnings of \$5,438 per person.

Overtime is always performed by full-time Hamilton Township officers and firefighters as opposed to part-time officers and firefighters. Overtime is always incurred to meet minimum staffing of six persons per shift.

Overtime information indicates that it would not be practical or economical to hire additional full-time personnel to reduce overtime cost, as it would be necessary to hire three additional firefighters (one per shift) to significantly reduce overtime. The cost of three additional firefighters would be much higher than the current overtime cost.

There is, however, a change in practice of awarding overtime that offers an opportunity to realize significant savings for department personnel costs. Current practice is that overtime must first be offered to full-time personnel. If there is no full-time person willing to take the overtime, the shift is offered to a part-time person.

Full-time personnel are paid time and one-half for working overtime. Part-time personnel would be paid at their straight time rate since they would not work enough hours in a pay period to trigger Fair Labor Standards Act overtime thresholds. The average hourly cost of overtime in the first eleven months of 2014 was approximately \$23. The average hourly salary of part-time personnel is \$13.42. If all 1,911 hours of overtime in 2014 had been worked by part-time personnel at their average hourly rate, the cost of those hours would have been \$25,645 rather than \$54,369 – a difference of \$28,724.

If the practice were modified to minimize department costs for meeting minimum staffing requirements, part-time personnel would be given the first opportunity to work non-scheduled hours.

We are cognizant of the fact that part-time personnel are limited to working 1,500 hours per year in order for the township not to incur medical care coverage cost for that class of employee. Accordingly, we also analyzed the ability of department part-time staff to absorb the additional 1,911 hours of overtime incurred in the first eleven months of 2014 without triggering the 1,500 hour per employee threshold concern. Table 10 below shows the results of our analysis of part-time employee hours capacity.

Table 11. 2014 Part-Time Employees Hours Worked and Hours Available

	Number	Total Hours Available (1,500 hours Maximum)	Total Hours Worked	Hours Remaining Available
Part-time Officers	4	6,000	3,430	2,570
Part-time Firefighters	27	40,500	24,063	16,437
TOTAL	31	46,500	27,493	19,007

As Table 10 indicates, the 31 part-time employees of the department would have had to work 19,007 additional hours just to reach the 1,500 hours threshold per employee. In other words, the 1,911 hours of overtime worked by full-time department employees could have been covered instead by part-time employees by a factor of almost ten.

Recommendation 13. Initiate a practice of meeting minimum staffing requirements through the use of part-time personnel.

We recognize that modifying the current practice may entail negotiations with the union. If that is the case, it should be incorporated into the Township’s contract proposal. If the practice of meeting minimum staffing requirements is considered a management right and therefore non-negotiable, the Township should prepare an implementation process.

Emergency Medical Services

As indicated previously in Table 4, EMS is the single largest workload item for the department and its personnel. During the course of our interviews and analysis, we became aware of a number of practices that require attention in order to assure high quality of service is being maintained.

Review Protocols

Industry standards for emergency medical services require there be a structured review of medical services incidents to assure appropriate treatments are being administered within approved guidelines. The Fire Department has assigned a qualified staff person to review each medical run report to monitor treatment appropriateness and quality. This practice is appropriate and is being capably performed. However, it is not clearly articulated what the outcomes of the review are.

We could not discern from our interviews whether there is a systematic methodology for department captains to receive and act on the results of the reviews. Our interviews with captains left us with the impression that there is not a uniform approach to reviewing and acting on medical run reports.

Recommendation 14. Develop and implement a written policy for procedural review of medical run reports by department captains.

For most department employees, emergency medical service is the highest volume service he/she provides to the residents of Hamilton Township. Yet it is not apparent that there is a defined methodology for incorporating medical service run reports into annual individual performance reviews. To evaluate individual performance without a specific, articulated method for including that individual's quality of emergency medical service falls short of sound management practice.

Recommendation 15. Develop a policy and methodology for specifically linking individual emergency medical service performance to annual employee performance reviews.

Further, it does not appear that there is a department process for using the results of the medical run reports for either individual or group corrective action plans or training needs identification. The department's training officer, command staff, and medical report reviewer should regularly analyze and identify individual and group training needs that have surfaced by reviewing emergency medical run reports.

Recommendation 16. Use emergency medical run reports to identify individual and group training needs.

Medical Service Director

Based on our interviews, it appears the department does not have a close working relationship with the medical services director. Each emergency medical service purveyor in Ohio is required to work under the license of a practicing physician. That physician is responsible for assuring the standard of care given by the agency meets the appropriate standard of care for the area. Typically, this involves close and ongoing collaboration with the department command staff and the medical services director. Our interviews indicated that the medical services director does not make on-site visits to the department's advanced life support practitioners or the department command staff. Interactions with the director appear to

be situational and happenstance rather than planned and structured. It is also not clear what role, if any, the medical services director plays in reviewing medical run reports.

