

**Caught in Transition:**

**Ross Township Fire Department's Need for Volunteers to Support On-Duty Crews**

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A proposed research project submitted to the Ohio Fire Executive Program

02 August 2013

## CERTIFICATION STATEMENT

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## ABSTRACT

This research project analyzed the Ross Township Fire Department's need for volunteer personnel to support paid crews in a combination system. Ross Township Fire Department utilizes a combination paid and volunteer system with a career chief, part-time firefighter/paramedics, and volunteer fire/EMS personnel. Because the paid staffing is minimal, the department relies on volunteers as part of the primary response for calls requiring multiple units. Like many departments nationwide that rely on volunteers, the department is struggling to recruit and retain volunteers that are capable of making emergency calls at any given time.

This research project used an evaluative method to answer three questions. The research questions asked were (a.) How is the lack of volunteer support affecting emergency responses and their outcomes? (b.) Why the need for volunteers to support on-duty crews? Why not just increase staffing levels? (c.) What can the department do to recruit and retain volunteers if deemed necessary? Emergency details were reviewed and found that there needs to be more personnel on calls. This includes EMS details on weeknights that only have two EMT/Paramedics responding. Department finances were reviewed, and it was found that the department has lost funding over the last two years. This is due to a decrease in state funding, and lower property values. Any future increase in funding may only be able to maintain current staffing levels. Other combination departments were surveyed to see how Ross Township can better recruit and retain volunteers. The department will look to improve both areas to better ensure that there are enough qualified personnel on scenes.

The Ross Township Fire Department is in a crucial point of its growth as a paid department. The department will need to increase part-time paid staffing so it does not have to rely on volunteers for a primary response. The department should still work to recruit and retain

volunteer members for a strong secondary response. Because Ross Township relies on neighboring volunteer departments for mutual aid, it would be in the best interest of the residents to have a solid volunteer reserve to handle secondary calls. In the end, the safety of the residents as well as the department personnel relies on enough properly trained personnel responding to the scene.

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## INTRODUCTION

The Ross Township Fire Department is a combination department providing fire, rescue, and emergency medical services (EMS) for Ross Township and the Village of Millville in southwest Ohio. Ross Township is primarily a rural community with rolling farm land that has seen an increase in residential growth and new development throughout the township. As the landscape of the township has evolved, the department has evolved as well. In a five year period the fire department transitioned from a volunteer department, to a paid, combination department with twenty-four hour staffing.

### **Statement of the Problem**

The Ross Township Fire Department is caught in a crucial point of its development as a paid combination department. There are fewer volunteer firefighters responding to support the on-duty paid personnel. Staffing is minimal, so the department still relies on the volunteer members to support on-duty crews for a variety of fire and medical emergencies. Throughout the last decade the Ross Township Fire Department transitioned from an all-volunteer department to a paid combination department. The department currently has a career chief and is staffed around the clock with part-time personnel. There are eighteen volunteers remaining on the department that respond to a variety of fire and EMS details. They also participate in department trainings and public education details.

There are fewer personnel on scene to handle various emergencies. Development throughout the township has slowed, and any future fire levy will likely only maintain current staffing levels. Due to the recent local funding cuts by the State of Ohio, Ross Township has seen a 55% reduction in state funding. Because the department partially operates out of the

Township General Fund, it is facing a possible cut in funding as well. Currently 21% of the fire department revenue comes from the General Fund. Trying to secure additional funding to offset this cut, as well as funds for additional paid personnel would seem like the best answer. But that solution isn't very feasible at this time.

The Ross Township Police Department placed a 1.5 mill levy increase on the ballot in May of 2012. That levy was defeated by 74% of the residents that voted. Public perception of the individual departments and their needs may vary by the community. But this overwhelming defeat reflects the difficulty faced in trying to pass a levy increase in the near future. Even if the fire department were to reach its strategic goal of staffing five personnel, certain emergency responses would still lack sufficient personnel.

Neighboring departments to the north and west of the township are volunteer, creating long response times for mutual aid requests. Career departments to the east and south of the township are facing their own staffing difficulties. Therefore, *the problem this study will address is to see how the department can better retain and incorporate volunteer members into the responses with the paid personnel on shift.* That way the department can better assure an expedited secondary response, especially with minimal staffing on duty providing the initial response.

### **Purpose of the Study**

*The purpose of this study is to determine the overall necessity of volunteer personnel to support on-duty staffing.* This evaluative study will identify areas of deficiency in services to the community, more specifically emergency responses. Once these areas have been identified, the research found will be used to see how the department can better incorporate its volunteer membership to support paid personnel in these deficient areas of response.

## **Research Questions**

*The research questions this study will investigate are:*

1. How is the lack of volunteer support affecting emergency responses and their outcomes?
2. Why the need for volunteers to support on duty crews? Why not just increase staffing levels?
3. What can the department do to recruit and retain volunteers if deemed necessary?

## **BACKGROUND AND SIGNIFICANCE**

The Ross Township Fire Department is a combination department consisting of one career chief, part-time fire fighters and paramedics, and volunteer fire and EMS personnel. The department serves over nine thousand residents in a thirty-six square mile response area. This response area covers Ross Township, as well as the village of Millville located in the northern end of the township. The department responds to approximately 1,000 emergency calls each year. Ross Township had a 29.6 % increase in population from the years 2000 to 2010 (2010 U.S. Census, Ohio Department of Development). This was the third highest out of all townships in Butler County. Because of this growth, Ross Township was labeled the “new frontier” of Butler County (Hamilton Journal News, 2005). Therefore township administration looked to improve its public safety departments in response to the continued development throughout the community.

The department is where it is today as a result of a merger between the Ross Township Fire Department, Ross Township Life Squad, and the Millville Fire Department in 2005. All three departments were volunteer organizations and provided emergency services to Ross Township and the village of Millville. Half of the village of Millville’s incorporated area resides in Ross Township. During the process of merging all three organizations, Ross Township administration was also looking to staff an ambulance during daytime hours with part-time personnel. Like many volunteer departments in the area, Ross Township Life Squad was struggling to find volunteer members available during daytime hours throughout the week.

In 2004 the Ross Township Life Squad began staffing three personnel on a paramedic ambulance from the hours of 6 a.m. to 6 p.m. These personnel were hired as part-time employees from the volunteer ranks of all three departments. Part-time employees in Ross

Township are paid hourly. After the merger, Ross Township Trustees hired a full-time fire chief. Ross Township also opened a new fire station the same year as the merger in the northern end of the township. This station replaced an existing station occupied by the Millville Fire Department. Once the new station was in service the department would staff both with two part-time personnel at each station.