Recommendation 17. Implement a planned and structured relationship with the medical services director and assure it is being followed.

Department and township officials are advised to refer to the *EMS Medical Director Handbook* of the U.S. Fire Administration for guidance for articulating performance expectations for the medical services director. The document is available online at: http://www.usfa.fema.gov/downloads/pdf/publications/handbook_for_ems_medical_directors.pdf.

Minimum Staffing

Recently, the Fire Department has instituted a minimum staffing policy requiring six personnel to be on duty at any one time. The normal schedule assigns eight personnel to a shift but vacation and sick leave use sometimes reduce the number of persons available to six. If there are not six persons reporting for shift duty, full-time personnel are offered overtime work to meet the minimum staffing requirement.

The department has developed operating and staffing protocols that, along with automatic aid agreements, make the minimum staffing level of six a viable staffing level. When there are six personnel on duty, two personnel are assigned to the ambulance, two assigned to a pumper, and two assigned to the aerial truck. If seven or eight personnel are on duty, they are deployed situationally as additional staff on the aerial truck, the second pumper, or the second ambulance depending on the call for service.

In our opinion, six personnel is an appropriate minimum staffing standard. As we commented on earlier, this is an appropriate minimum staffing standard even when the department is able to transition to a new single station.

Employee Survey

Management Partners administered an employee survey during the course of the assessment and provided a separate report to township officials on the results. That report is included herein as Attachment B.

The survey results were used by Management Partners to inform our assessment of department operations from the point of view of the employees. The survey results are also being used by Township officials in the process of recruitment and selection of a fire chief.

Conclusion

The Hamilton Township Fire Department is in a transition period due to the resignation of the fire chief. Township officials are using this time to strategically assess department operations and develop plans for the fire department going forward. The Township is assessing all of its options, including the option of purchasing fire and emergency medical services from other jurisdictions.

Management Partners' project team interviewed Township officials and fire department command staff. The project team reviewed demand for service data for volume and quality of service indicators. Fire Department experience and practices were compared to national standards for response times. The organizational structure was examined for compartment to sound management structure. These activities resulted in this report which makes 17 recommendations for improvements to operations.

Some recommendations, such as eliminating the part-time deputy fire chief position and changing overtime policies, would result in cost savings approaching \$100,000. Other recommendations for strategic planning and regional cooperation would improve service quality while potentially saving millions of dollars.

The recommendations in this report represent a critical element for continuing to move the Township back onto a path of financial sustainability.

Attachment A – List of Recommendations

- Recommendation 1.** Initiate “nearest station” emergency medical service protocol discussions with partner automatic aid jurisdictions.
- Recommendation 2.** Develop a plan for a new fire station appropriately located and designed for state-of-the-art service.
- Recommendation 3.** Implement dynamic positioning for ambulance service when two ambulances are available.
- Recommendation 4.** Eliminate the assistant fire chief position.
- Recommendation 5.** Develop and adopt a department command staff code of behavior.
- Recommendation 6.** Develop and adopt a written duty schedule for department activities.
- Recommendation 7.** Do not require current captains to become certified in advanced life support.
- Recommendation 8.** Require advanced life support certification as a condition of promotion to the position of captain.
- Recommendation 9.** Investigate the cost of purchasing emergency medical and fire suppression services from another jurisdiction.
- Recommendation 10.** Develop a strategic plan for the Hamilton Township Fire Department.
- Recommendation 11.** Take the lead in developing a regional strategic plan for fire and emergency medical services among regional jurisdictions.
- Recommendation 12.** Implement a management system for the Fire Department.
- Recommendation 13.** Initiate a practice of meeting minimum staffing requirements through the use of part-time personnel.
- Recommendation 14.** Develop and implement a written policy for procedural review of medical run reports by department captains.
- Recommendation 15.** Develop a policy and methodology for specifically linking individual emergency medical service performance to annual employee performance reviews.
- Recommendation 16.** Use emergency medical run reports to identify individual and group training needs.
- Recommendation 17.** Implement a planned and structured relationship with the medical services director and assure it is being followed.

Attachment B – Employee Survey Results

To: Gary Boeres, Township Administrator

From: Wayne Chapman, Partner
Jacquelyn McCray, Senior Manager

Subject: Fire Department Survey Results

Date: January 19, 2015

Introduction

In conjunction with the organization review of the Fire Department, Management Partners developed and distributed a survey to all employees. The survey addressed key issues and concerns that emerged from interviews with Fire Department leaders and offered full- and part-time employees an opportunity to weigh-in anonymously about organizational issues and opportunities for improvement.