The next step for the Ross Township Fire Department was to provide around the clock staffing on weekends and holidays. This was due to a lack of volunteer response on weekend nights and holidays. By this time the number of volunteer personnel had started to show a steady decline. In the three years that the department transitioned from all volunteer to this point of a combination system, several volunteers had left the department.

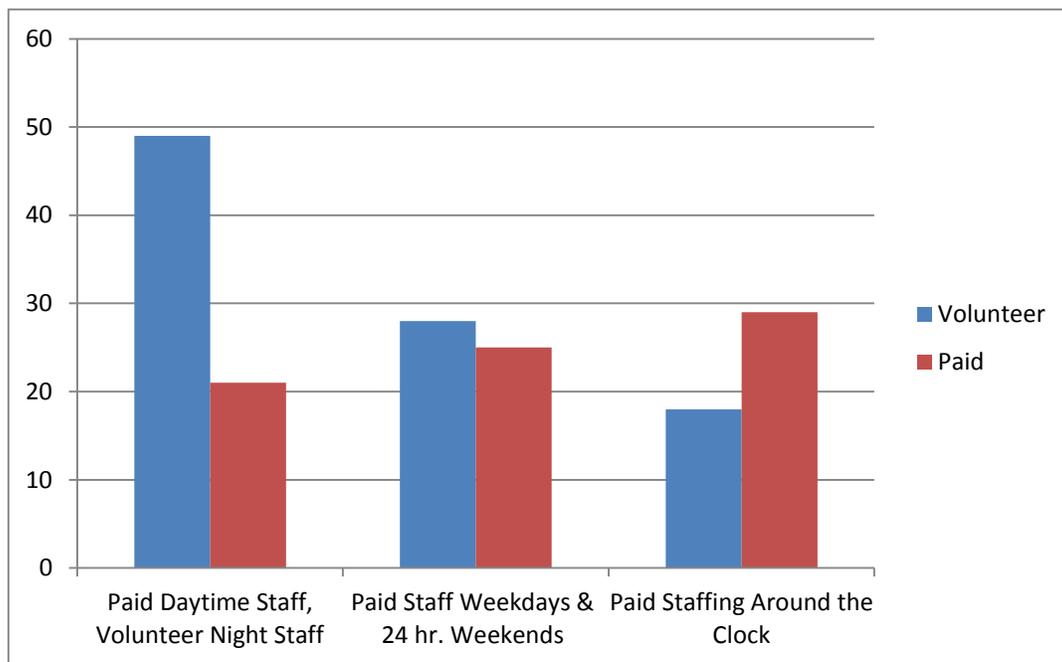
As the department continued to add paid personnel to staff the stations, naturally the opportunities for volunteers to make runs continued to decline. Therefore, more volunteers began to lose interest in staying active with the department runs, activities, and even training. Additionally, individuals that used to volunteer and now worked part-time weren't coming around as often for volunteer calls. While this is the natural progression of a department growing, there was still the need for volunteers to respond to calls. Volunteer members were still needed on weeknights as well as larger details during the day to support the on-duty crews.

The following figure (Table 1) shows the reduction of the volunteer force throughout the years. It starts with 2005, the year of the department merger and a year after going part-time during the day. It shows a continuous trend of declining volunteer numbers as the department has transitioned paid staffing hours.

**Table 1: Personnel Totals and Breakdown**

Year	Paid	Volunteer	Total
2005	21	49	70
2007	22	32	54
2009	25	28	53
2011	29	22	51
2012	29	18	47

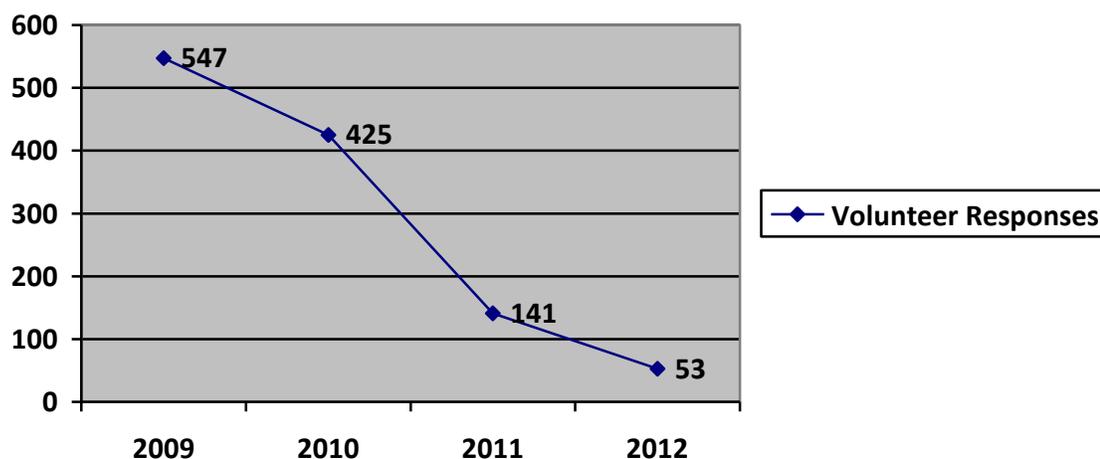
The graph below (Figure 1) better demonstrates the reduction of the volunteer staff coinciding with the increase of coverage by paid staffing.

**Figure 1: Personnel Breakdown During Staffing Transition**

In October, 2010 the Ross Township Fire Department was awarded a Staffing for Adequate Fire & Emergency Response (SAFER) grant from the Federal Emergency Management Agency (FEMA). The purpose of this grant was to begin twenty-four hour staffing. Volunteer membership and responses had continued to decline as the department was transitioning. Additional funding was not available to implement the additional staffing levels needed. With SAFER funding secured, the department decided to staff two part-time personnel on weeknights at the busier station in the township. The department now had paid staffing twenty-four hours a day, seven days a week.

The same time that the opportunity for volunteers to make emergency details declined due to twenty-four hour staffing, training demands continued to increase. Understanding the importance of continuing education, the State of Ohio implemented continuing education requirements for firefighters similar to those of an EMT. The Ross Township Fire Department strongly supports training and continuing education requirements. The department and community want trained and accountable personnel in the units. But it was evident that some of the volunteers did not have the time to meet the training requirements. This resulted in some volunteers leaving or being dismissed from the department. People today do not have the time free to volunteer due to family and work. This holds especially true to meet the demands to volunteer for a fire department. With all these contributing factors, the department had seen a significant drop in volunteer responses.

The following figure (Figure 2) shows the total number of times volunteer personnel responded to assist on-duty personnel. The yearly figure counts the number of volunteer personnel per run, and adds the runs together for the total number of responses. This number does not account for paid personnel coming in during larger events, similar to a re-call situation.



**Figure 2: Volunteer Member Responses by Year**

Even though there is staffing around the clock, there is a need for volunteers to respond and support these crews in various emergencies. Mutual aid box alarms were implemented in 2010. This is where neighboring fire companies are dispatched along with responding Ross Township Fire Department units. These alarm assignments were implemented to ensure that there is a minimum of 15 firefighters and essential command personnel on scene for a reported structure fire.

Some of these mutual aid departments are paid, while others are volunteer departments. The paid departments function under different dispatch centers than Ross Township Fire Department does. Therefore response times from mutual aid companies vary greatly. As for mutual aid squad requests, times are often very lengthy for a mutual aid request. Neighboring career EMS units are already very busy, and neighboring volunteer departments are struggling to find volunteers as well. The following figure (Table 2) shows neighboring departments and their status as well as distances from the center of Ross Township.

**Table 2: Mutual Aid EMS Units.**

<b>Unit</b>	<b>Distance</b>	<b>Time</b>	<b>Type</b>	<b>Notes</b>
Medic 22	5.7 mi.	12 min.	Career	Only 3 squads in city for 11,000+ runs
Squad 181	6.0 mi.	12 min.	Volunteer	Add 5 minutes to response time (AVG)
Medic 24	7.4 mi.	11 min.	Career	Only 3 squads in city for 11,000+ runs
Medic 31	8.3 mi.	14 min.	Career	
Squad 28	9.1 mi.	15 min.	Career	
Squad 141	9.2 mi.	13 min.	Combination Paid/Volunteer	Paid personnel daytime hours 6a-6p PM-add 5 min. to response time (AVG)
Medic 25	9.3 mi.	14 min.	Career	Potential staffing reductions

*\*Times and distances estimated to 2449 Ross-Millville Rd. via Google Maps (central location).*

(AVG)= Average

Reviewing the mutual aid resource list above (Table 2), it would be beneficial for the Ross Township Fire Department to try and find a solution within the department. This reduces the need to have to rely on mutual aid as often. In 2012, Ross Township Fire Department requested a mutual aid squad 18 times due to no personnel available to make a backup EMS detail. This not only can have a negative effect on patient care and outcome, but can be seen as lost revenue to the department. The potential revenue missed for these details in 2012 was up to \$15,300. Typically these EMS calls came out during weeknight hours when there were only two personnel on duty.

The potential EMS revenue lost is relatively low, but that number has the potential to be much greater. But the ultimate concern for the department is the safety of its residents and

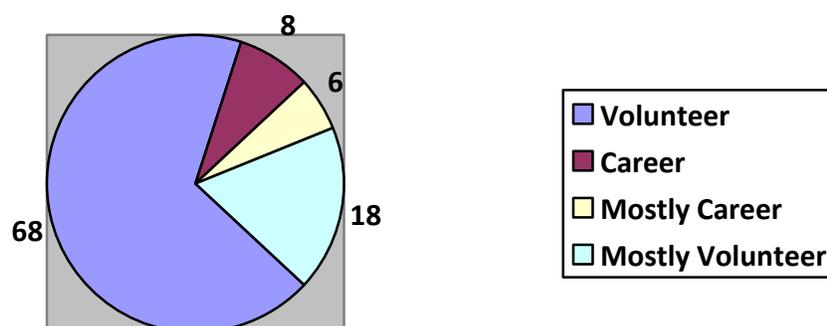
department personnel. Therefore, *the potential impact this study could have on the Ross Township Fire Department is to identify the need to strengthen the volunteer membership, for adequate and cost effective operations with current staffing levels. Or to find that pursuing new volunteers will not be necessary due to current or possible future increased staffing levels, as identified in the department's Strategic Plan.*

## LITERATURE REVIEW

### *Combination Departments*

Fred Windisch and Gary Scott contributed to the *IAFC Chief Fire Officer's Desk Reference* (2005), writing a chapter regarding volunteer and combination departments. They wrote "regardless of the growing number of combination departments, you'll be a pioneer because there is no model." Essentially the needs of your department will vary from others that are considering transition to a combination department. Typically when a volunteer department makes the decision to pay personnel it is due to a lack of response during particular hours. With the demands increasing for volunteers who also work full-time during the week, departments tend to struggle with volunteer responses during the daytime on weekdays. So these departments take the first step to a paid system by staffing a squad during the days where there were deficient responses. Therefore, it is crucial to identify departments that are in a situation that is closest to yours to gather information on statistics and operations.

Since 1983, the National Fire Protection Association (NFPA) maintains a United States Fire Department Profile. The NFPA keeps track of the number of fire departments overall, and then categorizes them. From 2000 to 2010 the number of career firefighters increased from 286,800 to 335,150. That's an increase of nearly 15%. However the total number of volunteer firefighters was 768,150. The volunteer force accounts for 70% of the firefighters in the United States. As of 2010 a total of 23.7% of departments were considered a combination of either mostly career or mostly volunteer. These departments protect 24% of the United States population. In the state of Ohio the number of these types of combination departments is 26.8% (United States Fire Administration). This reflects the national trend of smaller departments and communities such as Ross Township transitioning into a combination system.



**Figure 3: U.S. Fire Department Profile-2010** *Source: NFPA*

Combination departments across the nation continue to struggle with recruiting and retaining volunteers. The U.S. Fire Administration's *Retention and Recruitment for the Volunteer Emergency Services* (2007) cites many sociological changes throughout the years effecting volunteer departments. People moving from urban to rural areas are less likely to volunteer for their community. A majority of families are now considered two-income households. Then there are also other ties to less time in volunteering with children activities, as well as generational differences. There are four characteristics of a combination or volunteer department that are essential to retaining members. The department must meet individual needs. The department must provide its membership with awards and recognition. The department must provide adequate leadership and supervision. And the department must challenge members.

According to the National Volunteer Fire Council, volunteer firefighters typically cost a community \$25 per capita. This is significantly lower than the average of \$155 per capita for a

career person. The Ross Township Fire Department pays volunteer personnel per run. They are paid \$12 for a typical one hour detail such as an EMS call or motor vehicle accident. For details that are several hours in duration, volunteers are compensated for those additional hours. Pay varies for part-time personnel starting at \$11 per hour to \$16 per hour. While these figures will vary with each community, it shows the overall cost savings to a community with volunteers. The same concept can be applied when operating a combination department of full-time and part-time employees, comparing wages, pension, and overall benefits. This is another reason that communities are using combination departments, utilizing various staffing models with full-time, part-time, and volunteer personnel.