An electronic survey link allowed employees of the department to complete the survey at their convenience from November 24 to December 8, 2014. In total 26 employees participated in the survey. It covered customer service and public perception; department leadership; department operations; employee safety; staffing and employee support; skills and training; technology, facilities and equipment; teamwork and communication; and ideas for improvement.

Survey Respondent Profile

More part-time employees (63.6 %) than full-time employees responded. The majority were classified as firefighters/EMTs and paramedics (77.3%) (see Table 1). As Table 2 shows, slightly over one-third of respondents (36.4%) have been employed with the department between six and ten years.

Table 12. Position and Employment Status of Respondents

Position and Employment Status	Response Percent	Response Count
Firefighter/EMT/paramedic	77.3%	17
Uniformed line position (e.g., lieutenant, captain, battalion chief)	4.5%	1
Uniformed staff position	18.2%	4
Civilian	0.0%	0
Full-time	36.4%	8

Position and Employment Status	Response Percent	Response Count
Part-time	63.6%	14
Other (please specify)	2	2
Total respondents		22
Total skipped		4

Table 13. Years Respondents Employed with Fire Department

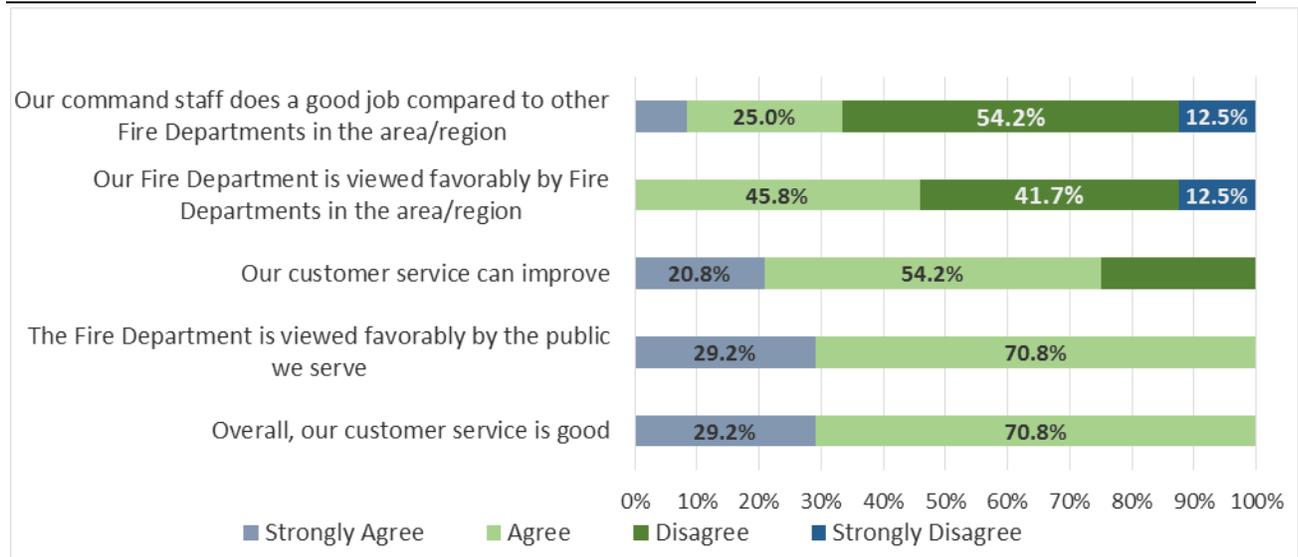
Years Employed with Fire Department	Response Percent	Response Count
Less than 1 year	9.1%	2
1 to 5 years	18.2%	4
6 to 10 years	36.4%	8
11 to 15 years	27.3%	6
16 to 20 years	9.1%	2
21 to 25 years	0.0%	0
26 to 30 years	0.0%	0
Over 30 years	0.0%	0
Total respondents		22
Total skipped		4

Customer Service and Public Perception

Using five statements, survey respondents were asked to indicate their level of agreement about issues of customer service and public perception as summarized below and shown in Figure 1.

- Most respondents strongly disagreed or disagreed (66.7% combined) that Fire Department command staff do a good job compared with other departments in the area or region.
- Most respondents (54.2%) do not think that the Fire Department is viewed favorably by other departments in the area or region.
- There was overwhelming agreement among respondents (75%) that customer service by the department can improve.
- All respondents agreed that the public views the department favorably.
- All respondents agreed that customer service is good, even though 75% indicated there is room for improvement. Based on responses, there is a desire to maintain and increase service levels that are already thought to be good. Fire Department and Township leaders should survey property owners and stakeholders in the service area to validate this perception from the customers.

Figure 2. Customer Service and Public Perception



Department Leadership

Respondents were asked to indicate the leadership qualities and short- and long-term priorities the next fire chief should address. Additionally, respondents were asked if the next fire chief should be hired from outside the organization and have paramedic certification.