The National Volunteer Fire Council (NVFC) has put an emphasis on recruitment and retention of volunteer fire personnel. There are several resources that the NVFC has published either in textbooks or on the internet. The NVFC partnered with the United States Fire Administration (USFA) to revise and publish *Retention and Recruitment for the Volunteer Emergency Services* (2007). For retention of volunteers, the publication addresses a wide range of topics including leadership, motivation, training, emotional support, demands, and rewards. The NVFC and USFA also created the Fire Corps Program. This program is designed to create pathways and build resources for community member involvement in non-emergency activities where there is a shortage of volunteer personnel.

Chief Joe Maruca of the West Barnstable Fire Department wrote *Leading a Combination Fire Department* (2009), discussing the advantages and disadvantages of the combination paid/volunteer fire department. He states that the combination department is attractive to smaller communities for a variety of reasons, especially the cost-effectiveness of the system. This reiterates the second question of this research project, how much Ross Township is saving by

operating a combination paid/volunteer fire department. Chief Maruca describes how you can have a quick initial response by the first companies which are staffed, backed up with a well-staffed secondary response from a volunteer or paid on-call force. The secondary response is where the Ross Township Fire Department has seen a decline over the years.

Sustaining a combination system can be very challenging. It is vital that combination departments perform a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis on a determined annual basis to assure they are providing the best services possible. The department continually adapts to the needs of the department. This is usually the result of an increase in service demands. This could be variances such as an increase in population or an aging population that results in an increase in emergency calls. Or it could be a continued decline in volunteer responses, affecting the outcome of emergency details. The best way to keep a combination department in sync and working well together is to make sure everyone is treated equally. This includes an understanding of job descriptions, policies, expectations, and maintaining open communication between the different ranks. (The Red Ribbon Report: Leading the Transition in Volunteer and Combination Fire Departments, IAFC)

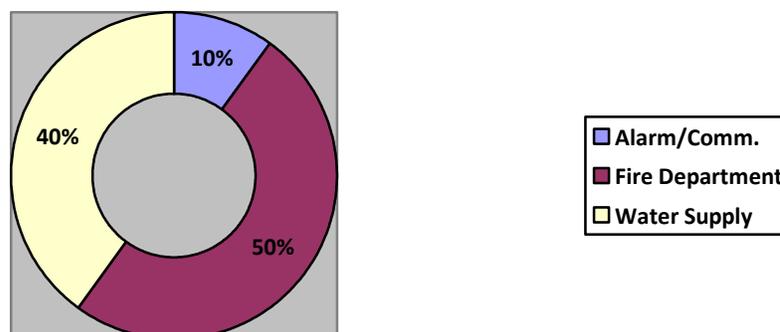
Chief Maruca's *Leading a Combination Fire Department (2009)* overall focuses more on the aspect of leadership within combination departments. It specifically focuses on the paid and volunteer combination. There tends to be tension between the two ranks, sometimes due to each being treated differently. One specific example is the difference in leadership between the paid and volunteer staff. While the focus of this research paper is not leadership, it is seen as a prominent contributing factor in the retention of volunteer personnel in a primarily paid system. And it reiterates the needs of volunteers as stated by the National Volunteer Fire Council. Ross

Township Fire Department's chain of command entails both paid and volunteer staff as company and chief officers.

But the underlying philosophy in utilizing a combination system remains the same. That is to provide an improved service at a reduced cost. Essentially it is a cost avoidance measure that limits the number of paid personnel, whether it is full-time or part-time. And the same philosophy applies to combination departments that operate with a combination of career and part-time personnel.

***Manpower: ISO Ratings and NFPA Standards***

The Insurance Services Office evaluates fire departments to give them an overall rating, also known as a Public Protection Classification (PPC). This classification is then used for fire insurance rating purposes. The ISO does not factor in EMS capabilities and responses of a fire department. Departments are evaluated in three categories: fire alarm and communication systems, fire department (companies and response), and water supply (ISO Fire Suppression Rating Schedule, Edition 02-03). Fire alarm and communication systems account for 10%, department and companies 50%, and water supply 40% as seen in Figure 5. They then break down each category. The fire alarm and communications portion evaluates the dispatch center operations and notification capabilities. The fire department section evaluates staffing, apparatus, training, equipment and maintenance. The water supply portion evaluates the community's water supply and the fire departments ability to flow certain gallons per minute over a determined amount of time.



**Figure 4: Breakdown of ISO Public Protection Classification Grading**

While all three are important, it is obvious that the biggest priority and concern to the ISO is the fire department and its response capabilities. The ISO reviews the department's first-alarm responses and initial attack for the potential to minimize property loss as quickly as possible. Up to 15% of a department's rating is the credit for company personnel (ISO Fire Suppression Rating Schedule, Edition 02-03). An addition of one on-duty person will increase the credit by 1 point. An increase in the average response of other department members by one person will increase the fire department credit by 0.33.

Because a substantial portion of a department's ISO rating is evaluated by company response, it is important to show that the Ross Township Fire Department has the personnel necessary to reinforce the first company response by the on-duty personnel. The department also implemented "box alarms" where mutual aid companies are dispatched with Ross Township fire units to a reported structure fire. First and foremost, the department wants this strong response for the safety of the citizens and personnel operating on the scene. The fact that you can maintain or improve an ISO rating is something that reflects well on the department, and can

ultimately benefit the residents of Ross Township with savings on their insurance. Currently the Ross Township Fire Department is a class 4/8B in the township and class 3 in the village.

Determining the number of personnel needed on the scene of emergencies varies by the type of event. There are other determining factors that could warrant additional personnel on scene for the same category of events such as structure fires. For example, the number of fire fighters required on scene for a single-family residential structure fire compared to a fire in a high-hazard occupancy varies greatly. Both are structure fires, but the hazard and occupancy is greater.

The National Fire Protection Association (NFPA) sets recommendations for various initial attack responses. In low-hazard occupancies such as a single family home, the recommended apparatus totals two pumpers, one ladder, and one chief officer. The total number of personnel should be no fewer than fourteen fire fighters, one chief officer, one safety officer, and a rapid intervention team (NFPA 20<sup>th</sup> Edition, Section 12 Chapter 1). Essentially twenty personnel total on the scene of a residential structure fire. For a high-hazard occupancy that total reaches thirty-one fire fighters operating on scene. The Ross Township Fire Department tries to reach these staffing objectives with their paid staffing, volunteer response, and mutual aid companies. The problem is that the volunteer response varies with time of day and availability of the volunteers. So this number can be difficult to reach at times without simply calling additional mutual aid right away.

## PROCEDURES

The research utilized for this project is evaluative and looked to identify where there are deficiencies in service. It also researched what cost savings there are for the township, and what other departments do in a similar combination setup. Statistics were reviewed on various levels. A survey was conducted with departments in southwest Ohio, and literature was reviewed to gather the best information possible.

To answer the first question the author will break down: a) how many fire details required additional personnel besides those on duty, b) the average number of personnel including paid and volunteer that responded to larger events such as structure fires and motor vehicle accidents with entrapment or multiple patients, c) the number of advanced life support transports that qualified for an additional paramedic or emergency medical technician to transport, d) if the department is meeting its vision statement goal of being able to handle simultaneous ALS calls or a moderate sized structure fire. To perform this research, fire and EMS calls were reviewed utilizing Firehouse software. Emergency details will be broken down into various categories such as daytime and evening, weekday and weekend.

To answer the second question the author will review the fire department's budget. While doing this research the department was notified that it needs to cut funds from the budget. This was due to the cut in local government funding from the state of Ohio. Working with township and department administration assisted in seeing what the cost savings is to the township operating within a paid/volunteer combination system. The Butler County Auditor's office assisted in showing what millage would be required for additional funds if additional staffing was required.

The answers to the third question of how other departments operate falls back on the literature review and the external survey. Information, statistics, and review of the topic of combination departments nationally are not as prominent as some other subjects within the fire service. The problem is that each combination department caters to its individual needs. So there is no one way that states how to operate within a combination volunteer and paid system. Therefore an upwards of twenty departments similar to Ross Township and those operating within the combination system were identified. Surveys were conducted to see how these departments utilize their volunteers; and their successes or areas of improvement needed.

When surveying departments that operate under the combination system it is important to get a solid understanding of their department. Included in the survey are questions concerning number of personnel and number of emergency calls per year. This allows the author to gain a better perspective when comparing the Ross Township Fire Department to the surveyed department. From there the author ascertains why the surveyed department is utilizing a combination paid/volunteer system. Potential answers to that question include economics, community choice, lack of volunteer staff, or an increase in call volume. Finally, other questions ask how the department utilizes its volunteer staff. The author hoped to find several departments similar to that of Ross Township and find new ways of recruitment and retention of volunteer staff.

### **Definition of Terms**

Advanced Life Support (ALS). Consists of invasive, life-saving procedures such as the placement of advanced airway adjuncts, intravenous fluids and medications, manual defibrillation, electrocardiogram interpretation, and other various skills performed by paramedics.

Appropriations. Something that is appropriated, applies to public funds that are set aside for a specific purpose.

Basic Life Support (BLS). Emergency procedures to ensure a person's immediate survival, including CPR, bleeding control, stabilization of injuries, and basic first aid.

Full-Time (Career). Employees that work 40-53 hours weekly and receive benefits and a pension.

Part-Time. Employees that are paid hourly but do not receive any other benefits such as health insurance or a pension.

Volunteer or Paid on Call. Personnel that either get paid per incident, or do not get paid at all. Not considered a paid employee and do not receive any benefits.

### **Limitations of the Study**

Because staffing models vary for combination departments, it can be difficult to identify a department similar to Ross Township Fire Department. Where one department might be similar in staffing numbers, that same department may not be similar in run volume or community demographics. Therefore, the data received paints a broad picture of the combination paid and volunteer fire service. However, it can find common themes and ideas amongst all the participating departments.

## RESULTS

### Research Questions

Research Question 1: How is the lack of volunteer support affecting emergency responses and their outcomes?

To answer question 1, emergency details from 2011 and 2012 were reviewed using Firehouse Software. Because the department only staffs 2 personnel on weeknights, there was a focus on that particular staffing setup for EMS calls. In 2012, 62% of weeknight EMS transports to the hospital were considered advanced life support (ALS) transports (Figure 6). ALS transports could vary from a patient with chest pains, to a patient in cardiac arrest. Several of these calls could require at least 2 paramedics attending the patient during transport. While each individual ALS detail was not reviewed for quality assurance, the numbers found show a potential for under-treatment of critical patients due to the lack of personnel.

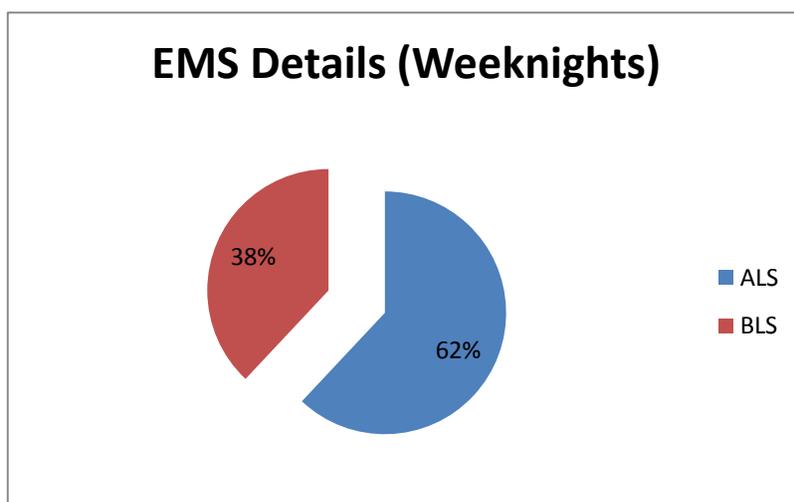


Figure 5: Weeknight EMS Details: Advanced Life Support (ALS) vs. Basic Life Support (BLS)

Reviewing the same 2 person weeknight staffing setup, 77% of fire details in 2011 required more personnel on scene than the 2 initially responding. The remaining 23% were incidents such as open burns, power lines down, and good intent calls. In 2012, there was an average of 3 volunteers that responded to structure fires during daytime hours. During the evening hours, there was an average of 6.5 volunteers that responded to structure fires. These two numbers include off duty personnel that responded from home to the station, similar to a recall. There was no significant increase in injuries at fire scenes due to a decrease in volunteer response. Nor was there an increase in dollar loss amount related to a decrease in volunteer response.

A breakdown of other various significant details in 2012 can be seen in Appendix 1 and Appendix 2. Twenty details were selected for the daytime hours of 06:00 to 18:00. These details vary from structure fires, motor vehicle accidents with entrapment, vehicle fires, and smoke in the structure. There was an average of 1.3 volunteer personnel that responded to these calls. For the evening hours, there was an average of 3.5 volunteers responding. In 2012 there was an average of 11.8 simultaneous calls for service each month. This figure includes the 18 EMS details that were covered by mutual aid units. The potential loss of revenue for mutual aid transport units is \$15,300.