- There were a total of 33 separate qualities and/or characteristics provided by respondents. In the aggregate, 39.4% of the comments referenced the need for a chief with strong communication skills, while 12% want a chief who is honest.
- Suggested *short-term priorities* for the next chief should include:
 - Staffing (58.1%), and
 - Improving morale (14%)

Comments about staffing indicated the need for more staff, and many respondents simply responded with the word “staffing.” Further analysis is required to determine what about staffing is needed and desired by the employees.

- Suggested *long-term priorities* for the next chief include:
 - Addressing staffing issues (42.2%), such as succession planning, and the need for more full-time employees.
 - There were also several comments expressing the need for a new fire station (17.8%).
- Nearly all of the respondents (91%) indicated that the new chief should be hired from outside the department.
- A majority of respondents (68.2%) also think the next fire chief should maintain paramedic certification.

Department Operations

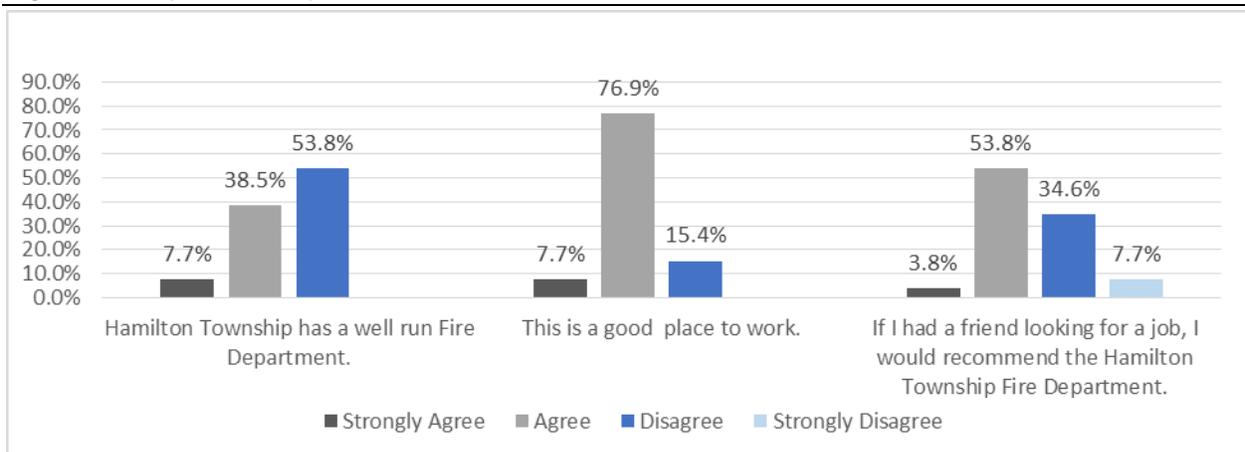
In this section of the survey respondents were asked to think about what the department does well and indicate a level of agreement with statements pertaining to the overall operations of the department.

In the aggregate, response to the question, “What does the Hamilton Township Fire Department do well?” included comments related to three themes:

- Provide fire and EMS service (34%)
- Fire and EMS training (17%)
- Teamwork (8.5%)

Respondents also indicated their level of agreement with three questions about department operations. As shown in Figure 2 slightly over half of the respondents (53.8%) do not agree that the department is run well. Even though respondents indicated disagreement with the statement, “Hamilton Township has a well-run Fire Department”, an overwhelming majority (84.6%) agreed that the Fire Department is a good place to work. Similarly, a majority of respondents (57.6%) would recommend the Fire Department to a friend looking for a job.

Figure 3. Department Operations



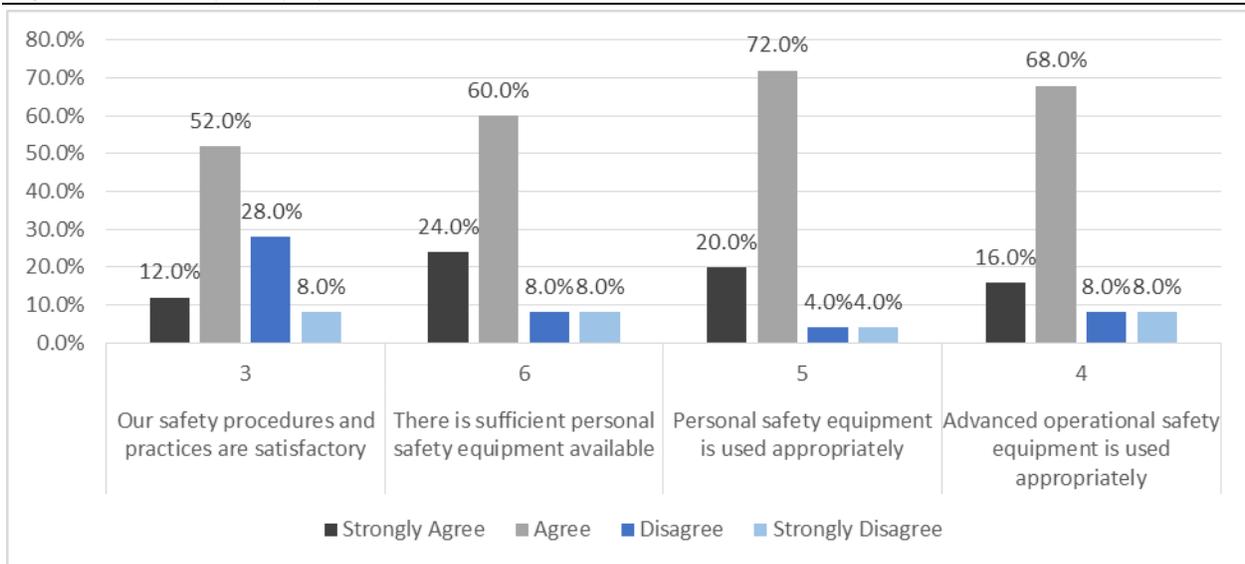
Employee Safety

Figure 3 includes survey responses related to questions about employee safety. The majority of respondents indicated agreement with each statement included the category:

- Our safety procedures and practices are satisfactory (64% strongly agree and agree)
- There is sufficient personal safety equipment available (84% strongly agree and agree)
- Personal safety equipment is used appropriately (92% strongly agree and agree)

- Advanced operational safety equipment is used appropriately (84% strongly agree and agree)

Figure 4. Employee Safety

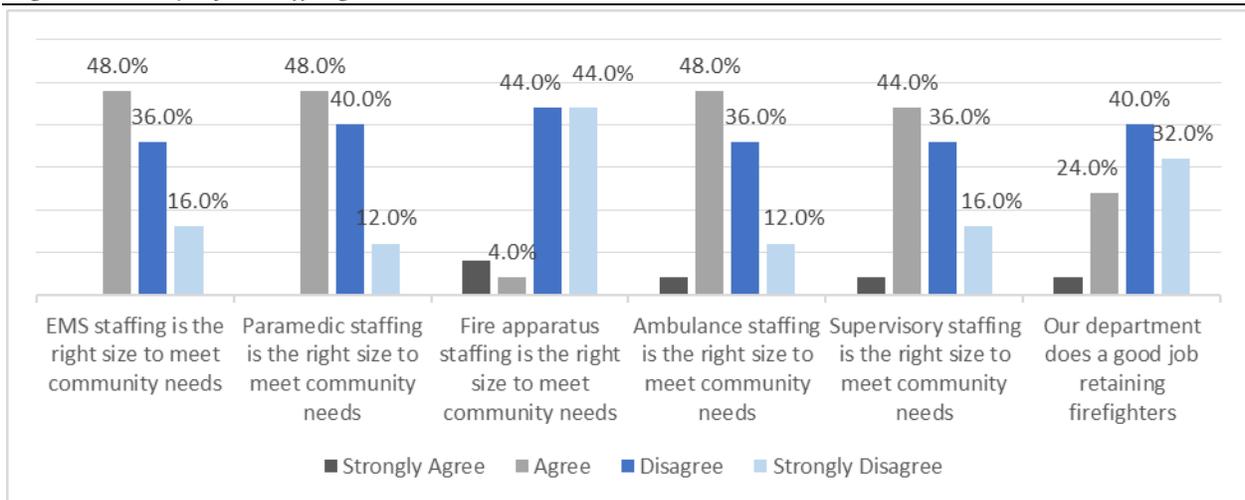


Staffing and Employee Support

The survey included six questions about Fire Department staffing and retention and seven questions about promotional opportunities, employee morale, and performance. Figure 4 addresses staffing and retention while Figure 5 includes data about promotional opportunities, morale and performance.

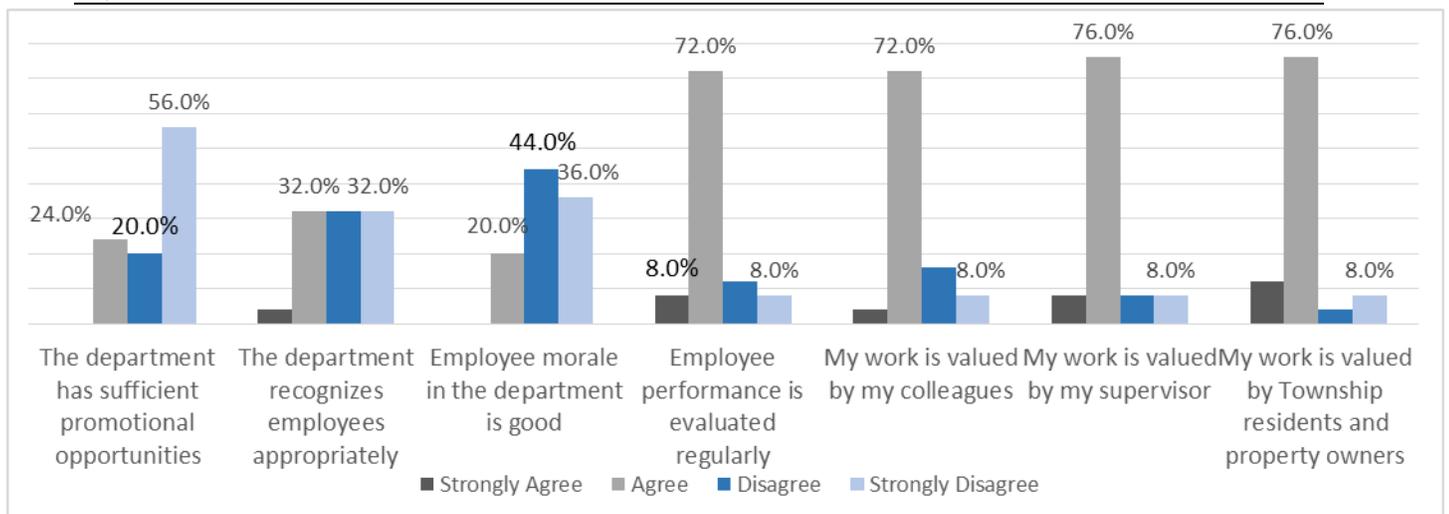
Overall, there respondents did not agree that staffing (for EMS, paramedics, fire apparatus, and supervisory staffing) is the right size to meet the needs of the community. The only area of respondent agreement was for the statement about ambulance staffing, with 52% either agreeing or strongly agreeing that ambulance staffing is the right size to meet community needs.

Figure 5. Employee Staffing and Retention



About three-quarters of the survey respondents (76%) disagreed or strongly disagreed that the department has sufficient promotional opportunities, that employees are appropriately recognized (64%) and that morale within the department is good (80%). However, respondents indicated high levels of agreement with statements about the regularity of employee performance evaluations and feel that the work of fire employees is valued (80%, respectively).

Figure 6. Employee Performance, Morale and Support



Skills and Training

Survey respondents agreed with five statements about opportunities for employee training and performance, as shown in Figure 6. Two areas received the highest levels of agreement: employees have the technical skills to do their jobs (80%), and the quality of firefighter training is sufficient (76%).

Figure 7. Employee Training and Skills

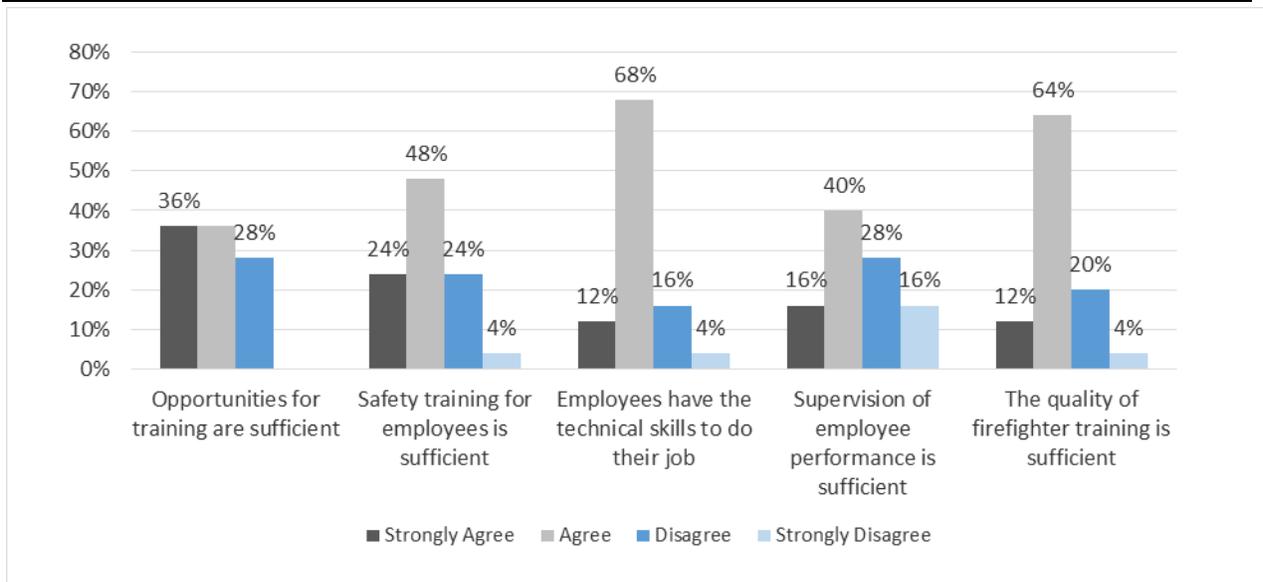


Table 3 indicates that over half of the respondents (56%) disagreed and strongly disagreed with the statement that a paramedic certificate should be mandatory for incumbent captains, however they strongly agreed and agreed (68%) that future promotions to the captain rank should require paramedic certification.

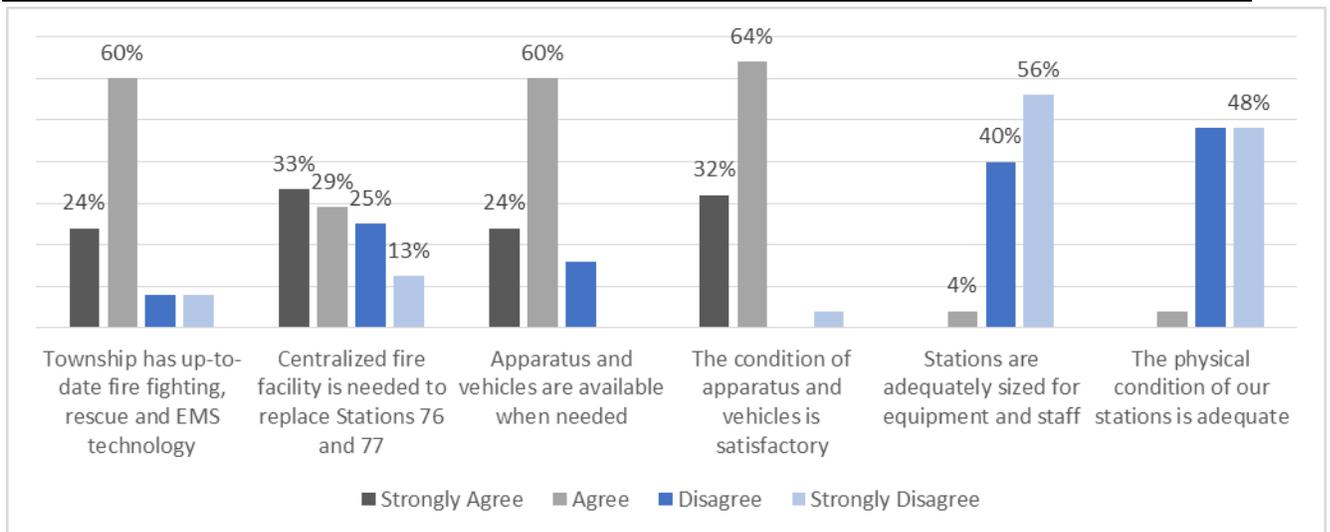
Table 14. Captains and Paramedic Certification

	Strongly Agree	Agree	Disagree	Strongly Disagree
A paramedic certificate should be mandatory for incumbent captains	28.0%	16.0%	20.0%	36.0%
Future promotions or hires to the captain rank should require a paramedic certificate	48.0%	28.0%	8.0%	16.0%

Technology, Equipment and Facilities

Figure 7 illustrates the survey responses pertaining to technology, equipment and facilities. There was overall agreement by respondents that technology and equipment is up-to-date, is available when needed and in satisfactory condition. With respect to the department fire stations and facilities, survey respondents also agreed that a centralized fire facility is needed to replace the two existing stations.

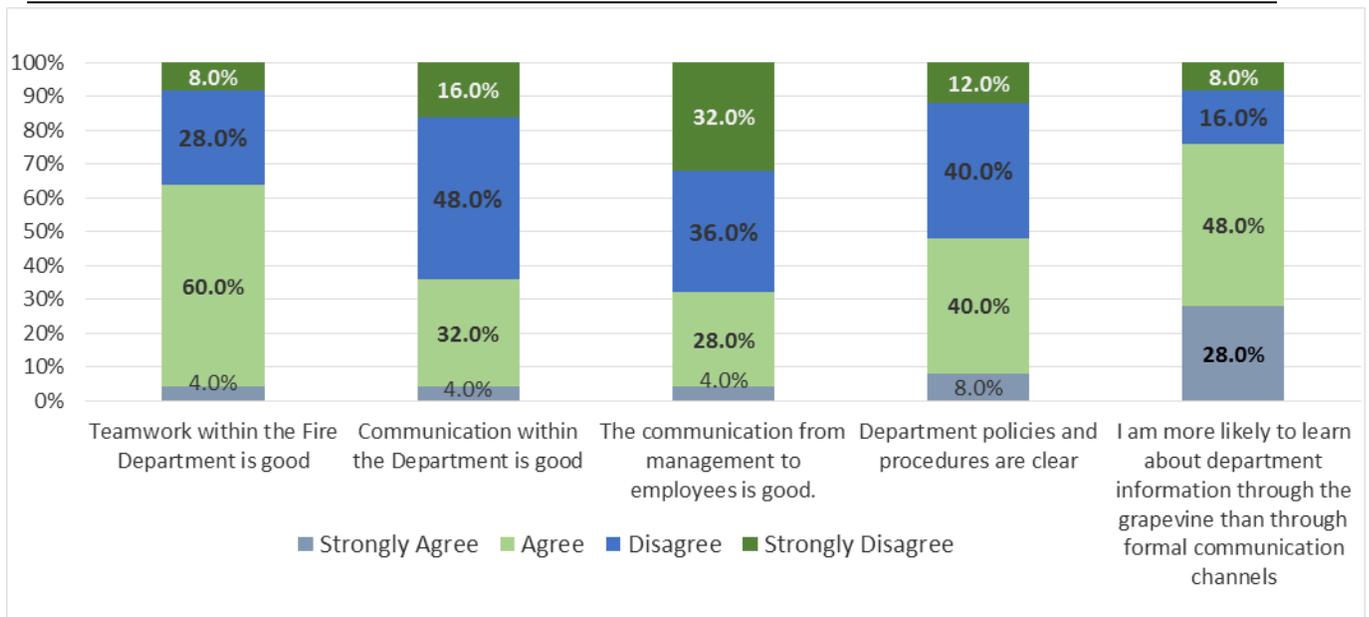
Figure 8. Technology, Equipment and Facilities



Teamwork and Communication

Almost two-thirds of survey respondents (64%) agreed that teamwork within the Fire Department is good. Fewer (36%) agreed that communication is good or that policies and procedures (48%) are clear. Figure 8 summarizes the survey responses for each question in this section.

Figure 9. Teamwork and Communication



Ideas for Improvement

Lastly, survey respondents were asked to provide thoughts and suggestions about ideas for improvement. In response to the question, “What are the two greatest opportunities for improving service delivery to the public?” participants indicated increased staffing and public outreach and education. In response to the question, “What should the Fire Department do to improve?” respondents indicated that the department should address issues of staffing.

No theme emerged from responses to the last survey question: Are there specific innovations that would improve Fire Department functions and service levels? The responses to this question are varied and are listed below.

- Quality staffing
- Trench rescue tools
- Remove mold from out dated fire stations that are too small for what we need
- More paramedics
- Loyalty to the employees that work and fire the ones that don't - accountability from the top down
- Regular training to bring staff up to the newest and highest level of training possible
- More support from our Trustees

Attachment C – Sample Command Staff Code of Behavior

COMMAND STAFF CODE OF BEHAVIOR

The Hamilton Township Fire Department Command Staff adopts the following principles to lead and manage the personnel of the department. These principles are drawn from management techniques used by Captain Michael Abrashoff of the USS Benfold, the “best damn ship in the Navy,” as articulated in the book *It's Your Ship*.

- Take Command
 - See the department through the eyes of the “crew”
 - Empower the “crew” to fix what’s wrong
 - Focus on performance and readiness
- Lead by Example
 - Articulate goals clearly
 - Provide sufficient time, training and resources to excel
 - Strive for continuous personal improvement
- Listen Aggressively
 - Create a climate of asking
 - Create a climate of suggesting
 - Find round people for round holes
- Communicate Purpose and Meaning
 - Create a climate of “we can do anything”
 - Convey information
 - Strive for continuous organizational improvement
- Create a Climate of Trust
 - Treat everyone with dignity and respect
 - Be relentlessly positive
 - Don’t shoot the messenger
- Look for Results, Not Salutes
 - Use after-action reviews
 - Be open to criticism
 - Praise result producing performance
 - Innovation knows no rank
- Take Calculated Risks
 - Tolerate mistakes
 - Don’t make the same mistake twice
 - If a rule does not make sense, change it
- Go Beyond Standard Procedure
 - Conformity is not competence

- Push the envelope for innovation
 - Don't work harder, work smarter
- Build Up Your People
 - Be attentive to people's feelings and potential
 - Expect the best, you will get it
 - Counsel continuously and honestly
 - Discipline strictly but fairly
- Generate Unity
 - Rule #1 – We are all in this together
 - Focus on likenesses and common goals
 - Maximize uniqueness and channel that to common goals
- Improve Your People's Quality of Life
 - In heavy times, lighten up
 - Fun with friends makes for happy people
 - Good play = Good work