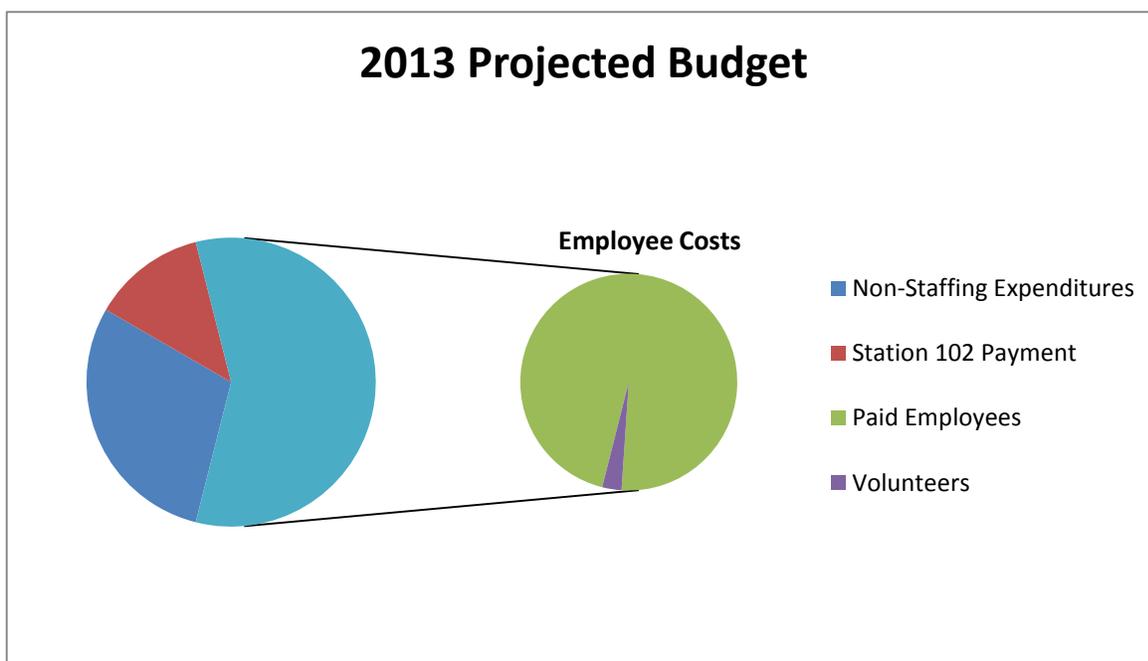
Research Question 2: Why the need for volunteers to support on duty crews? Why not just increase staffing levels?

To answer question 2, the department finances and budget were reviewed. The Ross Township Fire Department operates on a 3-mill fire levy. This general property tax generated \$477,100.87 in 2012. This was down 3.5% from 2011, and is projected to be down an additional 3.5% in 2013. The total fire department expenditures for 2012 were \$1,207,228.53. In 2013,

there is a projected 13% decrease in expenditures, with a total of \$1,052,284.31. This decrease in funds confirms that the department is not in a position to simply increase paid staffing as the answer with current funding. Also in the 2013 budget, \$133,732.50 is appropriated for the payment of the construction of Station 102. The payment of the construction of the station will end in 2017.

The department budgets an hourly rate of \$15.30 for each part-time position. For each additional part-time position to be added to the staffing level, it would cost the department an additional \$134,028 per year. This figure accounts for salary only and does not factor in other costs such as uniforms or worker's compensation premiums per employee. If the department had one volunteer respond to each call to fill the void of one paid position, that cost would be projected at \$12,000. This number would vary depending on the length of the detail. Details greater than 1 hour in length are paid for each additional hour on scene. The department currently budgets \$17,545 for volunteer compensation.

The total employee costs for 2013 are budgeted for \$609,178.88. This accounts for 66% of the operations budget of the department. The total employee costs include the salary and benefits of the career chief. The following figure, Figure 7, breaks down the expenditures projected for the year 2013. To increase staffing to 6 personnel per shift, the department will have to increase its levy by approximately 2 mills.



**Figure 6: Breakdown of 2013 Projected Budget Appropriations**

Research Question 3: What can the department do to recruit and retain volunteers if deemed necessary?

To answer research question 3, a survey (Appendix 3) was sent out to 20 combination departments in the southwest Ohio counties of Butler, Hamilton, Clermont, and Warren. Department administrators were asked why and how they utilized a combination system of paid and volunteer personnel. There were 13 departments that responded to the survey. One respondent only answered half of the questions for an unknown reason. Of those that responded, nearly 80% said they use the combination system due to economics. And over 70% believed that their current combination system was meeting the demands of the community.

Pertaining to recruitment, nearly 80% put an emphasis on recruitment and retention. Of those respondents, 100% responded that they recruit from community members. Over 90% of the departments pay for the initial training of new volunteer personnel. For the remaining 20% who

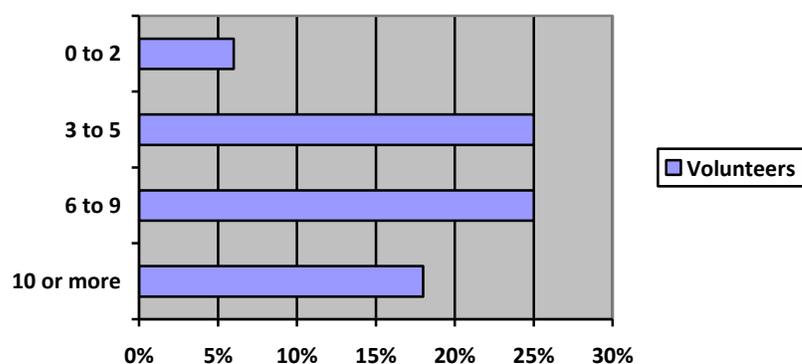
do not put an emphasis on recruitment, half stated the current combination staffing levels were sufficient. While the other half stated they planned to increase paid staffing levels.

As for retaining volunteers, the survey inquired about how departments train, pay and utilize their volunteer personnel. Half of the respondents stated that volunteer personnel receive their continuing education attending on-duty shift training with paid personnel. The remaining half uses various training night schedules that accommodates for volunteer personnel and their schedules. A majority of departments surveyed either pay their volunteers yearly or quarterly. One department did not pay their volunteers. Most of the departments that paid their volunteers yearly had an average of 6 or more volunteers respond to a structure fire. So there is no correlation for an incentive to respond with getting paid more frequently, rather than once a year. As for other areas to use volunteer personnel besides emergency responses, public education and fundraising were two of the top details selected. Another 80% said they kept their volunteer personnel active in maintaining vehicles, tools, equipment, as well as the firehouse. Departments with more career full-time personnel were less likely to have volunteers involved in any other activities besides emergency responses and public education. Departments that had larger numbers of volunteer personnel had their volunteers involved in a wider range of departmental activities other than emergency responses.

## DISCUSSION

Because the Ross Township Fire Department is caught in a crucial point of its development as a paid department, something has to change in the near future. Paid staffing is minimal and volunteer responses continue to decline (Figure 2), leaving crews shorthanded in critical situations. The research to answer question 1 shows that there needs to be more personnel responding. And that the department should look to increase paid staffing. Then the research to answer question 2 shows that the department does not have the funds to increase staffing at the time of this research. So township and department administrators need to act expeditiously to find a solution.

Combination departments vary greatly and should continue to adapt to the ever changing needs of the community (The Red Ribbon Report: Leading the Transition in Volunteer and Combination Fire Departments, IAFC). Ross Township Fire Department is similar to area combination departments in terms of average number of volunteers responding to structure fires (Figure 7). But a breakdown of other fire details (Appendix 1, Appendix 2) shows that the department is shorthanded for other serious emergencies.



**Figure 7: Survey Results: Average Number of Volunteers per Structure Fire**

Because the volunteer response is very inconsistent, there needs to be adequate paid staffing. Reviewing fire details from 2012, there were several calls that left understaffed crews in situations that were not ideal. There were two instances where there was smoke in a building with only 2 fire fighters on scene to investigate and mitigate the emergency. The department can no longer afford to put personnel in that predicament. Even with the current staffing of 4 personnel, paramedics can be put in predicaments. If they have a critical patient and need a second paramedic to transport, that leaves only 1 EMT or paramedic left staffing the station. This then leads to confusion and causes delays for volunteers to respond from home to assist the single paramedic responding to a second emergency.

With the reality that the department finances are tight, the department needs to be creative in recruiting volunteers. In 2012, the department developed a fire explorers program associated with the Dan Beard Council. Since its inception, there have been 2 students graduate and become volunteers with the department after obtaining their certifications. The department should focus on building up the explorer program to make it a strong recruiting tool. The department should also find other ways to recruit volunteers. When recruiting, it should be made clear that individuals coming on will be in reserve role. This way the individual knows what is expected of them when applying. Former volunteers that were once part of the primary response struggled to take a secondary role when the department began staffing the stations. This created animosity or disinterest, and eventually led to the departure of some volunteer personnel. Recruiting community members that want to help out their department might prefer a reserve role. Even if paid staffing levels are increased to 5 or 6 per shift, the department would still need to rely on volunteers.

## RECOMMENDATIONS

Recommendations have been developed based on the research for this project. First, the findings of this research needs to be presented to fire department administration for review. It will be recommended that after review by department administration that the research is then presented to the township administrator and trustees. It is important to emphasize to township administration that there needs to be more department personnel responding to fire details and various medical emergencies. The current system is struggling to meet the demands and calls for service of the department.

The second recommendation is that the township and department administrations need to seek additional revenue to increase the paid staffing in the near future. Ideally, the department would have 6 paid personnel per shift. This enables the department to respond to simultaneous advanced life support medical emergencies, or a moderate-sized residential structure fire. This would create an initial structure fire response of 2 engine companies with 3 personnel on each apparatus. By having two companies arriving on scene in minutes, multiple tasks such as fire suppression and search and rescue could be carried out simultaneously. The current weekday/weekend staffing model only allows one task to be performed by the one company initially responding. This is because the 2 staffed fire apparatus only have 2 personnel on each unit. And the current weeknight staffing has to wait on volunteers to respond from home before performing any interior, life-saving tasks. It would also address the issue of potential under-treatment of critical medical patients, staffing additional paramedics available for transport.

But the department has to start somewhere. So the first step would be to increase weeknight staffing to 4 personnel. And this should be done as soon as possible. This would put

the weeknight staffing in line with the daytime and weekend staffing. The current weeknight staffing of 2 personnel is insufficient per the findings of this research. And this creates variances and confusion with volunteer responses between weekday and weeknight details. The current department strategic plan needs to be revised to reflect these benchmarks of increasing staffing.

The third recommendation is to continue to recruit and retain volunteer personnel, for an improved reserve force. It is in the best interest of the department to have volunteer personnel, for an adequate secondary response from within the township. This could decrease the number of mutual aid companies requested for structure fire responses. And it can alleviate prolonged response times when requesting an ambulance from neighboring departments that rely on volunteers to respond from home to their stations as well.

When recruiting volunteers, the department needs to re-evaluate its current requirements that all personnel already be certified as fire fighters and/or EMT's. Nearly all of the combination departments surveyed recruit community members and provide their initial training to become certified. If providing the initial training, the department should continue to require that fire fighters be certified to at least Fire Fighter 1, and not the state of Ohio's 36 hour minimum volunteer certification. Ross Township Fire Department needs to continue its Citizen's Fire Academy, which gives residents an inside look at the fire service. This academy could be a potential recruiting tool for volunteer fire fighters or EMT's. With success it could also lead to a possible Fire Corps, a non-operations volunteer group. This group of individuals could assist in public education, administrative duties, or rehab duties on larger emergency details. Many of the paid employees work multiple jobs. So they are unable to attend large public events such as the department's annual open house.

The fourth recommendation is to educate residents on the current state of staffing within the department. And to openly communicate where the department thinks staffing levels should be, both paid and volunteer. It is important for residents to understand the level of staffing in relation to their expectations of the department when they call 911. The capabilities of the department are limited with the paid and volunteer resources currently available. Proactively educating the public on the current state of the department could potentially increase the chances of passing a future levy increase. And it could also potentially increase the interest of some residents wanting to volunteer their time to the department.

Educating the public that the department is taking cost effective measures by continuing to pursue a combination paid and volunteer system is important. The department should host an annual town hall meeting providing yearly updates on the status of the department. There also needs to be an article in the township newsletter regarding the use of the combination system, and the benefits that come from the system. Regardless of the direction that the department takes, communication with the residents who pay taxes for the service is critical.

## REFERENCES

- International Association of Fire Chiefs, Volunteer & Combination Officers Section. (2006). *Keeping the lights on, the trucks running, and the volunteers responding; The white ribbon report*. Fairfax, VA
- International Association of Fire Chiefs, Volunteer & Combination Officers Section. (2005) *Lighting the path to evolution: The red ribbon report*. Fairfax, VA:
- Maruca, J. (2009). *Leading a combination fire department* National Volunteer Fire Council  
retrieved November 9, 2012 from  
[http://www.nvfc.org/files/documents/Leading\\_a\\_Combination\\_Fire\\_Department.pdf](http://www.nvfc.org/files/documents/Leading_a_Combination_Fire_Department.pdf)
- National Fire Protection Association (2008). *Fire Protection Handbook. Standard for organization and deployment of suppression operations* (Sec. 12 Ch. 1.) Quincy, Ma.
- National Fire Protection Association. (2012). *U.S. fire department profile through 2011*  
Quincy, Ma. NFPA Fire Analysis and Research
- Office, I. S. (2003). *Fire Suppression Rating Schedule* (02-03 ed.). Jersey City: ISO.
- Office, I.S. (2012). *The PPC Evaluation Process*. Retrieved October 15, 2012 from  
<http://www.isomitigation.com/ppc/0000/ppc0010.html>
- U.S. Census Bureau. (2010). *2010 United States Census*. Retrieved October 11, 2012 from  
<http://www.census.gov/2010census/popmap/ipmtext.php?fl=39>
- U.S. Fire Administration. (2007). *Retention and recruitment for the volunteer emergency services* USFA Publication No. FA-310.
- Windisch, F. & Scott, G. (2005). *Volunteer & combination fire departments. IAFC Chief Fire Officers Desk Reference*. (Ch. 21). Jones & Bartlett Publishing

## APPENDIX 1 – 2012 DAYTIME FIRE RESPONSE ANALYSIS

**Table 1: Personnel on scene for various significant fire details in Ross Township- 06:00-18:00.**

Fire Detail	Paid	Vol.	M.A.
Dispatched Structure Fire	4	0	5
Working Structure Fire- Detached Bldg.	4	3	
Burning Odor in Residence	4	0	
Burning Odor in Residence	4	0	
Dispatched Structure Fire	4	1	
Working Structure Fire- Basement (Res.)	5	2	9
Commercial Vehicle Fire	4	2	
Smoke in the Residence	4	0	
Smoke in a Commercial Structure	4	1	
Working Structure Fire- Kitchen (Res.)	5	3	
Dispatched MVA w/Entrapment	4	1	
Working Structure Fire- Basement (Res.)	5	4	9
MVA-Motorcycle with medical helicopter	4	1	2
MVA w/Entrapment	4	2	
Smoke in the Residence	4	0	
MVA w/Entrapment	5	1	
Smoke in the Residence	2	0	
Smoke in the Residence	5	0	
Working Structure Fire- Residential	5	3	10
Dispatched Structure Fire	2	2	

*\*Paid staffing includes Chief 100 response. Vol= Volunteer. M.A. = Mutual Aid*

## APPENDIX 2 – 2012 EVENING FIRE DETAIL ANALYSIS

**Table 2: Personnel on scene for significant fire details in Ross Township- 18:00-06:00.**

Fire Detail	Paid	Vol.	M.A.
Vehicle Fire	2	7	
MVA w/Entrapment	2	6	
Structure Fire- Residential	4	5	52
Vehicle Fire	4	3	
Dispatched MVA w/Entrapment	2	6	
Dispatched Vehicle Fire	2	3	
Dispatched Structure Fire- Electrical	4	1	4
MVA w/Entrapment, 2 trapped+ 1 D.O.A.	2	8	8
MVA w/Entrapment	4	4	
Industrial Vehicle Fire	4	2	
Dispatched Structure Fire- Electrical	4	1	
Structure Fire- Residential- Attached Garage	4	7	4
Structure Fire- Residential + 1 Patient	2	7	
Dispatched MVA w/Entrapment	4	1	
Structure Fire- Commercial	2	7	15
Burning Odor in Structure	4	0	
Dispatched Structure Fire	2	3	
Smoke in the Residence	2	0	
Dispatched MVA w/Entrapment	2	5	
Smoke in the Residence	4	1	

\* Volunteer (Vol.) response includes both volunteer-only members, as well as paid employees responding while off duty. M.A. = Mutual Aid

### **APPENDIX 3 – SURVEY INSTRUMENT**

**Combination Paid/Volunteer Department Survey  
OFE Research Project  
Captain Shane Packer  
Ross Township Fire Department**

- 1.) Does your department utilize a combination system of paid and volunteer staff?  
Yes  
No
- 2.) Why does your department utilize the combination paid/volunteer system?  
Economic  
Community Choice  
Lack of Volunteering Staff  
Run Volume Increase
- 3.) Is your current model of the combination system meeting the demands of the department and community?  
Yes  
No, needs improvement
- 4.) Please choose an option below that best describes you department's staffing model:  
100% Paid coverage for fire and EMS  
100% Paid coverage for EMS only and volunteer fire  
Partially paid coverage for fire and EMS  
Partially paid coverage for EMS only and volunteer fire  
Paid administrative staff only with volunteer fire and EMS
- 5.) Does you department put an emphasis on volunteer recruitment and retention?  
Yes  
No
- 6.) If "Yes" to #5, where do you recruit volunteer members?  
Community members  
Citizen's Academies  
Vocational School/Community College  
Fire Explorers/Junior Firefighter program
- 7.) If "No" to #5, choose the best answer below:  
Current staffing model working  
Plan to increase paid staffing  
Phasing out volunteer system
- 8.) Do you pay for the initial training of oncoming volunteer personnel to obtain certification?  
Yes  
No

9.) How do volunteer personnel receive training and continuing education?

Monthly trainings specific to volunteer personnel

Weekly trainings specific to volunteer personnel

Volunteer personnel obtain training with paid personnel during on-shift drill

Volunteer personnel are responsible for their own continuing education

10.) How often are volunteer personnel paid?

Yearly

Quarterly

Monthly

Bi-Weekly

Volunteers do not get paid

11.) Does your department have specific policies regarding fire responses for volunteer personnel?

Yes

No

12.) On average, how many volunteer personnel respond for a structure fire?

0-2

3-5

6-9

10+

13.) Does your department have specific policies regarding EMS responses for volunteer personnel?

Yes

No

14.) Please select other activities that your department volunteers participate in:

Fire Inspections

Hydrant Maintenance

Public Education

Station/Vehicle/Equipment Maintenance

Fundraising

15.) How many total fire and EMS details did your department respond to in 2012?

0-500

501-1,000

1,001- 1,500

1,500-2,000

2,001 +

List the number of personnel on your department:

Total:

Career:

Part-time:

Volunteer/Paid On Call: