

Alternative Staffing Strategies for the Whitehouse Fire Department

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CERTIFICATION STATEMENT

I hereby certify that the following statements are true:

1. This paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

2. I have affirmed the use of proper spelling and grammar in this document by using the spell and grammar check functions of a word processing software program and correcting the errors as suggested by the program.

Signed: Jason Francis

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ABSTRACT

Whitehouse Fire Department (WHFD) staffs its station twenty-four hours a day with two personnel per shift. The department relies on volunteers responding from home to supplement on-duty staff for every incident. Over the last six-year period, a decrease in volunteer responses has left incidents under-staffed. Of primary concern are responses requiring a fire engine or concurrent incidents; meaning a second incident while on-duty crews are already handling another. The most problematic time periods are weeknights from 5 p.m. to 7 a.m. and weekends from Saturday at 7 a.m. until Monday at 7 a.m.

The purpose of this study was to identify weeknight and weekend staffing needs and develop recommendations to improve staffing. Using descriptive research technology, the following research questions were asked. 1. What level of service can the citizens of Whitehouse expect to receive with the current staffing model? 2. How does the WHFD staffing model compare with other similar fire departments of similar size? 3. What alternative staffing models are applicable to supplement WHFD personnel at incidents on weeknights and weekends? 4. How can the WHFD meet the needs of concurrent incidents during weeknights and weekends?

Literature from the Ohio Fire Chiefs Association (OFE), National Fire Academy (EFO) Program, and peer-reviewed magazine articles were reviewed. In addition, data from fire department software was reviewed. Two surveys were sent to 68 fire departments in Ohio. There were 33 surveys returned. This accounted for a 48% return rate.

After the four research questions were answered, results showed that the engine responded on average a total of 157 times per year to incidents on the weeknights and 61 times on the weekends over a Six-year period. When an incident was dispatched, it took the engine an average of 14 minutes to respond to incidents from 2014-2018. Then in 2018-2019 Engine

response times were 9 minutes on average. From 2014-2018, the department was able to handle 67% of the Concurrent incidents on the weekends, then 70% of the concurrent incidents on the weeknights. From 2018-2019, the department was able to handle 82% of the concurrent incidents on the weeknights and 90% of the concurrent incidents on the weekends.

The author made five recommendations. 1. Create a daily minimum staffing policy. 2. Create and implement a forced in policy. 3. Hire additional firefighters 4. Share personnel between departments. 5. Increase the amount of automatic aid with surrounding fire departments. These agreements would be for structure fires, outdoor fires, vehicle accidents, and water rescues.

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INTRODUCTION

Statement of the Problem

The members of the Whitehouse Fire Department (WHFD) are dedicated individuals that spend countless hours ensuring calls for service within the fire department's response area are handled. However, a concurrent incident or an initial engine response on weeknights from 5 p.m. to 7 a.m. and on the weekends from Saturday at 7 a.m. to Monday at 7 a.m. with the current staffing model are taxing fire department resources. The problem this study will investigate is to determine if the current staffing model meets the increased demand of the citizens within the community when there is an emergency.

Purpose of the Study

The purpose of this study is to identify staffing needs at incidents during weeknights and weekends. The research questions in this study will investigate what changes need to be implemented at the Whitehouse Fire Department to provide response capabilities for a concurrent incident or an initial engine response on weeknights and weekends. Using descriptive research methodology, the research questions this study will investigate are:

Research Questions

1. What level of service can the citizens of Whitehouse expect to receive with the current staffing model?
2. How does the WHFD staffing model compare with other similar fire departments of similar size?

3. What alternative staffing models are applicable to supplement WHFD personnel at incidents on weeknights and weekends?
4. How can the WHFD meet the needs of concurrent incidents during weeknights and weekends?

BACKGROUND AND SIGNIFICANCE

Whitehouse Fire Department (WHFD) located within the Village of Whitehouse is a combination department consisting of full-time, part-time, and volunteer personnel. The Village of Whitehouse is 4.29 square miles and is located in southwestern Lucas County, Ohio.

Whitehouse borders Waterville Township to the north, south, and west, Providence and Swanton Townships to the west, and Waterville City to the east (Appendix A). Whitehouse has a population of 4,713, which represents a 9.13% growth in population since 2015 (Town Charts, 2019).

Whitehouse Fire Department has a contract to provide fire and EMS services to two large townships. Neither Swanton nor Waterville Townships have its own fire department. In addition, both are billed on an annual basis to provide fire and EMS coverage. The first contractual area is Swanton Township. This rural area is a total of 24 square miles with most of the township being residential houses and dense forest. The population is 3,005 residents (Town Charts, 2019).

Whitehouse Fire covers half of this rural area that is a total of 12 square miles protecting approximately 1,500 residents. Springfield Township Fire Department (SFFD) covers the other half of the township. The second contractual area is Waterville Township. This rural area is also 24 square miles with most of the land being residential houses and farmland. Their population is 6,281 residents (Town Charts, 2019). Whitehouse Fire Department covers half of this area too, and Waterville Fire Department (WVFD) covers the other half. Between the Village of Whitehouse, Swanton Township, and Waterville Township, Whitehouse Fire Department protects 13,999 residents over 29 square miles.

The Village of Whitehouse was founded in 1864, and the first meeting of the fire department was May 25, 1896. From the inception of the fire department until 1977 the department was

located at the Village administration building in downtown Whitehouse. In 1977, a new fire station was built on land that was donated from the American Can Company, now called the Ardaugh Group (Ardaugh Group, 2020). In 1999, the fire department was remodeled due to growth of services. During the remodel, extra apparatus bays, sleeping quarters, and administration offices were built. The vehicle inventory of the fire department consists of two medic units, two engines, one 107' ladder truck, one utility pickup truck, one brush truck, one hazardous materials trailer, and one 1,250-gallon water tender that responds to numerous types of fire incidents (Appendix B) and EMS incidents (Appendix C). Whitehouse has a class 3/3x Insurance Service Office (ISO) rating. ISO scores fire departments on a one to ten scale, with one being the highest score and ten being the lowest. Some of the factors that are evaluated are fire department operations, water supply, and communications. Depending on the citizens' insurance company, citizens may see reduced insurance rates from low ISO ratings (Value Penguin, 2020).

There are a total of 51 members on the Whitehouse Fire Department's roster (12 full-time, 22 part-time, and 17 volunteer firefighters). Full-time administrative staff consists of one Fire Chief, one Deputy Fire Chief, and one training Captain. Administrative staff covers the core hours of 7 a.m. to 5 p.m. Monday through Friday which are compensated 40 hours per week. In addition to administrative staff, operational officers consist of one officer (1 Captain and 2 Lieutenants) per 24-hour shift. There are a total of 17 volunteer firefighters on the roster including one volunteer Assistant Chief, one Safety Officer, and one Captain (Appendix D).

To schedule and track all personnel, the department uses software called "When to Work". This software tracks all full-time, part-time, and on-call personnel that work scheduled shifts.

Personnel can use a computer, smart phone, and tablet to view their schedules and to request time off.

Another software program that Whitehouse uses is called “Emergency Reporting”. This software tracks all incident responses that the fire department responds to, and volunteer responses at incidents. National Fire Incident Reporting System (NFIRS) is a federal reporting system of incidents that are uploaded to a State of Ohio database each month. The State of Ohio uses this data along with data from other fire departments in Ohio to track statistics. The State of Ohio also provides grant funding to fire departments if they are compliant in uploading incident data monthly. Most statistics drive fire prevention activities for the public along with other safety related items.

The Whitehouse Fire Department has a unique daily staffing schedule. The fire department staffs both the fire side and county life squad side. First, the fire department is staffed with a total of three full-time fire officers that are FF/Medics. There is one fire officer per shift that works on a 24/48-hour shift rotation along with one part-time FF/Medic that works 7 a.m. to 5 p.m. Monday through Friday. In addition to FF/Medics, there are FF/EMT’s that may pick up shifts when there is a vacancy on the fire side. A FF/EMT may work as long as the minimum of two FF/Medics are met. In addition to personnel, there is one part-time safety assistant that works 25 hours a week; this position works from 8 a.m. to 1 p.m. Monday through Friday.

There are a total of 11 strategically placed life squads in Lucas County (Appendix E). Life Squad 9’s inception was on January 1, 1978. While this advanced life support unit is stationed in Whitehouse; its primary response area is Whitehouse, Waterville City, Providence Township, Swanton Township, Waterville Township, and part of Monclova Township. Even though the life squad is operated by LCEMS, the life squad itself is staffed by Whitehouse Fire personnel.

Employees on the life squad are dedicated to that unit and may not cross staff to fire department apparatus or fire department owned EMS medic units while on duty per the LCEMS contract (Whitehouse Fire Department – Lucas County Emergency Medical Services, 2019). Staffing includes six full-time FF/Medics that work on a 24/48-hour ABC shift rotation; two per shift staff the Lucas County Advanced Life Support (ALS) Life Squad, which can respond anywhere in Lucas County.

Daily staffing consists of two full-time personnel on the life squad and one full-time employee on the fire side 24 hours a day. A part-time employee supplements the fire side Monday through Friday 7 a.m. to 5 p.m. At night and on the weekends, staffing levels fall to three personnel without the part-time position. In addition, one employee may be off per day. If an employee is off, the position is not backfilled unless staffing levels fall below the minimum of two FF/Medics on the life squad. For calls on the weeknights and weekends, the on-duty fire side FF/Medic will wait for a volunteer FF/EMT to respond to the fire station before responding to the incident. One full-time FF/Medic will rotate positions each shift between the fire side and life squad side. This also means that the full-time fire officer will rotate with their crew between the fire side and the life squad side each shift. This practice leaves the department without a fire officer presence when they are on an incident on the life squad outside of Whitehouse's response area. When there is a permanent vacancy in the full-time ranks, current volunteer and part-time employees are transferred into those vacancies if they meet all qualifications and are successful through the interview process.

Whitehouse Fire Department is dispatched by Consolidated Fire Dispatch (CFD) which is in the 911 center along with Lucas County Sheriff's Office, Toledo Police, Toledo Fire, and LCEMS dispatch in Toledo, Ohio. Consolidated Fire Dispatch also dispatches for other fire

departments' including 180th Air National Guard, Springfield Fire Department, Monclova Township Fire Department, Waterville Fire Department, and Richfield Fire Department. When there is a 911 call, dispatchers set off an audible tone, and announce the incident over pagers that volunteer, and on-duty firefighters carry. As a second means of notification, Whitehouse Fire Department uses a cell phone application called "I Am Responding". Once a notification is received on the cell phone application, crews indicate if they are responding to the fire station for the incident. This allows members on the fire department to see the number of personnel that are also responding to the fire station for incidents.

The fire department responds to a plethora of different types of incidents. If an EMS incident is dispatched during the day Monday through Friday, on-duty personnel handle the incident. If the incident occurs on a weekday after 5 p.m. or on the weekend on Saturday at 7 a.m. until Monday at 7 a.m., one on duty employee in addition to one volunteer FF/EMT is needed to respond from home. When needed a utility type of vehicle that is capable of providing BLS care will respond to additional incidents with volunteers. The on-scene crew will then call for mutual aid to assist. Depending on the type of EMS call; ALS or BLS, the life squad may or may not respond to the incident. If the life squad is dispatched, it means that the call is ALS per questions that the 911 call taker ascertains from the caller requesting assistance. If the fire department medic unit and the life squad respond to the same incident, the station is emptied with on duty personnel. Citizens will see Life Squad 9 on Whitehouse incidents 40% of the time (Emergency Reporting ALS Compared to BLS Incidents, 2019). Once on scene, the call may be BLS; which the fire department medic unit will then transport the patient to the hospital if necessary. When there is an incident that requires an engine response, one on duty employee is required in addition to two volunteer firefighters to respond to the incident. Sometimes it takes multiple

pager activations before the first out apparatus responds. Sometimes there are multiple volunteer firefighters that respond to the fire station for incidents. Other times the duty crew is fortunate to have additional personnel and apparatus respond to incidents when requested. If an incident is dispatched, one of the Chiefs or training Captain will respond to assist if no one else is responding to the fire station. However, there is not an officer on call policy in place that mandates that a Chief Officer or training Captain must share on call duties to ensure a response; this may need to change in the future. Currently, frequent conversations occur every day between Chiefs, as there is at least one Chief Officer in town all the time ready to respond to incidents if needed.

Funding for the Village of Whitehouse is complicated. The village collects approximately \$14,000,000.00 per year through a 1.5% income tax (Village of Whitehouse Annual Budget 2019). This income is divided across fire, police, administration, and five areas of maintenance. The maintenance budget includes maintenance, water, roads, sewer, and parks. The last item in the budget is capital improvements. When there is a new, or replacement capital item that is due to be purchased based on the capital improvement plan, the item is then placed into that respected yearly budget to be purchased. If a capital item is not purchased for the budget year, the money goes back into the capital improvement fund. If another Village department needs to make an emergency capital purchase on a piece of equipment or building repair, all department heads meet to see if their respected capital project purchases can wait for a later date into the future so that another department can make the emergency purchase. The fire department budget in 2019 was \$592,054.92 (Whitehouse Fire Department Annual Budget, 2019). This budget takes care of six full-time personnel that are paid by Village Ordinance; full-time employees do not have a collective bargaining agreement. These positions include one Fire Chief, one Deputy Fire

Chief, one training Captain and three shift FF/Medics. In addition to full-time staff, the fire budget covers up to 25 part-time positions (22 filled now), 25 volunteer positions (17 filled now), and fire department operations such as supplies, equipment, maintenance contracts, and fuel.

The Village of Whitehouse receives \$804,396.14 per year to have Life Squad 9 stationed at the Whitehouse Fire Department (Whitehouse Fire Department – Lucas County Emergency Medical Services, 2019). The money that is deposited into Whitehouse's account covers personnel cost for six employees, health benefits for two employees, and operational cost such as fuel, station maintenance, and utilities. Whitehouse supplements \$192,756.84 per year out of the general fund for health benefits for the other four full-time employees. (Village of Whitehouse Annual Budget, 2019). When the life squad was first put into service in Whitehouse in 1978, taxpayers in the village did not have to supplement funding. Due to increased rates in health benefits, salaries, fringe benefits, and then the increased cost of personal protective equipment (PPE), The Village of Whitehouse now supplements the cost of the life squad to stay in the village. However, the life squad is strategically located; moving it to another municipality would not make logical sense (Appendix F). The life squad budget covers payroll for six full-time FF/Medics that are paid by Village Ordinance; employees do not have a collective bargaining agreement. (Whitehouse Fire Department Annual Life Squad Budget, 2019). Between the fire budget and the life squad budget, Whitehouse Fire has an annual budget of 1.6 million dollars per year.

The fire department uses 90% of the annual budget for staffing cost. Each year all village departments have received a 1-2% increase in their respected budgets. Capital is planned in five to ten-year increments divided out throughout safety services, five divisions of maintenance, and

administration (Village of Whitehouse Capital Improvement, 2019). All full-time FF/Medics are paid an hourly rate based on step pay. This step pay has six steps and all new full-time employees' start at step one; it takes a total of six steps (years) to top out on the pay scale. The Fire Chief has authorization to start an employee at a higher step based on the individual's previous years of experience from another entity (Village of Whitehouse Pay Scale, 2019). Each year based on the annual performance review; each employee will move to the next step pay based on the percentage of their annual performance review. If the annual performance review is over 90%, the affected employee will receive 100% of their step pay in addition to a cost-of-living raise, which typically is 1 to 1.5% based on national averages. If an employee's annual performance review percentage is less than 90%, they will receive the numerical value percentage itself (89% evaluation score would equal an 89% of step pay). Once an employee is working through the steps to top out, as long as they are good productive employees that are not in active discipline and do not have performance evaluations below 90%, they will have no issues topping out on their pay as scheduled. If the employee has received less than 90% on an evaluation, they will eventually top out; it may take longer than six years. Once the employee has reached step six, the only raise that the employee will see in the future is an annual cost of living raise and longevity pay based on Council approval yearly (Village of Whitehouse Longevity Pay, 2019).

In addition to funding, the Village of Whitehouse bills two contractual municipalities on an annual basis through contracts to provide fire and EMS services. The first contractual area is Swanton Township; the current annual fee for service is \$70,640.00 (Appendix G). The revenue that is received from Swanton Township is deposited into the village's general fund (Whitehouse Fire Department – Swanton Township Contract, 2017). The second contractual area is Waterville

Township. The current annual fee for service is \$56,334.00 (Appendix H). The revenue that is received from Waterville Township is also deposited into the village's general fund (Whitehouse Fire Department – Waterville Township Contract, 2019).

There has been a 33% increase in the amount of fire and EMS incidents in the last six-years in Whitehouse's response area. The number of incidents has increased, and the number of volunteer firefighters has roughly stayed the same (Appendix I). In 2014 the fire department responded to a total of 691 fire and EMS incidents (215 fire related and 476 EMS) incidents (Appendix J). There were 548 (317 Fire and 231 EMS) incidents in Whitehouse, 98 (66 Fire and 32 EMS) incidents in Swanton Township, 32 (17 Fire and 15 EMS) incidents in Waterville Township, and 13 (5 Fire and 8 EMS) incidents in other municipalities. Fast forward to 2019 the fire department responded to 927 fire and EMS incidents. This accounted for a total of 279 fire incidents and 648 EMS incidents. There were 713 (203 Fire and 510 EMS) incidents in Whitehouse, 277 (152 Fire and 125 EMS) incidents in Swanton Township, 208 (123 Fire and 85 EMS) incidents in Waterville Township, and 119 (26 Fire and 93 EMS) incidents in other municipalities (Appendix K). This is a 17% increase over the last six-years in the Village of Whitehouse, A 182% increase over six-years in Swanton Township, and then a 514% increase in Waterville Township. In addition to incidents, the fire department has seen a 20.14% increase in the number of mutual aid incidents given, and 2.38% increase in the mutual aid calls received in the last six-years (Appendix L) and (Appendix M). In addition to mutual aid incidents, the fire department has seen a 17% increase in the number of fire and EMS concurrent incidents in the last six-years. A concurrent incident is a second call being dispatched while the initial call is still being handled. In 2015 there were a total of 121 fire and EMS concurrent calls. In 2019, there were a total of 142 fire and EMS concurrent calls (Appendix N). The author did not include

2014, because there were 240 concurrent incidents or 33% of both fire and EMS incidents were concurrent due to increased calls for service in two adjacent jurisdictions. If the author would have included 2014 there would have been skewed data.

The number of incidents that the life squad is dispatched to is not included into the total number of fire department incidents. In 2014, there were a total of 29,223 life squad dispatches in Lucas County between all the life squads. Out of the total number of incidents, Life Squad 9 responded to 859 incidents or 2% of the total number of incidents that all of the life squads were dispatched to. Fast forward to 2019, there were 25,233 life squad dispatches in Lucas County between all the life squads. Out of the total number of incidents, Life Squad 9 responded to 725 incidents, or 2% of the total number of incidents. This was a 13% decrease in the total number of incidents that life squads were dispatched to in six-years (Appendix O). However, Life Squad 9 remained consistent with 2% of the overall dispatches throughout Lucas County. Some of the known factors for the decrease were the change in Computer Aided Dispatch, an increase number of paramedics in the system on transporting fire departments medic units, and changes in response processes by LCEMS dispatch administration.

In 2013 the fire department staffed one part-time employee from 7 a.m. to 5 p.m. Monday through Friday. At night, staffing decreased from two personnel on the fire side to one employee. This left the fire department side with only one employee and two employees on the life squad. When a full-time employee wanted to leave for the rest of the shift, they could do so if there was enough time off banked. When the full-time employee went home, the shift was not backfilled unless staffing fell below the minimum of two FF/Medics to cover the life squad. This practice left the fire department uncovered and vulnerable to failure. To combat staffing issues, an automatic aid agreement was created with the 180th Air Nation Guard for all incidents inside of

Swanton Township (Whitehouse Fire Department- Swanton Township Contract, 2013). This agreement worked well, especially for structure fires and motor vehicle accidents. Since the 180th Air Nation Guard Fire Department (ANGFD) is staffed 24 hours a day, this practice ensured that an engine was on scene quickly to handle incidents; sometimes beating Whitehouse to the scene. In 2014 an automatic aid agreement was created with Waterville Fire Department for all structure fires (Whitehouse Fire Department – Waterville City Automatic Aid Contract, 2014). Again, this agreement ensured that an engine would respond to the scene in theory. However, this did not guarantee that an engine would actually respond; Waterville Fire Department is not consistently staffed for the full 24-hour duration. Waterville Fire has experienced the same response issues as Whitehouse Fire is having.

In 2015 there were few volunteers that were able to respond to incidents during the weeknights from 5 p.m. to 7 a.m. and on the weekends from Saturday morning at 7 a.m. to Monday morning at 7 a.m. when a fire or EMS response was requested. When there is a concurrent incident or an initial incident that requires an engine response, it is difficult to respond to the scene because of volunteer availability. In 2016 to combat the decrease in the amount of volunteer availability, three additional volunteer firefighters were hired. However, volunteer participation at incidents continued to decline during the weeknights and on the weekends. The fire department used to respond and transport to the hospital with one emergency medical technician (EMT) providing patient care and one emergency medical responder (EMR) driving the medic unit. However, since the fire department is not predominately volunteer anymore, this practice had to cease in 2016 which crippled the fire department even more (Law Writer, 2020). Even though the fire department only had two FF/Emergency Medical Responders (FF/EMR) on the roster, the response percentages of those two FF/EMR's were high.

In 2017 volunteer participation continued to decline. A specific policy that the fire department has adopted through Consolidated Fire Dispatch (CFD) is when a call goes unanswered after five minutes from the time of dispatch; CFD will alert crews for the second time. After seven minutes, CFD will send the closest fire department to respond to the incident (Whitehouse Tone out Procedure 2017). Another problem that was witnessed was when volunteer participation decreased, incident response times increased to the point that the first out apparatus was able to respond to incidents. However, it took multiple pager activations to do so. To make matters worse, when a full-time employee was off, responses required two volunteer firefighters to respond to the fire station instead of one creating a longer delay.

In 2018, Village Council approved the part-time position to be extended from 10 hour shifts five days a week to 24 hour shifts seven days a week to help cover incidents. There was an influx of part-time personnel hired. Nine part-time positions became available to work regular part-time shifts. One part-time employee per shift started to work 24/192 shifts seven days a week. This change made it possible for the duty crew of two to respond to emergency medical service (EMS) incidents 24 hours a day, 7 days a week. Hiring part-time personnel solved the initial EMS response issue 90% of the time. However, it does not fix the issue when there is a concurrent incident, or an engine response that is dispatched. During the workday, the Deputy Chief became part of the engine crew so that the engine could respond quickly. On weeknights and weekends two on duty personnel respond to EMS incidents without issues. However, the on-duty crew waits for one volunteer firefighter to respond to the fire station to create a crew of three to respond on the engine per Whitehouse Fire Department Policy. To assist with back filling a position, an EMS on-call position was created. This incentive allowed a volunteer firefighter to receive an on-call rate of \$5.00 per hour to ensure an initial fire and EMS response

was handled. When an incident is dispatched, a volunteer firefighter would make an hourly rate of \$11.95 per hour in addition to on-call pay.

If calls for service continue to increase and strain fire department operations with the current staffing model, citizens in the response area will see a delayed response due to limited resources. However, the fire department has a procedure in place that will dispatch other jurisdictional (mutual aid) fire and emergency medical service (EMS) agencies if assistance is needed (Law Writer, 2020). To this date, Whitehouse Fire Department has not had a failed response (Whitehouse Failed Response Coverage, 2019). Whitehouse has however responded to other entities that have had a failed response with the on-duty crew. A failed response is a term used when no one responds to the fire station to answer a call for service. When Whitehouse Fire Department handles a failed response for other municipalities, it leaves the Village uncovered and vulnerable to failures from not being able to handle their own incidents.

Few new members have joined the fire department after multiple attempts to find new potential volunteer firefighters during open houses in addition to other recruitment programs. Administration has hired 17 part-time personnel to offset the need and to be able to handle an increased number of incidents. However, part-time personnel may only work an average of 29 hours per week. These hours have been set by the Village of Whitehouse, the Village's solicitor, along with the maximum set hours per year set by the Affordable Care Act (ACA) without needing to offer part-time employees benefits (Employment Law Handbook, 2020). The ACA stipulates that the employer must offer benefits based on full-time equivalents, which the village has a total of 38 full-time employees and 41 part-time employees across all departments. The aforementioned employees' are calculated into a formula to include the total number of part-time employees that the village employs. If the sum of the formula is over 50, then the employer has

to offer benefits to employees if the employee works an average of 30 or more hours per week, and/or works over 1500 scheduled hours per year. The Village of Whitehouse has a sum of 52 (Health Care, 2020). During the summer, the sum increases to over 52 due to summer part-time help that the village maintenance department utilizes. This sum is divided up between all departments in a municipality not just the fire department per the Affordable Care Act (ACA).

This problem has encouraged the author to find a solution to a growing staffing issue within the fire department. However, staffing issues are global across the United States. Volunteer firefighters providing community assistance is diminishing. There needs to be a solution to the growing problem of volunteer availability. The main issue that needs to be investigated is a solid staffing solution that enables the citizens of Whitehouse and contractual areas to be able to receive the best customer service that they deserve when called upon.

Both Waterville and Whitehouse Fire have staffing deployment issues on incidents. In 2018, both communities came together to discuss options to find a long-term solution. Since Waterville and Whitehouse respond to incidents in Waterville Township, they were asked if they wanted to remain a partner and help find a solution to fix staffing issues. A recommendation was made to hire consultants from the Ohio Fire Chiefs Association (OFCA) to complete a feasibility study. The feasibility study was completed in 2019 between Whitehouse Fire, Waterville Fire, and Waterville Township by Ret. Fire Chief Stan Crosley with the Ohio Fire Chiefs Association. The purpose of the feasibility study was to see if a joint fire and EMS district could work between the three communities. The feasibility study proposed two recommendations. One of the recommendations was to staff five firefighters per shift per department, and administrative staff. The study proposed a 6.0 mil levy to make the district work. The district would not save money

to the taxpayers in the beginning; it would however increase fire and EMS protection to the citizens (S. Crosley, 2019).

Once the feasibility study was published, there was a community presentation at the Anthony Wayne High School. Ret. Fire Chief Stan Crosley presented the document. After the study was published, a steering committee was formed to thoroughly review the document and make a recommendation to the community leaders between each municipality. Between the three communities, it was decided legislatively that it is not the right time to form a district. The purpose of the feasibility study was to have a long-term solution to a staffing issue. Just like the feasibility study, this document is meant to find an alternative staffing deployment solution.

Community leaders from the three communities began to meet after the feasibility study was voted against to find other solutions. During the meetings, there were discussions on working closer on automatic aid agreements, sharing of personnel, joint funding solutions, and joint sharing of equipment purchases. Later in 2019, a detailed plan was discussed to work closer with Waterville Fire on response plans.

The potential impact this study could have on Whitehouse Fire Department is determining if the current staffing level is adequate. If staffing issues are found, what changes are needed to be implemented to meet increased demands of the citizens? Lastly, what practices can be accomplished to improve staffing when there is a concurrent incident or an incident that requires an engine response on weeknights and on the weekends.

LITERATURE REVIEW

The purpose of the literature review was to find information on alternative staffing strategies. Resources such as publications, Applied Research Project from Ohio Fire Chiefs Association; Ohio Fire Executive (OFE) Program and National Fire Academy; Executive Fire Officer (EFO) program were researched. In addition, numerous internet sites were reviewed. In conclusion there were multiple telephone interviews with neighboring Fire Chiefs.

In an article written by Vock, he states that almost every department is seeing a decrease in the number of people testing and applying to be firefighters. The situation only promises to get worse as a wave of baby boomer firefighters retires over the next several years. The workload of fire departments has grown substantially, even as their core mission -- putting out fires -- has dwindled (Vock, 2018)

Departments in general are struggling to meet the new demands that citizens request. As stated previously in the Background and Significance. Staffing deployment issues at the Whitehouse Fire Department are on weeknights after 5 p.m. and on the weekends from Saturday morning at 7 a.m. until Monday morning at 7 a.m. (Emergency Reporting Response Report, 2020).

If an incident is dispatched on the weeknights and weekends that requires an engine response, the on-duty crew of two waits for a volunteer firefighter to respond to the fire station before responding to the incident. If a citizen calls 911 for an emergency medical services (EMS) incident, the on-duty crew at the fire department will be at your doorstep quickly if they are not on another incident twenty-four hours a day. However, during weeknights and weekends, if there is a concurrent incident or a response that requires an engine, the incident most likely would not

be able to be handled with the current staffing model. The overall ability to handle a concurrent incident or an initial engine response depends on the number of volunteer personnel that are on stand-by at the fire station while the initial EMS incident is being handled (Emergency Reporting Volunteer Participation Report, 2020).

In an article written by Starnes, he explains that there are four issues facing the fire department today. One is funding and retention of firefighters. Two is ensuring firefighter safety. Three is enhancing firefighter communication. And the last issue is coordinating agency resources. Many fire departments, particularly in smaller communities are short staffed because of reduced budgets and diminishing funds (Starnes, 2019).

In 2014, there were 40,893 Firefighters in Ohio. In 2019, there were 38,943 Firefighters. This is a five percent decrease in five-years per personal conversations with the (Personal communications Ohio Division of EMS on February 10, 2020).

Davis and Aguirre discussed that there are many variations in shift schedules for fire departments, and there is not one “golden schedule”. Some combination fire departments staff the fire station in 12-hour shifts. Fire departments usually staff shifts from 7 a.m. to 7 p.m., then 7 p.m. to 7 a.m. (Davis and Aguirre, 2009).

In an article written by Rielage, he states that some fire departments have started staffing with on duty firefighters due to decreased availability of volunteer firefighters. The call volume faced by fire departments, especially EMS incidents, doubles approximately every five years; meaning a seven-fold increase over the same 20-year period (Rielage, 2009).

An issue that Whitehouse Fire has is that many of the volunteer firefighters are not available during the day because they usually work outside of the response area. Most volunteer firefighters working at the Whitehouse Fire Department have Monday through Friday jobs or work for other fire department that work the same fire department schedule as Whitehouse (Whitehouse Fire Personnel Availability, 2020).

Depending on local conditions, firefighters are typically required to work from 40 to 56 hours a week. When compared to Whitehouse, most fire departments near Whitehouse utilize a variety of shifts to maximize staffing coverage. Most departments staff personnel at the fire station 24/7.

In an article written by Business Management Solutions, it states that a common shift is the 24/48 shift. "Personnel are on duty for 24 hours then are off duty for 48 hours" (Firefighter now 2020). "The shift rotates every three days" (Business Management Systems, 2012).

This consists of an "A" shift, "B" shift, and "C" shift. The model repeats itself indefinitely. Employees that work the 24/48 shift, work an average of 56 hours per week, 10 to 11 days a month, and 120 shifts per year.

In an article written by Varone, he said that if offered, most firefighters enjoy the 24/48 schedule as some fire departments offer "Kelly Days" in lieu of offering overtime". "Whether paid or unpaid, the purpose of a "Kelly day" in modern times is to reduce the hours that a firefighter is at work; most commonly to minimize the need to pay firefighters' overtime if firefighters work 24/48-hour shifts with "Kelly Days", the firefighters will work 48 hours a week. Personnel will have a predesignated day off or at a minimum every 6th shift off". The 24/48 shift takes a minimum of three personnel to work the ABC shift on a rotating basis. If there were three personnel per shift, this would equate to nine personnel (Varone, 2018).

A second type of schedule is the 24/24 shift. Personnel are on duty for 24 hours then are off for 24 hours. This type of schedule is a little more complicated. Firefighters work a set of 24-hour shifts until the on shift-off shift-on shift is worked in a set of three days over a five-day period. After working the set number of days, personnel are then off for four straight days.

A third shift pattern that fire departments use is called a 24/72 shift. This shift allows employees to work 24 hours on and 72 hours off. Based on the preference of the fire department, this style of shift usually does not accrue overtime unless the employee works 212 hours over a 28-day period. The 24/72 shift allows employees to have an additional day off between shifts. The 24/72 shift takes a minimum of four personnel to work the ABCD shift on a rotating basis. If there were three personnel per shift, this would equate to twelve personnel. Both Maumee Fire Department and Springfield Fire Department which are near Whitehouse use the 24/72 schedule for full-time employees (B. Loboschefski personnel conversation May 20, 2019 and D. Moore personnel conversation May 15, 2020).

In an article written by Briggs, he states that another type of shift is called the 48/96 shift. Personnel work 48 hours followed by 96 hours off. The scheduling concept is new and is gaining popularity in the United States. The shift uses three platoons and has 96 hours off between shifts. Similar to the 24/48, this shift also uses an ABC rotation (Briggs, 2012).

Many entities are creating mutual aid and automatic aid agreements with adjacent jurisdictions. Most mutual aid plans are written within intergovernmental agreements that outline how agencies will assist one another when requested (National Fire Protection Agency [NFPA], 2016).

A FEMA document states that automatic and mutual aid contracts are important. These contracts allow for needed resources to be on the scene of an incident without delays. “It is critical that the executive fire officer learn and develop their ability to analyze emergency incidents and identify some of the best practices to better prepare fire departments to staff for future operations” (FEMA, 2016).

An interesting fact shows that 21.8% of the fire departments in Ohio are considered mostly volunteer. These departments use a combination of volunteer firefighters, and part-time firefighters. Some departments even have full-time Firefighters as part of a combination fire department (FEMA 2019). Whitehouse Fire Department falls into the category of a combination fire department. They staff full-time, part-time, and supplement volunteer staffing at incidents.

In an article written by Rielage, he states that volunteer departments cover over 70 percent of the area in the United States, although few of them cover major populated areas. The overall increase in the population of the US has not given them a corresponding increase of dedicated volunteer personnel. While the dwindling numbers of active volunteer firefighters is not new, there now appears to be a growing shortage of quality Firefighter candidates in the part-time and career ranks (Rielage, 2017).

In an article written by Knight, he discusses that some fire departments are deploying alternative staffing models. This concept of deploying based on risk is not new; most fire departments intuitively understand that greater risk should correlate to greater resources and capabilities. A simple alternative staffing model is to staff during peak incident times. This deployment strategy has proven successful for several reasons; most notably is the distribution of demand during the day and across the geographic service area. If a department’s call volume

rises by just five percent each year, and the majority of calls occur between 8 a.m. and 8 p.m., then a preponderance of the five percent growth will be concentrated between 8 a.m. and 8 p.m. as well (Knight, 2018).

In an article written by Hubbard, he states that a common practice is to cross staff apparatus. A crew of three or more may take the ambulance or the engine to incidents based on the type of incident. Cross-staffing can be defined as using existing personal from a fully staffed X to staff a Y (Hubbard, 2018).

In an article written by Lexipol, it states that “Some departments are cross-staffing engines with tankers or tenders, trucks with rescues, or any combination with specialty equipment”. The relationship between deployment of resources, response time and positive outcomes is circular (Lexipol, 2020).

In an article written by Whitmore, he states that two fire departments share personnel. San Marino and South Pasadena Fire Departments both in California share personnel. This started in 2017 where both departments started out sharing command officers. In 2018, both departments started to share personnel. The article states that both fire departments are similar in size, almost mirror the same policies and procedures, and have identical deployment of resources. If one department cannot fill a vacancy, personnel from the other department are called and offered the shift (Whitmore, 2018).

In a feasibility study to form a fire and EMS district written by Ret. Fire Chief Stan Crosley of the Ohio Fire Chiefs Association, he wrote a 57-page document that was between Whitehouse, Waterville, and Waterville Township. The in-depth study between the three communities evaluated staffing, equipment, budgets, fire prevention, call volume, and risk management. The

study concluded that it was feasible to form a district. Waterville and Whitehouse have their own fire departments, while Waterville Township does not; they currently contract with both Waterville and Whitehouse to cover fire and EMS emergencies. The document gave two recommendations and several funding models. The fire and EMS district would not save the citizens money in the beginning. However, it would better protect the citizens (Crosley, S. 2019)

In an article written by McGrath, he talks about different forms of consolidation. Fire and EMS consolidation can raise anxiety in many people though. However, many people view it as a money saver and a means to improve services to citizens. There are many types of consolidation such as.

- Administrative - Departments remain legally separate but consolidate administrative/staff functions - i.e. a single Fire Chief.
- Functional - Departments remain legally separate but perform special functions as if a single consolidated department - i.e. apparatus maintenance, training officer, etc.
- Operational - Departments remain legally separate but join together both administratively and/or operational functions, delivering services as if they were one with boundaries becoming invisible.
- Full - Two departments legally become a single legal agency with taxing authority with boundaries becoming invisible. Currently this is not legally allowed in Wisconsin unlike many states.
- Merge - One department absorbs the other, resulting in a single entity.

Once the type of consolidation is agreed upon through political parties, legislation between the affected municipalities is authorized, A funding mechanism is then created. In the Administrative, Functional and Operational model the departments remain separate. However, departments operate closely during both incident and non-incident activities. After an outcome is clearly defined, entities inventory the assets of each department and identifying areas of unneeded duplication. Most departments already have mutual/automatic aid agreements with their neighbors. Functional consolidation just expands the concept of mutual/automatic aid to an everyday concept (McGrath, 2018).

In an article written by Harwig, he states that volunteerism is dropping to an all-time low. Many volunteer firefighters simply do not have the time anymore to keep up with all of the training. Years ago, a volunteer firefighter only needed to worry about one discipline. Now there is a whole plethora of disciplines. This includes fire, EMS, hazardous materials, with specialties such as fire investigations, inspector continuing education, and instructor continuing education (Harwig, 2009).

The Red Ribbon Report states that combination departments vary greatly and should continue to adapt to the ever-changing needs of the community. Departments have “Too many jobs, too little time”. Departments’ cannot provide fire prevention, public education or inspection responsibilities because of training and response demands occupy the time volunteers have to commit (The Red Ribbon Report: Leading the Transition in Volunteer and Combination Fire Departments, IAFC).

Volunteer firefighters may feel that they are being over stretched in every direction. The volunteer model has changed; Whitehouse for example, a member that was hired in 2014 may

have been able to make 60% of the total call volume. In 2019, that same individual may see a lower percentage. Their incident participation has not changed in six-years; they are still participating in the same number of incidents. However, the total number of incidents has increased to the point that the same volunteer simply cannot keep up with incident trends.

In an article written by Davidson, he states that the number of volunteer firefighters has rapidly declined over the past several decades. Many fire service veterans blame this decline on changes to the volunteer firefighter system over the last 30 years, including the increase in training requirements, time demands, and call volume. There's truth to this beyond the tales of seasoned firefighters (Davidson, 2018).

Whitehouse has seen an increased number of concurrent incidents over the last six-years (Appendix N). A concurrent incident is an incident that is dispatched while a crew is handling the original incident.

In an article written by Jakubowski, he states that concurrent incidents are difficult to handle with limited resources. Each concurrent incident requires separate management and forward thinking of pre-planning to handle the incident safely. Ultimately responders should be able to take care of each one individually and the same goes for our mutual-aid partners (Jakubowski, 2018)

In an article written by Fitch, he states that when there are concurrent incidents, area fire departments leaders use mutual aid to handle the incident. Every community is different. Careful thought and planning are required when considering future service delivery. Consistent data, realistic response goals and developing staffing patterns to meet demands are all critical points to examine according to (Fitch, 2019).

In an article written by Merrill, she states that fire departments must have a plan in place to relocate response resources to ensure the best coverage. Effective response times to incidents. The relationship between deployment of resources, response time and positive outcomes is circular. If fire department response times and effective response force assembly times are low, it is more likely that sufficient resources have been deployed, which is associated with more positive outcomes from risk events. Conversely, if response times and effective response force assembly times are high, it is more likely that insufficient resources have been deployed, which is associated with more negative outcomes. (Merrell, 2019).

The business model has changed in the fire service. When residents call 911, they are expecting a service at their doorstep within a moment's notice. Since cardiac disease is the leading cause of death in the US (CDC), patients need to have trained crews at their doorstep within minutes. For patients to have the best outcome, they need to arrive in the Emergency Room (ER) within 30 minutes and have an ER to cardiac Catheter Lab intervention time of 90 minutes or less for patient experiencing a ST Segment Elevation Myocardial Infarction (STEMI) (AHA 2016). On the other hand, other research shows 30 years ago, a person had about 17 minutes to escape a house fire. Today that number has decreased drastically to only three or four minutes. The reason: Newer homes and furniture inside burn faster because of synthetic products in furniture, and smaller dimensional lumber that houses are built from (Rossen, J and Davis, J. 2016). These statistics are alarming. Crews are already behind when being dispatched to incidents. Not having enough personnel to respond to these types of incidents is not only catastrophic; it is also a disservice to the residents of the communities.

In summary, this Literature Review has pointed out positive effects on different types of staffing deployment models that fire departments use. Each fire department operates differently, therefore, a 24/48 work schedule may work for some departments; however, a 12 hour or 24/72 may make operations safer to work for other departments.

PROCEDURES

At the start of this research project, four research questions set the focus of this study. The following research questions were generated: 1. What level of service can the citizens of Whitehouse expect to receive with the current staffing model? 2. How does the WHFD staffing model compare with other similar fire departments of similar size? 3. What alternative staffing models is applicable to supplement WHFD personnel at incidents on nights and weekends? 4. How can the Whitehouse Fire Department meet the needs of concurrent incidents during weeknights and weekends.

Data from 2014 to 2019 was gathered from scheduling software and Emergency Reporting incident response software. Data focused on incident deployment on weekdays from 5 p.m. to 7 a.m. and from Saturday at 7 a.m. to Monday at 7 a.m. “When to Work” was used to track statistics based on the hours that the fire department was staffed with two on-duty personnel and then unstaffed with on duty personnel. In 2014 to 2018, personnel should have worked 28,288 hours. Then in 2018-2019, personnel should have worked 34,944 hours. (Appendix P). “Emergency Reporting” provided response times to incidents (Appendix Q) (Appendix R) (Appendix S) and (Appendix T) the average number of incidents on the weeknights and

weekends (Appendix U) and (Appendix V). Then the average number of volunteer personnel during an incident response (Appendix W) and (Appendix X) was evaluated.

Research papers related to fire department staffing were gathered from the National Fire Academy (NFA) Executive Fire Officer (EFO) program and the Ohio Fire Chiefs Association (OFCA) Ohio Fire Executive (OFE) archived research projects.

The author created and distributed two surveys that were sent to fire departments in Ohio. Before full distribution, there was a “test” survey sent to Monclova Fire, Maumee Fire, Swanton Fire, and Waterville Fire. After positive feedback from the departments listed above, the rest of the surveys were sent to the remaining fire departments in Fulton, Lucas, and Wood Counties. Surveys were based on staffing models with full-time, part-time, and volunteer personnel. The first survey was emailed to all fire departments in Fulton, Lucas, and Wood County to see if there were staffing deployment differences between the three counties. The first survey was called “Neighboring Fire Department Staffing Survey” (Appendix Y). This 20-question survey was sent to 43 fire departments and asked questions based on fire department demographics and staffing deployment models. The second survey, “Ohio Fire Department Staffing Survey” (Appendix Z) was emailed to 25 fire departments meeting the following criteria:

- Combination fire departments similar to Whitehouse.
- Population size between 5,000 to 25,000 residents.

This survey contained 27 questions about fire department demographics, staffing levels, and response to concurrent incidents. Two surveys were sent to a total of 63 fire departments in Ohio using Microsoft Forms.

Survey 2 resulted in 13 surveys returned. Between the two surveys sent, there were a total of 68 fire departments contacted, with 33 departments that returned the surveys. This represented a 48% return rate. Both surveys and instruction letter were sent out on June 19, 2020 (Appendix AA) (Appendix BB) (Appendix CC). All departments were asked to have surveys back to the author by July 3, 2020. If fire departments in Fulton, Lucas, or Wood counties were asked to fill out the first survey, they were not asked to fill out the second survey. The information from the surveys was used to compare staffing deployment between fire departments in Ohio.

After the results are back, the author will be able to see how other fire departments are staffing incidents and how concurrent incidents are handled. Once the results are compiled, the author will then make a recommendation to the Fire Chief on the alternative staffing strategies based on the facts from the research. At the end of the project, if approved by the Fire Chief, a presentation will be given to Village Council for recommendations for operational changes.

Definitions

Automatic Aid: Fire departments that have written agreements to cross jurisdictional boundaries to respond to certain types of incidents to assist fire departments automatically.

Back Fill: An open position that a firefighter/EMT or firefighter/paramedic picks up if a full-time employee is off.

Center Disease Center (CDC): The Centers for Disease Control and Prevention, the US agency charged with tracking and investigating public health trends. A part of the US Public Health Services (PHS) under the Department of Health and Human Services (HHS), the CDC is based in Atlanta, Georgia. It publishes key health information, including weekly data on all deaths and diseases reported in the US and travelers' health advisories. The CDC also fields special rapid-response teams to halt epidemic diseases.

Concurrent Incident: An additional incident that occurs while crews are still on scene handling the previous incident.

Cross Staffing: Personnel that staff apparatus based on incident type.

Department of Labor: The Department of Labor is a U.S. cabinet-level agency responsible for enforcing federal labor standards and promoting workers' wellbeing. Currently, the Department is headed by Secretary Alexander Acosta.

Emergency Reporting: Reporting software that tracks fire and EMS reports.

EMS On Call: An Emergency Medical Technician (EMT) or paramedic that lives within the Village of Whitehouse and receives \$5.00 per hour to respond to the fire station for incidents. Once an incident is dispatched, the employee makes an hourly rate in addition to the standard \$5.00 per hour.

Federal Emergency Management Agency (FEMA): The Federal agency under which the NFIP is administered. In March 2003, FEMA became part of the newly created U.S. Department of Homeland Security.

Fire on Call: A firefighter that lives within the Village of Whitehouse and receives \$5.00 per hour to respond to the fire station for incidents. Once an incident is dispatched, the employee makes a hourly rate in addition to the standard \$5.00 per hour.

Full-Time Firefighter: A firefighter that works on a 24/48 schedule. This firefighter receives a benefit package and the employees' hourly rate is based on 2090 hours per year.

Life Squad: An advanced life support apparatus that can be dispatched anywhere in Lucas County. This apparatus is always staffed with two (2) Lucas County credentialed paramedics. Lucas County purchases and maintains this unit. Lucas County supplements the Village of Whitehouse on an annual basis to employ six (6) firefighter/paramedics.

Mutual Aid: Fire departments that cross jurisdictional boundaries and assist other fire departments when requested.

National Fire Protection Agency (NFPA): The National Fire Prevention Association (NFPA) is a global, non-profit organization that promotes safety standards, education, training, and advocacy on fire and electrical-related hazards. Established in 1896 as a way to standardize the use of fire sprinkler systems, the NFPA's scope grew to include building design, rescue response, electrical codes, and other safety concerns.

Occupational Safety and Health Association (OSHA): An agency of the US government under the Department of Labor with the responsibility of ensuring safety at work and a healthful work environment.

Part-Time Firefighter: A fire department employee who fills in as needed for full-time employees and cannot work more than 1500 hours during the year or an average of 29 hours per week.

Volunteer: Members in this position respond to the fire station for incidents when incidents are dispatched out via fire pagers. These members are not scheduled to work. However, they are paid a hourly rate for incidents. Employees are paid quarterly for their responses, training, and events.

When to Work: Scheduling software program that tracks hour worked and hours that were taken off by employees. The data base is designed by each entity that uses it.

Limitations of the Study

There were some limitations during this study. While performing research, some incident data was difficult to obtain. The fire department switched from Firehouse Software to Emergency Reporting in 2013. Even though research was from 2014 through 2019, some data that was needed was not able to be extracted from the reporting system due to bad data entry. After 2015, ongoing training was provided to all employees on the use of Emergency Reporting so that there is solid data. To verify incident numbers, Mobile Data Terminal (MDT) was used in some situations. However, the software vendor for CAD changed in late June of 2014, and the old CAD software could not be accessed.

To track the total number of hours an employee worked, scheduling software called Crew Sense was used in 2015. In the third quarter of 2015, the fire department changed scheduling software vendors due to ease of use, and the new software had an easier mobile platform. A program called “When to Work” is now used. This software is used to track working hours for all employees and time off for full-time employees. When a part-time employee had time off or called off, these hours were not tracked until 2020.

The last limitation is fire departments that consider themselves “combination” fire departments. When the author emailed the Ohio Fire Chiefs Association, there were 25 “combination” fire departments in Ohio with that protect populations of 5,000 to 25, 000 citizens. There should be more fire departments in Ohio that meet this criterion. Unfortunately, there are many fire departments in Ohio that should be classified as “combination fire departments”, because they staff with part-time firefighters and supplement with volunteer firefighters. However, those fire departments still are classified as volunteer fire departments.

RESULTS

The Whitehouse Fire Department will be able to improve the safety of its community and its firefighters by adding trained staff on incidents during weeknights and weekends. A literature review, two external surveys, and data from internal staffing and record-keeping software were used for data collection. This research gave insight to four research questions: 1. What level of service can the citizens of Whitehouse expect to receive with the current staffing model? 2. How does the WHFD staffing model compare with other similar fire departments of similar size? 3. What alternative staffing models is applicable to supplement WHFD personnel at incidents on nights and weekends? 4. How can the Whitehouse Fire Department meet the needs of concurrent incidents during weeknights and weekends? Below are the answers to each of the four research questions that were asked.

Research Question #1

What level of service can the citizens of Whitehouse expect to receive with the current staffing model?

As mentioned in previous sections, the fire department is uniquely staffed. The fire department staffs 1 of 11 County funded life squads with two full-time FF / paramedics 24-hours a day (Appendix DD) (Appendix EE). Personnel on the County funded life squad cannot engage in firefighting activities. The fire department also staffs the fire side with one full-time FF / paramedic and one part-time FF / paramedic or FF / EMT 24-hours a day. When there is a shift opening, part time personnel work the open shift if available. If no one is available to work, the shift will remain open and the training Captain, Deputy Chief, or Chief will fill the vacancy. Incidents are then heavily relied upon with volunteer firefighters to assist with handling the call.

Currently the fire department does not have a forced in policy unless staffing falls below two FF / paramedics on the County funded life squad. In 2019 there were a total of 261 weekdays on the calendar. During this time, on-call personnel were utilized for 41 twelve-hour shifts during the weeknights (Appendix FF). There were 104 weekend days in 2019. Out of those days, on call was utilized 42 times or on average 40% of the time (Appendix GG).

In 2014 there was an average of 0.7 personnel on the schedule throughout the year during weeknights from 5 p.m. to 7 a.m. In 2019, the average number of personnel increased to 1.7. On the weekends, the average number of personnel went from 0.1 in 2014, to 1.57 in 2019. The average personnel count increased from adding the part time position in 2018. This number increased because the department started to backfill time off positions in 2018.

In 2014, the medic unit had an average response time of 11 minutes when the department was short staffed on the weeknights (Appendix HH), then 9 minutes when the department was fully staffed (Appendix II). In 2019, the medic unit had an average response time of 9 minutes when the department was short staffed, then 6 minutes when the department was fully staffed. The medic unit's response time was 2 minutes faster when short staffed in 2019 than 2014. Then 3 minutes faster in 2019 than 2014 when fully staffed. On the weeknights, engine responses were 8 minutes in 2014, then 10 in 2019 when short staffed (Appendix JJ). When fully staffed on the weeknights, engine responses were 9 in 2014, then 7 in 2019 (Appendix KK). Engine responses increased by 2 minutes when short staffed. However, response times decreased by 2 minutes when fully staffed.

In 2014 on the weekends from Saturday at 7 a.m. to Monday at 7 a.m. the medic unit had an average response time of 9 minutes when the department was short staffed (Appendix LL), then

9 minutes when the department was fully staffed (Appendix MM). In 2019, the medic unit had an average response time of 9 minutes when the department was short staffed, then 9 minutes when the department was fully staffed. During this time frame, the medic unit response time remained the same when short staffed and full staffed. The medic unit's response time was 2 minutes faster when short staffed in 2019 than 2014. Then 3 minutes faster in 2019 than 2014 when fully staffed. On the weekends, engine responses were 8 minutes in 2014, then 10 in 2019 when short staffed (Appendix NN). When fully staffed, engine responses were 9 in 2014, then 7 in 2019 (Appendix OO). Engine responses increased by 2 minutes when short staffed. However, response times decreased by 2 minutes when fully staffed.

With the current staffing model of two FF / EMT's or FF / paramedics on the fire department side, only the initial emergency medical service (EMS) incident may be handled on the weekdays from 5 p.m. to 7 a.m. and on the weekends from Saturday from 7 a.m. to Monday at 7 a.m. If there is a need for an engine response, the crew will wait until a volunteer firefighter responds to the station then respond to incidents on the engine per department policies and procedures with a minimum of three personnel (Whitehouse Fire Department Response Minimum Staffing on Apparatus 2019). If a fire officer or Chief Officer is on scene of an incident when an engine response is needed, the engine may respond to the incident with two personnel. The fire officer will become part of the engine crew on scene.

Research Question #2

How does the Whitehouse fire Department staffing model compare with other similar fire departments of similar size?

A total of two surveys were sent out to 68 departments in Ohio. The first survey, *Neighboring Fire Department Staffing Survey* was sent to 43 departments. There were 20 departments that returned the survey. In the survey, the following questions were answered.

1. Does the fire department that you represent have volunteer firefighters on the roster?

All 20 fire departments answered this question. Thirteen departments or 65% of the fire departments have volunteers on them. Whitehouse Fire also utilizes volunteer firefighters. Currently there are 18 volunteer firefighters on the roster.

2. How are volunteer firefighters utilized?

Ten departments or 77% of the departments surveyed utilize volunteers for the initial incident. One department or 8% utilize volunteers for additional incidents. Whitehouse Fire Department utilizes volunteer firefighters for both initial and additional incidents.

3. How many individual hours per employee is the fire department that you represent staffed with firefighters per week?

There were 9 departments or 45% of the departments that have personnel work on a 24/48 rotation. This equates to an average of a 56-hour work week. Five departments utilize 24-hour staffing using part-time personnel in 12-hour blocks. Whitehouse Fire Department utilizes a total of three personnel between the life squad and fire side on an ABC rotation working the 24/48 shift model. Then one part-time employee works on a 24/192 shift rotation. This averages out to be 24 hours per week per employee that works the 24/192 rotation.

4. What are the minimum number of firefighters assigned per shift at the fire department that you represent?

Out of the departments surveyed, twelve departments or 60% of the departments are staffed 24-hours a day with 3 or less personnel. Three departments or 15% utilize staffing with 3-5 personnel. Two departments or 10% have 5-10 personnel per shift, and three departments or 15% utilize 10 or more personnel for staffing deployment.

The second survey (*Ohio Fire Department Staffing Survey*) was sent to 25 fire departments.

There were 13 surveys returned, the following questions were answered.

1. Does the fire department that you represent have volunteer firefighters on the roster?

Out of the 13 departments that answered this question, 10 departments or 76% of the departments said that they have volunteers on them. Three departments do not utilize volunteer firefighters. As mentioned in the above content, WHFD utilizes volunteer firefighters.

2. How are volunteer firefighters utilized?

There were 2 departments or 30% of the fire departments that utilize volunteers for the initial incident. There were 3 departments or 20% of the fire departments that utilize volunteers for additional incidents. Then 5 departments or 50% of the fire departments indicated “other” on the survey. “Other” meant that three departments utilize volunteers for initial incidents, and two departments have volunteers sign up to work shifts every month.

3. What is the minimum number of firefighters assigned per shift at the fire department that you represent?

There were 2 fire departments or 16% of the departments surveyed that staff Fire departments with 3 or less personnel. There were nine departments or 65% of the departments that staff with 3-5 personnel. There are two departments or 15% of the departments that staff with 5-10 personnel.

4. What is your staffing deployment model at the fire department that you represent?

There were nine departments that staff their fire departments utilizing the 24/48 ABC rotation shift model. One department staffs in 8-hour blocks. Then one department that staffs in 12-hour blocks. There were two departments that utilize the California Swing. This type of shift utilizes personnel on duty 24 hours on, then off for 24 hours then back on with the on-off-on for five shifts before having 96 hours off.

In summary, Whitehouse Fire Department's staffs less on-duty personnel than 80% of the fire departments surveyed. The department staffs with fewer on-duty employees making volunteer participation on incidents an essential part of its operations.

Research Question #3

What alternative staffing models are applicable to supplement Whitehouse Fire Department personnel at incidents on nights and weekends?

The first survey that was sent out (*Neighboring Fire Department staffing Survey*) indicated that 18 departments or 90% of the departments surveyed staff their fire departments 24-hours a day using a combination between 8-, 12-, and 24-hour shifts. The second survey (*Ohio Fire Department Staffing Survey*) indicated that 7 fire departments or 53% of the departments utilized the 24/48 shift model. One department utilized the 8 – hour shift, and one department utilized the 12 – hour shift. It is interesting to mention that one of the fire departments surveyed, utilize volunteer firefighters for on duty staffing. One firefighter must work a minimum of 24 hours a month. In addition, a volunteer firefighter working a shift does not count toward minimum staffing.

In order for an additional 8, 12, or 24 hour position to be approved, Village Council would need to approve legislation in order for shifts to be covered without having to rely on volunteer personnel for the initial incident. A less expensive option would be to Fund an on-call position on the weeknights and weekends. An on-call position would save the Village money. However, this type of staffing deployment relies on the volunteer core for the initial response. Volunteer staffing does not guarantee availability.

Research Question #4

How can the Whitehouse Fire Department meet the needs of concurrent incidents during nights and weekends?

Two surveys were sent out to 68 departments in Ohio. There were 33 departments or 48% of the departments that returned surveys. In the first survey, *Neighboring Fire Department Staffing Survey*, the following question was asked.

1. What does your organization do to handle concurrent calls for service?

Five fire departments cover the concurrent incident with volunteer firefighters. There were 7 departments that cover the incident with mutual aid. There were 8 departments that used the “other” category. Investigating further, 5 departments attempt to cover the incident with volunteer firefighters, while 3 departments dispatch mutual aid as soon as the department is dispatched out.

In the second survey called (*Ohio Fire Department Staffing Survey*) the following question was answered.

2. What does your organization do to handle concurrent calls for service?

One fire department covers the concurrent incident with volunteer staffing. There were four departments that cover the incident with mutual aid. There were eight departments that used the “other” category. Investigating further, one department will attempt to cover the incident with volunteers. If volunteer coverage is unsuccessful, mutual aid is called. In the “other” category, seven departments cover the incident with mutual aid when the incident is dispatched.

Based on Emergency Reporting data from 2014 through 2019, personnel have seen a 10% increase in concurrent incidents in the last five years. In 2014, the fire department responded to 5.3% concurrent incidents. In 2019, there were 15.38% concurrent incidents. As stated earlier, a concurrent incident is one that is dispatched while crews are handling the initial incident.

Based on Whitehouse statistics, Whitehouse personnel will need to utilize mutual aid to handle concurrent incidents if the station is not staffed with stand-by personnel while the initial incident is being handled. This decision will need to be on a case- by-case basis.

If a concurrent incident is dispatched, the incident is handled if enough volunteer personnel are at the fire station on stand-by during the initial incident. If there is only one person at the station, that firefighter will respond to the incident in a support vehicle with EMS equipment and will then call to request mutual aid to respond with two EMT's.

DISCUSSION

“Adequate staffing deployment on incidents across the United States is struggling” (Vock, 2018). Whitehouse Fire Department is a growing department in a growing community with a growing staffing deployment issue. After the 2020 census is completed, Whitehouse is projected to have over 5,000 residents. This means that the village is on track to become a city. Cityhood status is currently in the planning stages. In addition to community growth, personnel have seen an increase in demand to answer calls for service.

This research has encouraged the author to find a solution to a growing problem. While performing research, it was difficult to find other research papers on the same exact issue. Each fire department is unique regarding the number of employees, population size, and / or number of square miles that a single fire department protects. Whitehouse will guarantee an initial EMS response 24 hours a day. However, Incidents that occur on weeknights and weekends that require an initial engine response, or a concurrent incident response may not be handled due to the

current staffing model. To guarantee an engine or concurrent response, the fire department may need to hire additional staffing, or ensure volunteer deployment when needed.

“Fire departments in smaller communities are struggling because of staffing shortages and diminished budgets” (Starnes, 2019). Out of the fire departments surveyed 65% of the neighboring departments and 77% of the Ohio fire departments have volunteers on them. As a whole, 90% of the fire departments surveyed are considered combination fire departments. This means that the departments staff a combination of volunteer, and part-time, or volunteer, part-time, and full time. An interesting fact that the author found was that some fire departments that operate as combination fire departments are still listed in the directory through the Ohio Fire Chief Association as volunteer fire departments (Whitehouse is one of them). Overall, incidents have increased 33% over the last six-years. In 2014, 61% of the total incidents occurred after 5 pm. Out of those, 33% occurred on the weekends (Emergency Reporting, 2020). In 2019, 55% of the total incidents occurred after 5 pm. Out of those, 37% occurred on the weekends (Emergency Reporting, 2020). In the last six-years, the amount of volunteer firefighters on the roster has decreased by 18%. Now there are issues ensuring an engine response which accounts for 29% of the time and a response for concurrent incidents which is 15% of the time. The availability of volunteer firefighters is impacted by time of day. 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). Volunteers that work out of the village are typically available on both Saturdays and Sundays. Some of the volunteer work force are full-time firefighters for other fire departments, while others have Monday through Friday jobs outside the fire and EMS field. Seventy-Three Percent of the volunteers work outside of the response area (Whitehouse Fire Department Roster, 2019).

To ensure all calls are answered, there has been an increased demand put on administrative staff over the last six-years. On weeknights from 5 p.m. to 7 a.m. and on weekends from Saturday mornings 7 a.m. to Monday mornings 7 a.m. as the fire department's incidents have increased. There needs to be a staffing solution to assist on-duty personnel at incidents. In 2019, the percentage of part-time firefighters has surpassed volunteer firefighters on the roster by 44%. A recall policy was created to allow full-time and part-time firefighters to respond to major incidents when called for. To this date, few members have responded to recalls.

Davis and Aguirre said that there are many variations in shift schedules for fire departments. There were thirty-three departments returned surveys. Results found that 80% of the departments staff personnel using the 24/48 shift pattern. This type of shift pattern uses an ABC shift that repeats itself indefinitely (Business Management Systems, 2012). Personnel that work the ABC rotation work an average of 56 hours a week. Whitehouse Fire Department staffs their department 24 hours a day using one full-time FF/Medic. A second employee, a part time position also works 24 hours a day. However, the part-time position works 24/192. This type of shift averages out to be 29 hours a week, and less than 1,500 hours a year.

Some fire departments' use "Kelly Days" (Varone, 2018). This is scheduled time off that may be paid or unpaid. Usually, departments that pay their firefighters on an hourly basis use unpaid "Kelly Days", and departments that pay their firefighters a salary have paid "Kelly Days" incorporated into their salary. It is unknown how many departments surveyed use "Kelly Days". Another question that was not asked is if the departments use paid or unpaid "Kelly Days". A "Kelly Day" occurs every 18 - 21-day periods or approximately a minimum of every 6th shift.

Two departments that returned surveys staff their departments using an 8 or 12-hour shift. Out of the departments surveyed, none of them use the 24/24 or the 24/96. Two departments in adjacent communities (Springfield, and Maumee) staff their departments using the 24/72 shift model.

Many entities are creating mutual and automatic aid agreements with adjacent jurisdictions (National Fire Protection Agency [NFPA], 2016). Out of the fire departments surveyed, 95% of the departments use both automatic and mutual aid agreements with neighboring communities. These agreements are used for incidents such as Structure Fires, Auto Accidents, Cardiac Arrest, Water Rescues, and Hazardous Materials Incidents. Whitehouse Fire Department's does not have a strong automatic aid agreement with neighboring departments. Currently, the fire department only has an automatic aid agreement with the 180th Air National Guard and Waterville Fire for structure fires in both of the jurisdiction's respective coverage areas. This agreement only ensures an additional engine will respond. An aggressive automatic aid agreement needs to be implemented for other types of incidents, not just structure fires. An example is injury accidents. Whitehouse Fire Department can only guarantee a medic unit to respond to those types of incidents.

"A common practice is to cross staff apparatus" (Hubbard, 2016). Many of the departments that respond to both fire and EMS incidents cross staff their departments. These departments staff with three or less personnel per shift. Fire Departments that have multiple stations in communities may not cross staff apparatus. Whitehouse Fire cross staff's apparatus based on incident need. However, in order to respond in the engine to incidents, the on-duty crew will wait for a volunteer firefighter to respond on the weeknights and weekends.

The article written by Steven Whitmore in 2018 regarding personnel sharing was informative. This question was not asked in the survey. However, most of the fire departments in the Lucas County could share personnel. There are a lot of firefighters in Lucas County that work for other departments in Lucas County. One employee may work for multiple fire departments. Each department issues those employees fire gear. Fire gear may range anywhere from \$3,000.00 - \$6,000.00 depending on the type of gear purchased. Whitehouse is trialing personnel sharing. There is one employee that started at a neighboring department. Whitehouse hired the same employee in April of 2020. When the employee works for Whitehouse, they use the other municipality's gear. If the gear needs to be repaired or replaced on a Whitehouse incident, Whitehouse will take care of the repair or replacement. So far, this practice has greatly benefited Whitehouse.

In 2019 a Feasibility Study was completed by Ret. Fire Chief Stan Crosley of the Ohio Fire Chiefs Association. The Feasibility Study was between Waterville Fire Department, Waterville Township, and Whitehouse Fire Department. The document concluded that it was feasible to form a district. After the feasibility study was published, a steering committee was formed to study the document and give recommendation to the legal body of each community. Once the steering committee gave their recommendation, all three communities decided that it was not the time to form a district; there are many more ways that the communities could work together to solve a staffing issue.

It was decided by each municipality that the cost to the taxpayers was going to be unsustainable. A solution to the staffing problem could be to create a cooperative agreement (Co-Op) between the three communities. Creating the Co-Op would form an Operational Consolidation. Both Waterville and Whitehouse currently have automatic aid agreements with

each other for structure fires only. An operational consolidation could assist with more automatic aid, personnel sharing, and policies and procedures.

Mcgrath talked about consolidation, which is a new model in the fire service. Communities have joined forces to better the community while saving money. There are five types of consolidation as discussed in the Literature Review.

“Fire departments need to focus on community risk reduction” (Jackubowski, 2016). Survey results showed that 77% of the neighboring departments and 30% of the Ohio departments use volunteers for the initial response. However, if departments are having a hard time deploying resources for concurrent incidents, mutual aid from neighboring communities are used. Mutual aid was designed to assist other communities in need. It was not designed to deploy resources from one community to another community to handle their calls because of staffing shortages. Whitehouse statistics have shown an increased number of concurrent incidents in the last six-years. “When there are concurrent incidents, fire department leaders usually use mutual aid departments to handle the incident” (Rielage, 2018). This can create a negative impact on fire departments providing mutual aid, because it is taking away resources from the community that is providing mutual aid.

RECOMMENDATIONS

Based on the research, Whitehouse Fire Department has a staffing deployment issue on the weeknights from 5 p.m. to 7 a.m. and on the weekends starting on Saturday at 7 a.m. to Monday morning at 7 a.m. Since 2018, extending part-time hours has helped with staffing gaps and has ensured that Whitehouse is able to handle the initial EMS incident. From 2014 to 2019 there was an average of 788 incidents per year. This accounted for 363 incidents that occurred from 5 p.m.

to 7 a.m. on the weeknights. Then there were 165 incidents from Saturday at 7 a.m. to Monday morning at 7 a.m.

The fire department has seen a 33% increase in the number of incidents over the last six-years. After the research questions were answered and the results were back from the surveys' that were sent, there are five recommendations listed. These recommendations are not in order. Meaning any recommendation can be implemented first. These recommendations will need to be discussed with administration to find the exact funding mechanism if approved. Recommendations were based off of 2019 costs. Recommendations were also based on the following research questions provided below. Within each section of the research questions, there are answers to the recommendations.

Research Question #1

What level of service can the citizens of Whitehouse expect to receive with the current staffing model?

Based on the above question, there are a total of two recommendations made.

1. Create a minimum daily staffing policy.

Increase the daily staffing level from a total of four firefighters to five. This will allow the minimum daily staffing level to be four. If an employee is off and back fill is not successful, the open position be offered to an on-call volunteer before needed to implement a forced in policy for full-time personnel. This staffing model will allow for personnel to continue to work on the County funded life squad, and three personnel to work on the fire side. This practice will ensure that the initial EMS incident can be continued to be handled with two

personnel on the fire side, or the initial engine response to be handled with three paid on-duty personnel. Volunteer firefighters will then be able to respond to an incident in additional apparatus and assist. If there is a secondary EMS incident, the third firefighter at the fire station on stand-by will be able to wait for a volunteer firefighter to respond to the station for the additional EMS incident, or he / she may respond alone to the scene in a support vehicle to start treatment on patients.

2. Create and implement a forced in policy.

Create and implement a forced in policy for full-time employees is needed to be able to continue to provide a service that the citizens expect. A forced in policy will ensure that the station is always staffed with three personnel on the fire side, and two personnel on the County funded life squad. While going through a pre-designated list, if a full-time firefighter can-not work the open shift, then the forced in policy would be enforced. The forced in policy would be on a rotating schedule that resets very year starting in January. The forced in policy will start with the full-time individual that has the least amount of seniority to the individual with the most amount of seniority.

Research Question #2

How does the Whitehouse fire Department staffing model compare with other similar fire departments of similar size?

Based on the above question, there was one recommendation made.

3. Hire additional firefighters.

A. Hire three additional full-time firefighters. Three new firefighters would give the ability to decrease response times to incidents 24-hours a day. The cost to hire full-time employees can be expensive. However, adequate staffing is necessary to maintain a safe environment for the citizens that Whitehouse protects. The cost to hire employees varies between full-time, part-time, and volunteers. It cost \$4,734.98 to hire one full-time employee. The cost includes fire gear, background check, and physical. The annual salary for a full-time FF/ EMT is \$39,617.50 to \$54,567.50. The annual salary for a full-time FF/paramedic is \$44,012.80 to \$66,348.10 depending on step pay (Village of Whitehouse Pay Scale, 2020). The annual salary range is based on 2,990 hours which averages out to be 57.5 hours a week. Calculated within the annual salary includes benefits too.

Ultimately, the Village of Whitehouse has a \$125,000.00 allowance per employee per year to have a full-time employee. The total cost to hire three full-time employees is \$14,204.94 minus salaries.

If new full-time employees are hired within the organization from the part-time ranks, besides spending up to \$125,000 for wages and salaries, the only additional cost would be \$753.00 per employee. These employees currently have uniforms and fire gear which accounts for the other \$3,981.98.

B. Hire three additional part time personnel. Once the department hires three full-time employees from within the organization, three part time positions will then become available. The cost to hire part-time personnel is \$3,898.99 per part-time employee. The total cost to hire three part-time employees is \$ 11,696.97. If a current volunteer FF / paramedic or FF / EMT wants to work part-time shifts, there would not be an initial cost. However, these employees would not be able to work more or volunteer more than 35 hours per week on average per Village of Whitehouse Policy.

C. Whitehouse Fire Department needs to hire five additional volunteer firefighters.

Volunteers are needed to be able to assist with handling incidents, multiple incidents, or long duration incidents that require multiple apparatus will not be able to be handled with just full-time and part-time personnel. Volunteer firefighters have been the backbone of the fire department since its inception in 1896. Even though the number of incidents has increased during the day-time hours when volunteer firefighters are working outside of the organization's response area, the department is still in need of volunteer firefighters to assist full-time and part-time personnel. The department cannot rely on neighboring fire departments to handle or assist on every incident. This takes away from their own responses. The cost to hire a volunteer firefighter is \$6,089.00. This cost includes a

background check, physical, fire gear, and training. The hourly rate for a volunteer firefighter is \$12.02 to \$17.51. Collectively between all volunteers, there were 4,012.66 hours worked in 2019. This also represented \$24,842.00 in pay-roll cost for volunteer wages. The total cost to hire five volunteers is \$30,445.00. This cost includes hiring cost, fire gear, and cost for firefighter and EMT courses. The \$30,445.00 does not include payroll for volunteers.

Recommendation number 3 is costly. However, in order to ensure the quickest incident response to the residents of Whitehouse and contractual areas, hiring the needed personnel is paramount. The total cost to hire three full time employees, three part time employees, and five volunteer firefighters would be \$56,346.91 minus salaries.

Research Question #3

What alternative staffing models are applicable to supplement Whitehouse Fire Department personnel at incidents on nights and weekends?

Based on the above question, there was one recommendation made.

4. Share personnel between departments.

Share personnel between area fire departments. The first benefit is that the part-time roster would expand. The second benefit is that the cost to hire an employee decreases significantly. The initial hiring cost would be \$587.00. This cost includes the cost of the background check and physical.

Research Question #4

How can the Whitehouse Fire Department meet the needs of concurrent incidents during nights and weekends?

Based on the above question, there was one recommendation made.

- 5. Increase the amount of automatic aid with surrounding fire departments. These agreements would be for structure fires, outdoor fires, vehicle accidents, and water rescues.**

Whitehouse Fire needs to increase the amount of automatic aid with surrounding departments. Whitehouse already has automatic aid agreements with Waterville, and 180th Air National Guard. An automatic aid agreement with Providence Township and Monclova Township would mean that more apparatus and personnel will be able to respond to major incidents quicker to mitigate issues. Volunteer personnel can then respond to the incidents to assist.

There were a total of five recommendations made. These recommendations will lay a solid foundation for the next ten years of community needs for the Whitehouse Fire Department.

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Ohio: Village of Whitehouse

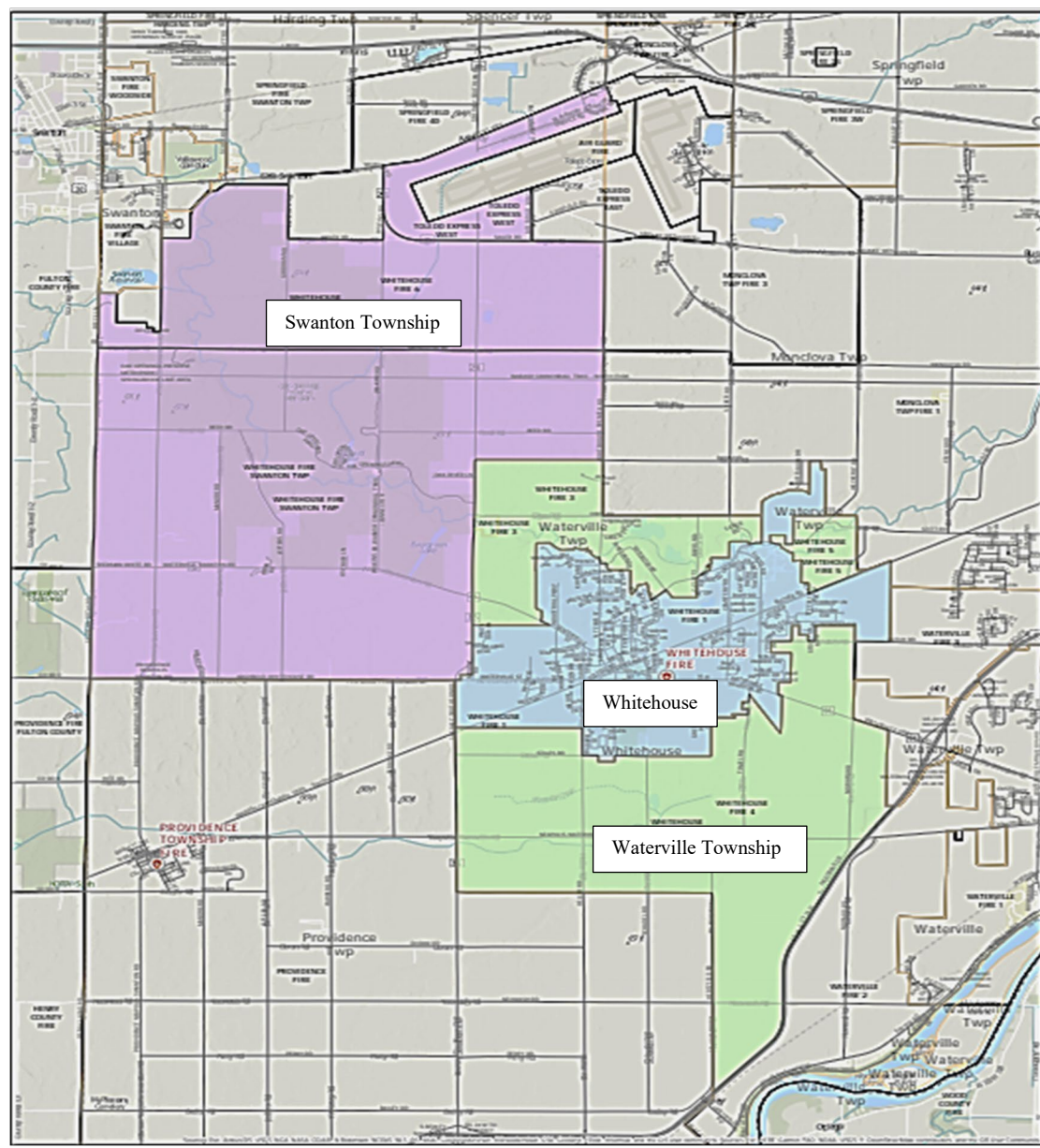
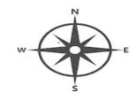
Whitehouse Fire Department. (2019) Emergency Reporting Personnel Availability Report.

Ohio: Village of Whitehouse

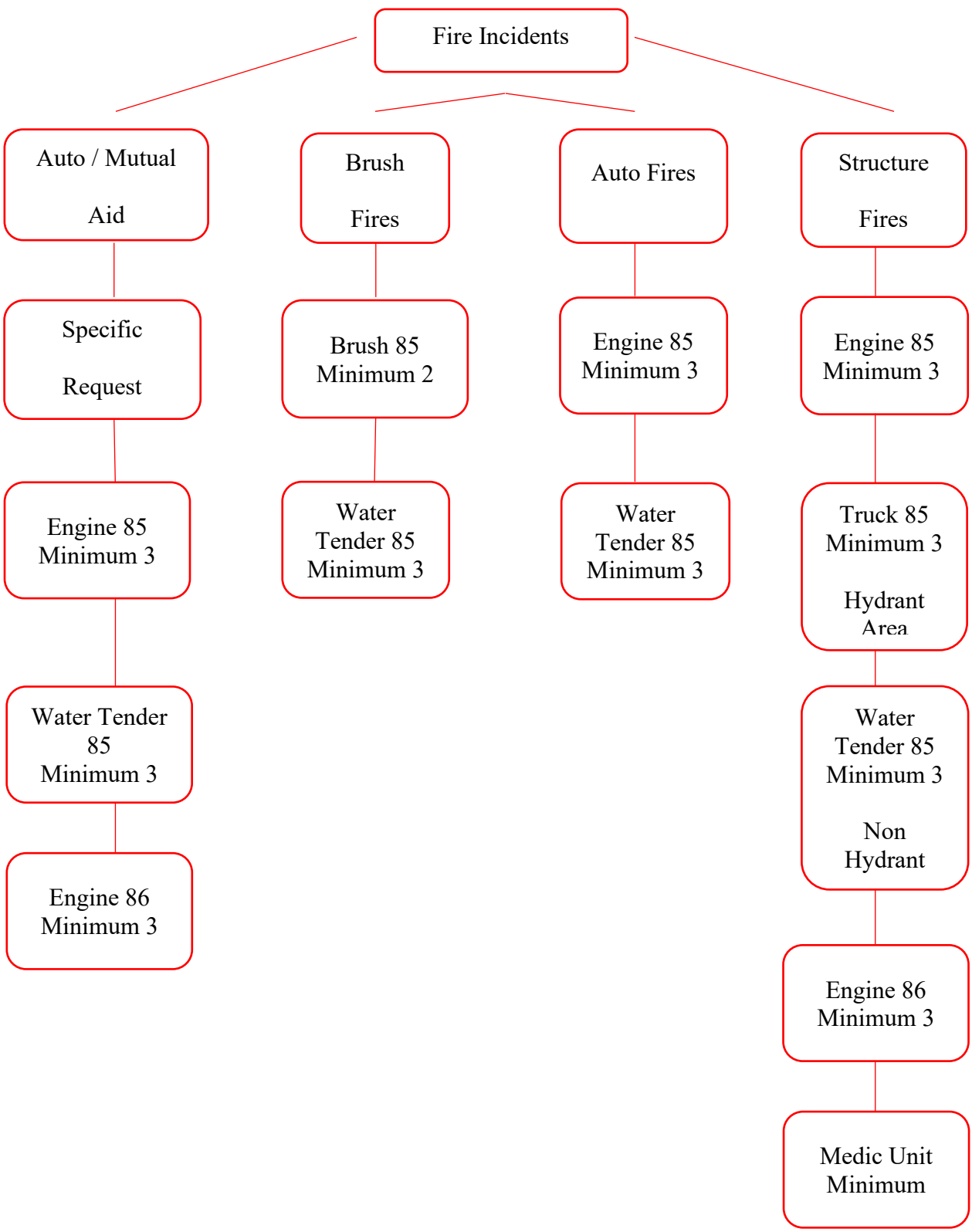
Whitehouse Fire Department. (2019) Emergency Reporting Concurrent Incidents.

Ohio: Village of Whitehouse

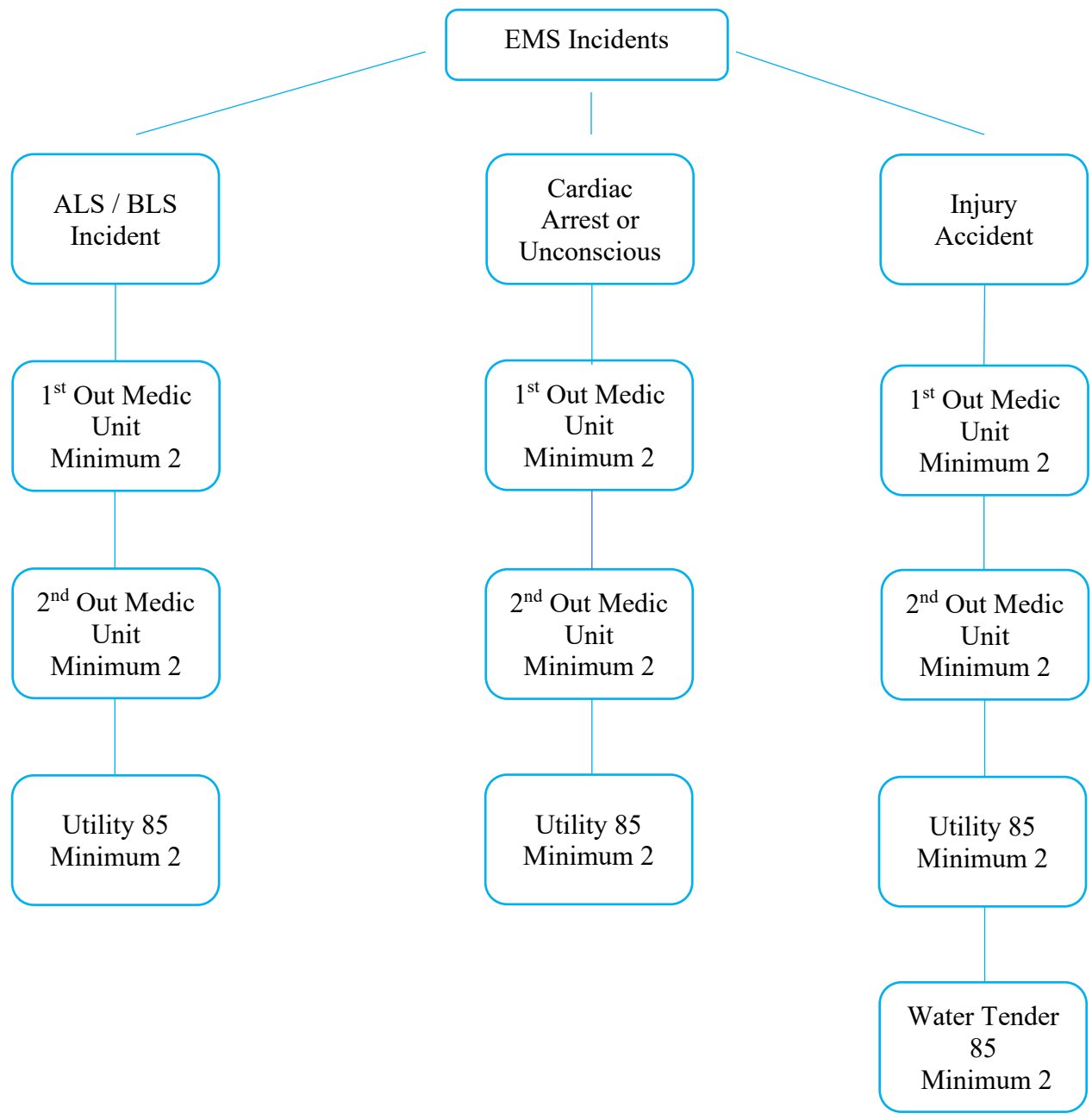
Appendix A – Map of the Village of Whitehouse, Waterville Township, and Swanton Township.



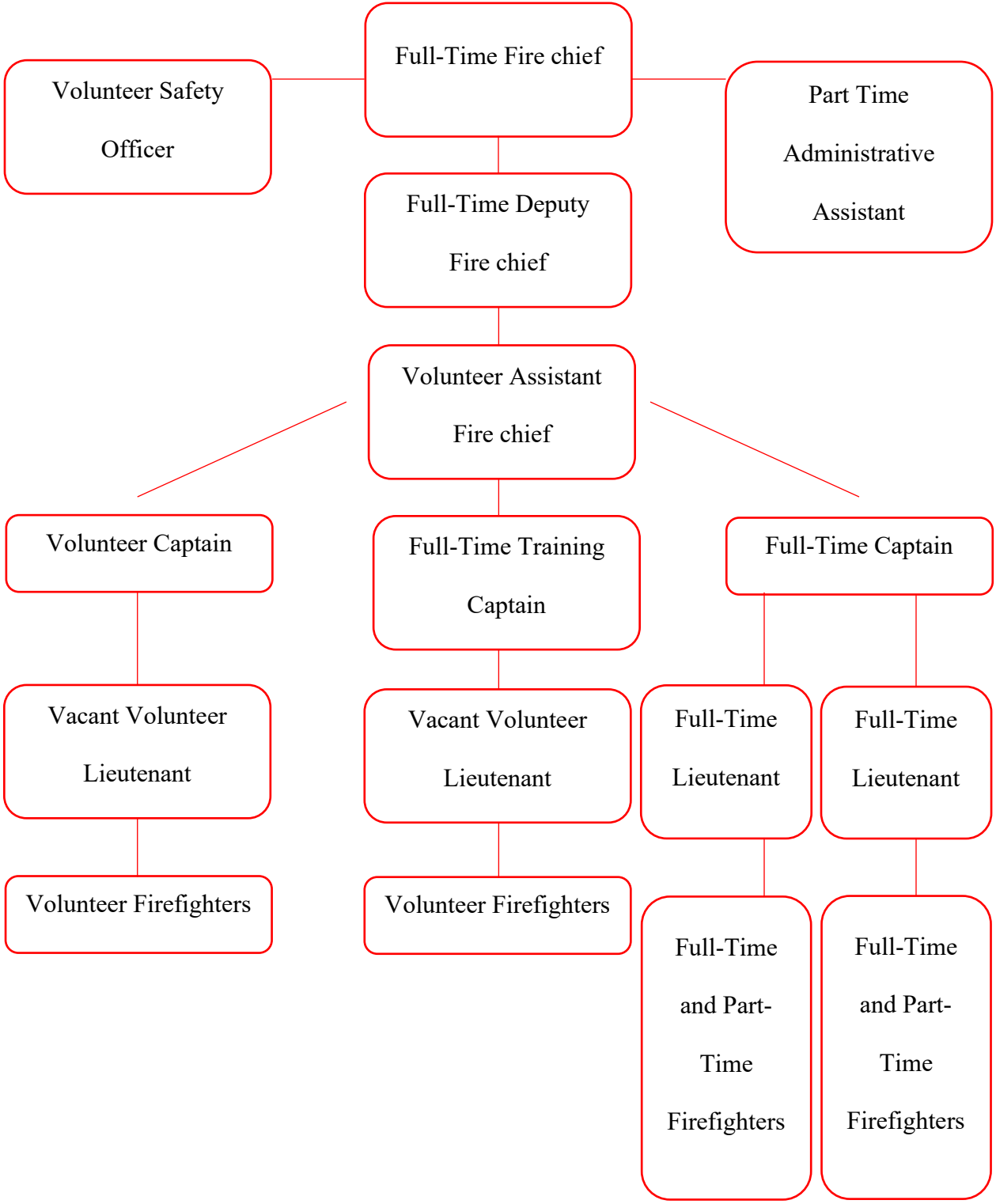
Appendix B – Response Order (Fire).



Appendix C - Response Order (EMS).



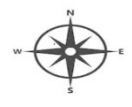
Appendix D – Chain of Command.



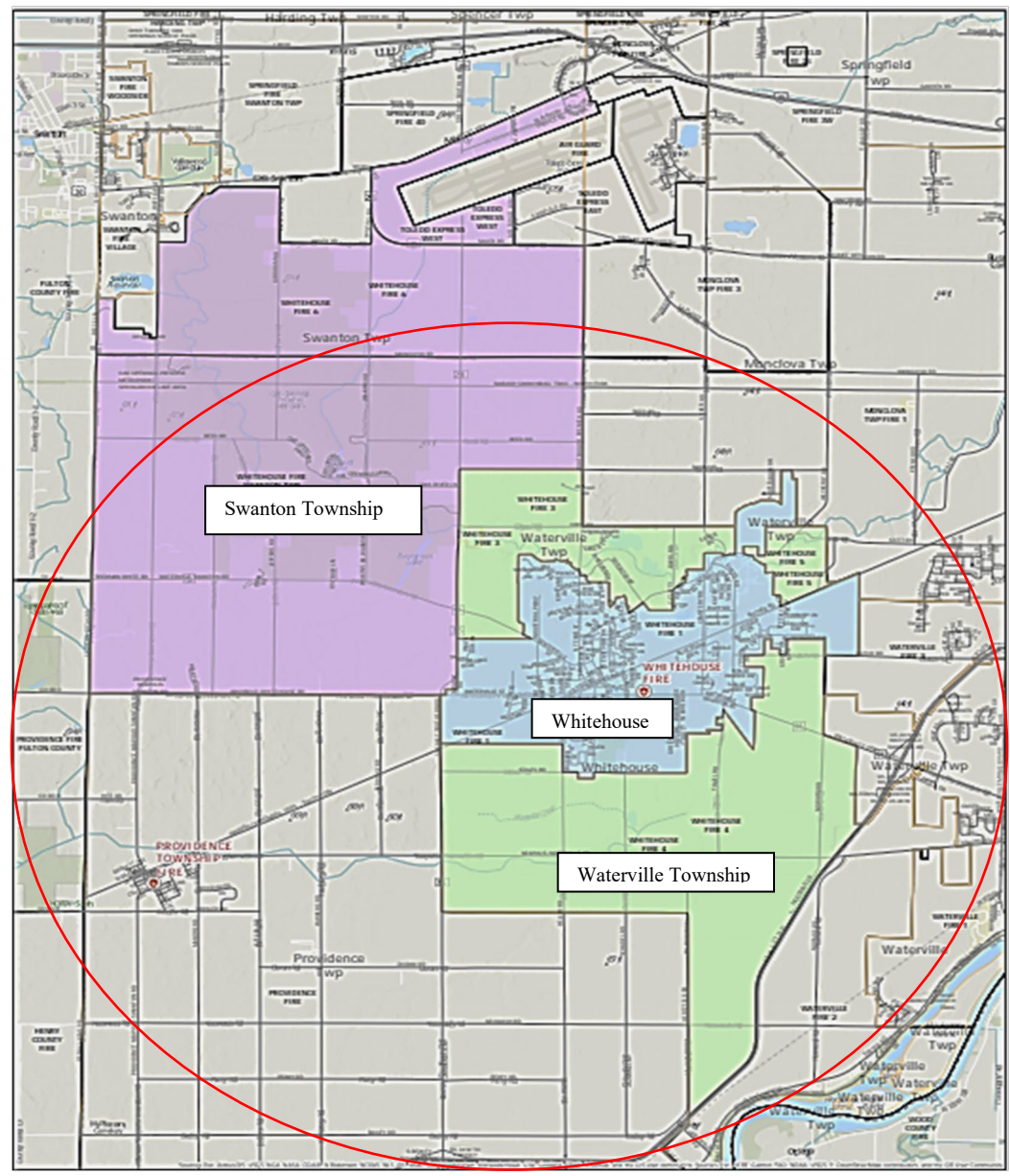
Appendix E – Life Squad Locations Based on Fire Stations.

Life Squad Number	Fire Station Location
Life Squad 1	Toledo Fire station # 5
Life Squad 2	Toledo Fire station # 6
Life Squad 3	Toledo Fire Station # 18
Life Squad 4	Toledo Fire Station # 16
Life Squad 5	Toledo Fire Station # 25
Life Squad 6	Sylvania Fire Station # 1
Life Squad 7	Maumee Fire Station
Life Squad 8	Oregon Fire Station # 1
Life Squad 9	Whitehouse Fire Station
Life Squad 10	Springfield Fire Station # 2
Life Squad 11	Toledo Fire Station # 3

Appendix F – Life Squad 9 Primary Response Area.



Note: Red indicates the primary response area for Life Squad 9.



Appendix G – Swanton Township Contract Fee for Service 2014 to 2019.

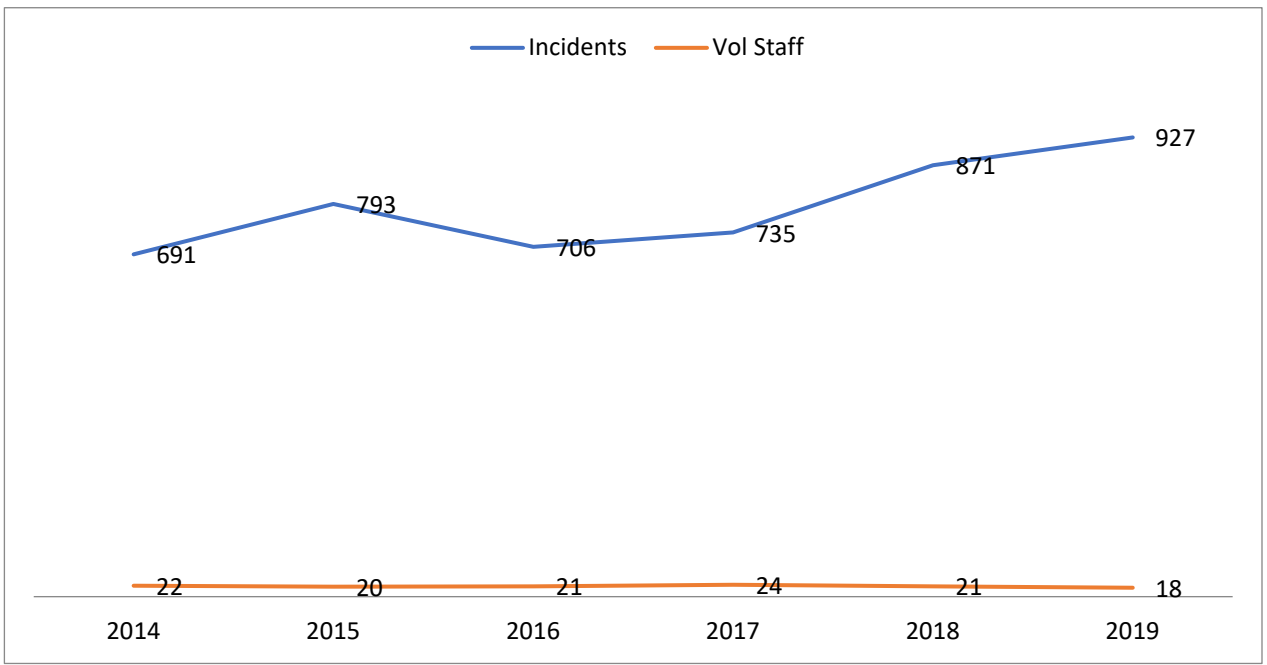
Year	Payment
2014	\$67,897.45
2015	\$69,255.40
2016	\$69,255.40
2017	\$70,640.51
2018	\$70,640.51
2019	\$72,053.42

Appendix H – Waterville Township Contract Fee for Service 2014 to 2019.

Year	Payment
2014	\$54,120.00
2015	\$54,120.00
2016	\$55,202.00
2017	\$56,376.00
2018	\$57,429.00
2019	\$57,429.00

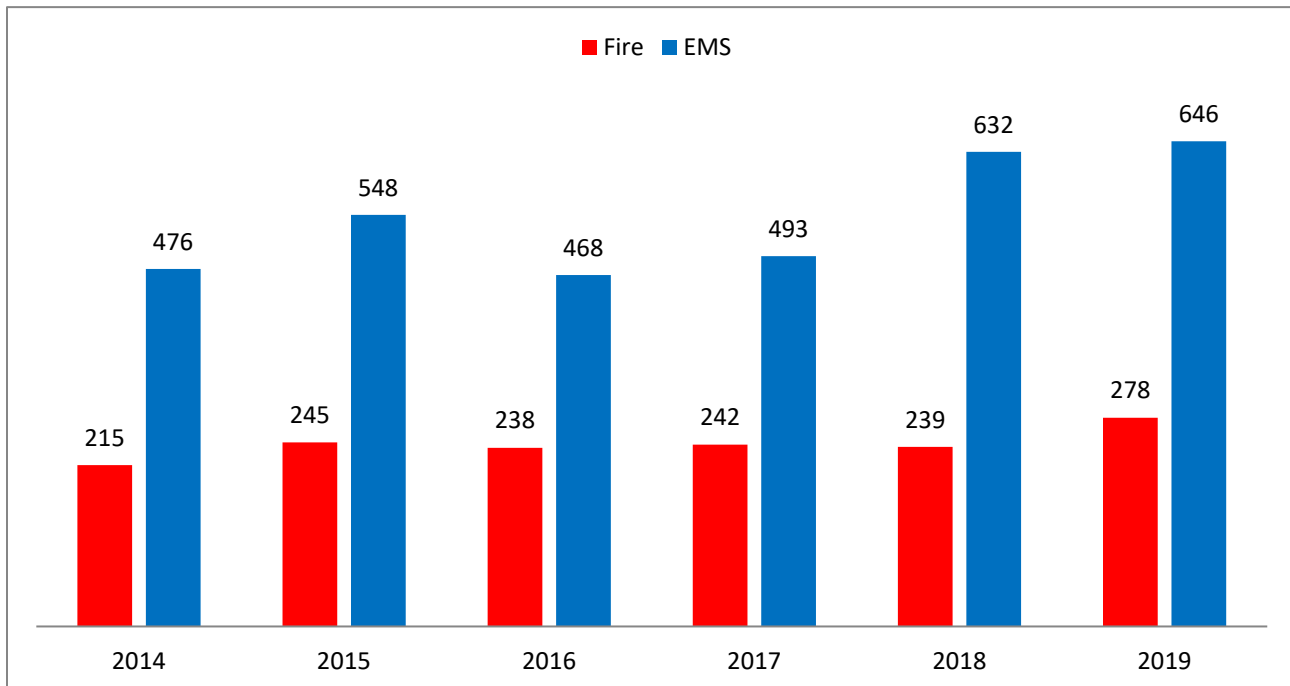
Appendix I – Total Incidents Compared to Volunteers Firefighters from 2014 to 2019.

Year	Volunteer Firefighters on the Roster	Total Number of Incidents
2014	22	691
2015	20	793
2016	21	706
2017	24	735
2018	21	871
2019	18	927



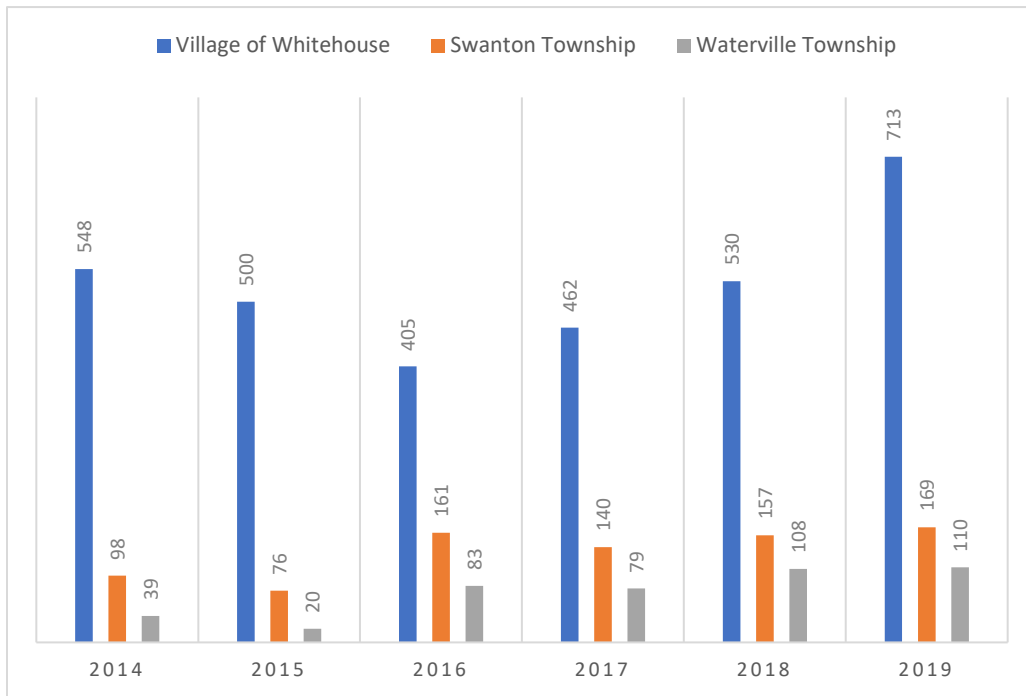
Appendix J – Total Incident Breakdown from 2014 to 2019.

	2014	2015	2016	2017	2018	2019
Fire	215	245	238	242	239	279
EMS	476	548	468	493	632	648
Total	691	793	706	735	871	927



Appendix K - Total Incidents in Whitehouse and Contractual Areas from 2014 to 2019.

Year	Total Incidents Whitehouse	Total Incidents in Swanton Township	Total Incidents in Waterville Township
2014	548	98	102
2015	500	76	77
2016	405	161	83
2017	462	140	79
2018	530	157	108
2019	528	168	110



Appendix L – Automatic Aid Received and Given from 2014 to 2019.

Year	Automatic Aid Received	Automatic Aid Given
2014	4	1
2015	13	4
2016	19	8
2017	14	11
2018	13	9
2019	26	7

Appendix M – Mutual Aid Received and Given from 2014-2019.

Year	Mutual Aid Received	Mutual Aid Given
2014	16	19
2015	13	39
2016	4	32
2017	9	32
2018	13	10
2019	16	107

Appendix N – Concurrent Incidents from 2015 to 2019.

Year	Number of Incidents	Percentage of Incidents
2015	42	5.3%
2016	96	13.64%
2017	74	10.08%
2018	117	13.43%
2019	142	15.38%

Appendix O – Life Squad Dispatches and Percentages from 2014 to 2019.

Year	Total Life Squad Dispatches in Lucas County	Year	Total Life Squad 9 Dispatches	Percentage of Life Squad 9 Dispatches Compared to All Other Life Squads
2014	29,223	2014	859	2%
2015	31,467	2015	698	2%
2016	29,139	2016	613	2%
2017	29,700	2017	717	2%
2018	27,947	2018	725	2%
2019	25,233	2019	725	2%

Appendix P – Number of Staffed Hours and then Unstaffed Hours from 2014 to 2019.

Year	Staffed Hours	Unstaffed Hours
2014	24,721	3,567
2015	21,580	6,807
2016	27,304	984
2017	27,865	423
2018	34,582	362
2019	34,799	145

Appendix Q - Medic Unit Response times on Weeknights and Weekends from 2014 to 2018.

Time	2014	2015	2016	2017
5 p.m.-6 p.m.	7 minutes	9 minutes	6 minutes	6 minutes
6 p.m.-7 p.m.	8 Minutes	7 Minutes	6 Minutes	7 Minutes
7 p.m.-8 p.m.	8 Minutes	8 Minutes	9 Minutes	6 Minutes
8 p.m.-9 p.m.	7 Minutes	7 Minutes	7 Minutes	7 Minutes
9 p.m.-10 p.m.	7 Minutes	8 Minutes	8 Minutes	7 Minutes
10 p.m.-11 p.m.	10 Minutes	7 Minutes	8 Minutes	8 Minutes
11 p.m.-12 a.m.	6 Minutes	8 Minutes	6 Minutes	7 Minutes
12 a.m.-1 a.m.	10 Minutes	8 Minutes	8 Minutes	8 Minutes
1 a.m.-2 a.m.	10 Minutes	9 Minutes	9 Minutes	7 Minutes
2 a.m.-3 a.m.	12 Minutes	7 Minutes	7 Minutes	8 Minutes
3 a.m.-4 a.m.	12 Minutes	10 Minutes	8 Minutes	9 Minutes
4 a.m.-5 a.m.	12 Minutes	7 Minutes	8 Minutes	8 Minutes
5 a.m.-6 a.m.	10 Minutes	8 Minutes	9 Minutes	10 Minutes
6 a.m.-7 a.m.	13 Minutes	9 Minutes	9 Minutes	10 Minutes

Appendix R - Medic unit response times on weeknights and weekends from 2018 to 2019.

Time	2018	2019
5 p.m.- 6 p.m.	8 minutes	4 minutes
6 p.m.-7 p.m.	6 minutes	6 minutes
7 p.m.-8 p.m.	10 Minutes	5 minutes
8 p.m.-9 p.m.	7 Minutes	5 minutes
9 p.m.-10 p.m.	7 Minutes	6 minutes
10 p.m.-11 p.m.	6 Minutes	6 minutes
11 p.m.-12 a.m.	7 Minutes	5 minutes
12 a.m.-1 a.m.	7 Minutes	7 minutes
1 a.m.-2 a.m.	7 Minutes	7 minutes
2 a.m.-3 a.m.	7 Minutes	8 minutes
3 a.m.-4 a.m.	10 Minutes	7 minutes
4 a.m.-5 a.m.	10 Minutes	7 minutes
5 a.m.-6 a.m.	11 Minutes	7 minutes
6 a.m.-7 a.m.	10 Minutes	6 minutes

Appendix S - Engine Response Times Per Hour on Weeknights and Weekends from 2014 to 2017.

Time	2014	2015	2016	2017
5 p.m.-6 p.m.	6 minutes	7 minutes	7 minutes	9 minutes
6 p.m.-7 p.m.	7 minutes	7 minutes	7 minutes	8 minutes
7 p.m.-8 p.m.	5 minutes	6 minutes	6 minutes	6 minutes
8 p.m.-9 p.m.	5 minutes	6 minutes	7 minutes	6 minutes
9 p.m.-10 p.m.	7 minutes	7 minutes	6 minutes	7 minutes
10 p.m.-11 p.m.	7 minutes	6 minutes	7 minutes	7 minutes
11 p.m.-12 a.m.	7 minutes	8 minutes	7 minutes	7 minutes
12 a.m.-1 a.m.	7 minutes	7 minutes	7 minutes	6minutes
1 a.m.-2 a.m.	20 minutes	No Calls	12 minutes	No Calls
2 a.m.-3 a.m.	13 minutes	12 minutes	No Calls	No Calls
3 a.m.-4 a.m.	13 minutes	12 minutes	10 minutes	9 minutes
4 a.m.-5 a.m.	No Calls	15 minutes	No Calls	No Calls
5 a.m.-6 a.m.	No Calls	No Calls	10 minutes	20 minutes
6 a.m.-7 a.m.	10 minutes	12 minutes	16 minutes	No Calls

Appendix T - Engine Response Time Per Hour on Weeknights and Weekends from 2018 to 2019.

Time	2018	2019
5 p.m.- 6 p.m.	6 minutes	7 minutes
6 p.m.-7 p.m.	6 minutes	7 minutes
7 p.m.-8 p.m.	5 minutes	5 minutes
8 p.m.-9 p.m.	6 minutes	6 minutes
9 p.m.-10 p.m.	5 minutes	6 minutes
10 p.m.-11 p.m.	8 minutes	7 minutes
11 p.m.-12 a.m.	6 minutes	6 minutes
12 a.m.-1 a.m.	14 minutes	13 minutes
1 a.m.-2 a.m.	13 minutes	11 minutes
2 a.m.-3 a.m.	6 minutes	6 minutes
3 a.m.-4 a.m.	6 minutes	6 minutes
4 a.m.-5 a.m.	14 minutes	11 minutes
5 a.m.-6 a.m.	6 minutes	7 minutes
6 a.m.-7 a.m.	10 minutes	9 minutes

**Appendix U - Average Number of Incidents on Weeknights from 5 p.m. to 7 a.m. from 2014
to 2019.**

Year	Time
2014	18
2015	26
2016	23
2017	22
2018	27
2019	31

**Appendix V – Average Number of Incidents on Weekends on Saturday from 7 a.m. to
Monday morning at 7 a.m. from 2014 to 2019.**

Year	Time
2014	9
2015	8
2016	8
2017	8
2018	10
2019	11

**Appendix W - Average Volunteer Participation Based on Incident Type on Weeknights 5
p.m. to 7 a.m. From 2014 - 2019**

Year	Fires Incidents	Average Number of Volunteers	EMS Incidents	Average Number of Volunteers
2014	110	9	181	5
2015	168	7	282	6
2016	151	8	154	4
2017	118	6	190	5
2018	151	6	232	3
2019	197	5	244	2

**Appendix X – Average Volunteer Participation Based on Incident Type on Weekends from
Saturday at 7 a.m. to Monday morning at 7 a.m. From 2014 - 2019**

Year	Fires	Average Number of Volunteers	EMS	Average Number of Volunteers
2014	78	9	76	4
2015	73	7	112	4
2016	50	5	77	4
2017	53	7	92	5
2018	53	6	125	4
2019	76	5	128	3

Appendix Y – Neighboring Fire Department Staffing Survey

1. What is the name of the fire department that you represent? *

Enter your answer

2. What is the population of the service area that you protect? *

- 5,000-10,000
- 10,001-15,000
- 15,001-20,000
- 20,001-25,000
- 25,001-more

3. How many square miles are in the service area that you protect? *

- Less than 20 square miles
- 20-25 square miles
- 26-30 square miles
- More than 31 square miles

4. How is the fire department that you represent funded? *

- General Funded
- Income Tax Levy
- Property Tax
- Fee For Service
- Donations
- Contractual Contracts
- EMS Billing

Appendix Y – Neighboring Fire Department Staffing Survey (Cont).

5. How many fire calls for service did your organization respond to in 2014 and then in 2019? *

Enter your answer

6. How many emergency medical service (EMS) calls did your organization respond to in 2014 and then in 2019? *

Enter your answer

7. Does the fire department that you represent have volunteer firefighters on the roster? *

Yes

No

8. How are your volunteer firefighters utilized?

Utilized for the initial incident.

Utilized for additional incidents.

Other

9. Please explain.

Enter your answer

10. How many individual hours per employee is the fire department that you represent staffed with firefighters per week? *

Enter your answer

Appendix Y – Neighboring Fire Department Staffing Survey (Cont).

11. What are the minimum number of firefighters assigned per shift at the fire department that you represent? *

- 3 or less
- 3-5
- 5-10
- 10 or more

12. Do you have an automatic aid agreement with surrounding fire departments? *

- Yes
- No

13. What types of incidents are part of the automatic aid agreement? *

14. What does your organization do to handle concurrent calls for service? (A concurrent call for service is a new call that is dispatched while the initial call is still being handled). *

- Cover the incident with volunteer firefighters.
- Cover the incident with mutual aid.
- Other

15. Please explain. *

16. Is the current staffing model at the fire department that you represent meeting the needs of the community? *

- Yes
- No

Appendix Y – Neighboring Fire Department Staffing Survey (Cont).

16. Is the current staffing model at the fire department that you represent meeting the needs of the community? *

Yes

No

17. Please explain what needs to be done to meet the needs of the citizens? *

Enter your answer

18. After the results are back, would you like a copy of the report? *

Yes

No

19. What is the email address that you would like me to send the results to? *

Enter your answer

20. If I have questions about your survey response, may I contact you? *

Yes

No

21. Please provide you phone number or email address. *

Enter your answer

Appendix Z – Ohio Fire Department Staffing Survey.

1. What is the name of the fire department that you represent? *

Enter your answer

2. What is the population of the service area that you protect? *

- 5,000-10,000
- 10,001-15,000
- 15,001-20,000
- 20,001-25,000
- 25,001-more

3. How many square miles are in the service area that you protect? *

- Less than 20 square miles
- 20-25 square miles
- 26-30 square miles
- More than 31 square miles

4. How is the fire department that you represent funded? *

- General Funded
- Income Tax Levy
- Property Tax
- Fee For Service
- Donations
- Contractual Contracts
- EMS Billing

Appendix Z – Ohio Fire Department Staffing Survey (Cont).

5. What types of incidents does the fire department that you represent respond to? *

- Fire Incidents Only.
- Emergency Medical Services (EMS) incidents only.
- Both Fire and EMS incidents.

6. Does the fire department that you represent have volunteer firefighters on the roster? *

- Yes
- No

7. How are your volunteer firefighters utilized?

- Utilized for the initial incident.
- Utilized for additional incidents.
- Other

8. Please explain.

Enter your answer

9. How many individual hours per employee is the fire department that you represent staffed with firefighters per week? *

Enter your answer

Appendix Z – Ohio Fire Department Staffing Survey (Cont).

10. What are the minimum number of firefighters assigned per shift at the fire department that you represent? *

- 3 or less
- 3-5
- 5-10
- 10 or more

11. What is your staffing deployment model at the fire department that you represent? *

- Volunteer Only
- 8 Hour shifts.
- 10 Hour Shifts.
- 12 Hour Shifts.
- 24/48 hour shifts.
- 24/72 hour shifts.
- Other

12. Please explain *

Enter your answer

13. How many personnel respond on your first out medic unit to an EMS call? *

- 2 Personnel.
- 3 Personnel.
- 3 or more Personnel.

Appendix Z – Ohio Fire Department Staffing Survey (Cont).

14. How many personnel respond on your first out fire engine for fire related calls? *

- 2 Personnel.
- 3 Personnel
- 4 or more Personnel.

15. How many fire calls for service did your organization respond to in 2014 and then in 2019? *

Enter your answer

16. How many emergency medical service (EMS) calls did your organization respond to in 2014 and then in 2019? *

Enter your answer

17. Does your fire department have a different deployment model on nights and weekends than during the weekday? *

- Yes
- No

18. Do you have an automatic aid agreement with surrounding fire departments? *

- Yes
- No

19. What types of incidents are part of the automatic aid agreement? *

Enter your answer

Appendix Z – Ohio Fire Department Staffing Survey (Cont).

20. What does your organization do to handle concurrent calls for service? (A concurrent call for service is a new call that is dispatched while the initial call is still being handled). *

- Cover the incident with volunteer firefighters.
- Cover the incident with mutual aid.
- Other

21. Please explain. *

Enter your answer

22. Is the current staffing model at the fire department that you represent meeting the needs of the community? *

- Yes
- No

23. Please explain what needs to be done to meet the needs of the citizens? *

Enter your answer

24. After the results are back, would you like a copy of the report? *

- Yes
- No

Appendix Z – Ohio Fire Department Staffing Survey Cont).

26. If I have questions about your survey response, may I contact you? *

Yes

No

27. Please provide you phone number or email address. *

Enter your answer

Appendix AA - Neighboring Fire Department Staffing Survey Results.

Question 1. What is the name of the fire department that you represent?

Fire Department	County
Toledo Fire Rescue Department	Lucas
Sylvania Township Fire and EMS Department	Lucas
Jerusalem Township Fire and Rescue	Lucas
180 th Fighter wing Fire &EMS Department	Lucas
City of Waterville Fire Department	Lucas
Monclova Twp. Fire and Rescue Department	Lucas
Springfield Twp. Fire and Rescue Department	Lucas
Maumee Fire Department	Lucas
Providence Twp. Fire & Rescue	Lucas

Appendix AA - Neighboring Fire Department Staffing Survey Results.

Question 1. What is the name of the fire department that you represent? (Continued)

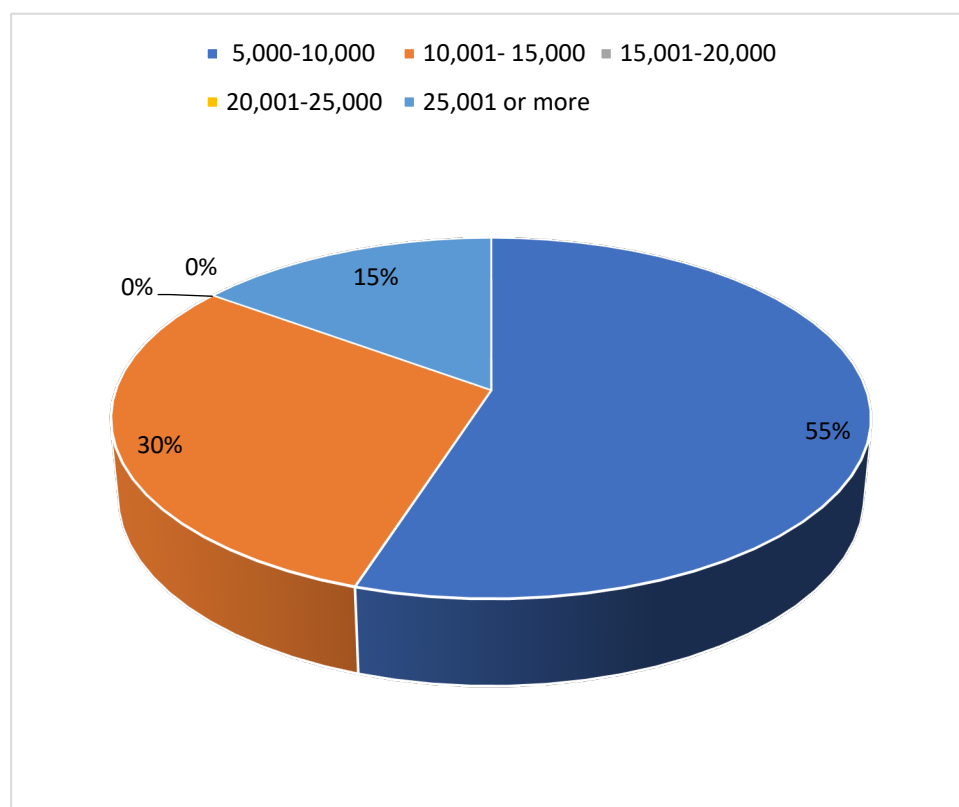
Fire Department	County
Bloomdale Fire and Rescue	Wood
Lake Township Fire Department	Wood
City of Rossford Fire & Rescue Department	Wood
Northwood Fire department	Wood
Perrysburg Township	Wood
Central Joint Fire District	Wood
Middleton Township Fire Department	Wood

Fire Department	County
Gorham – Fayette Fire Department	Fulton
Wauseon Fire Department	Fulton
Swanton Fire Department	Fulton
Delta Community Fire Department	Fulton

Question 2. What is the population of your service area that you protect?

- A. 5,000-10,000
- B. 10,001- 15,000
- C. 15,001-20,000
- D. 20,001-25,000
- E. 25,001 or more

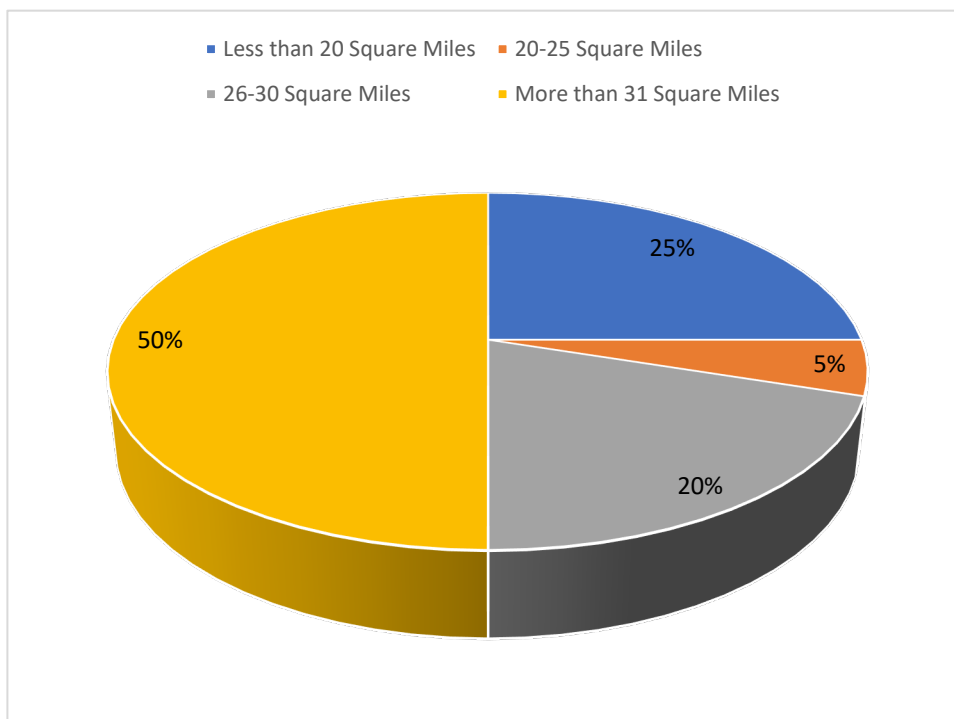
Population	Department Responses	Percentage
5,000 – 10,000	11	55%
10,001 – 15,000	6	30%
15,001 – 20,000	0	0%
20,001 – 25,000	0	0%
25,001 - More	3	15%



Question 3. How many square miles are in your service area that you protect?

- A. Less than 20 Square Miles
- B. 20-25 Square Miles
- C. 26-30 Square Miles
- D. More than 31 Square Miles

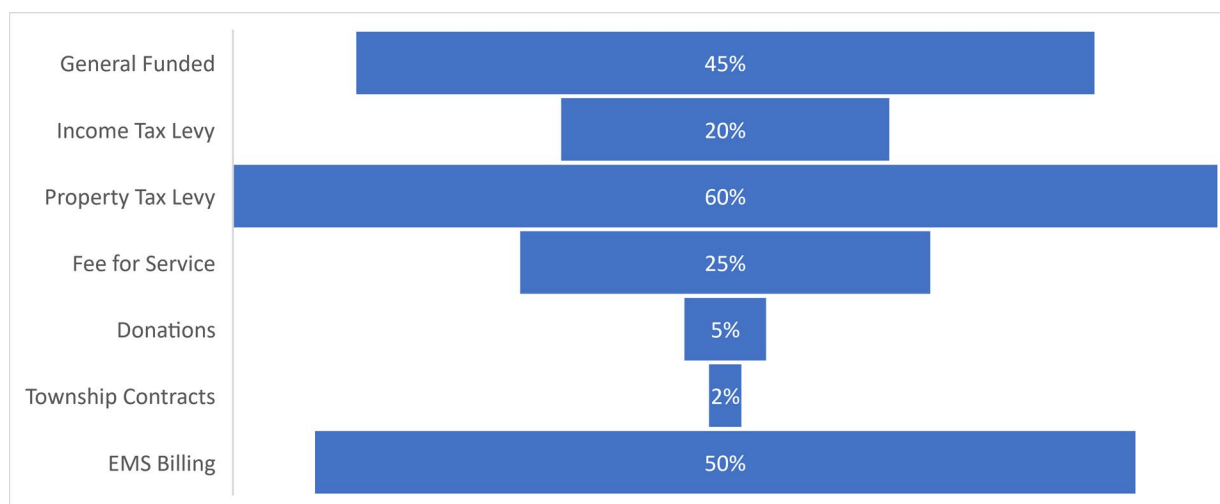
Square Miles	Department Responses	Percentage
Less than 20 Square Miles	5	25%
20 to 25 Square Miles	1	5%
26 to 30 Square Miles	4	20%
More than 31 Square Miles	10	50%



Question 4. How is the fire department that you represent funded? (Departments may pick more than one).

- A. General Funded
- B. Income Tax Levy
- C. Property Tax Levy
- D. Fee for Service
- E. Donations
- F. Township Contracts
- G. EMS Billing

Funding Type	Department Responses	Percentage
General Funded	9	45%
Income Tax Levy	4	20%
Property Tax Levy	12	60%
Fee for service	5	25%
Donations	1	5%
Township Contracts	4	2%
EMS Billing	10	50%



Question 5. How many fire calls for service did your organization respond to in 2014 and then in 2019?

Number	Name	2014	2019
1	Anonymous	6,715	6,815
2	Anonymous	Not Available	Not Available
3	Anonymous	292	421
4	Anonymous	70	76
5	Anonymous	229	236
6	Anonymous	270	378
7	Anonymous	1,430	2,163
8	Anonymous	825	994
9	Anonymous	160	221
10	Anonymous	322	299
11	Anonymous	300	400
12	Anonymous	90	158
13	Anonymous	120	147
14	Anonymous	175	253
15	Anonymous	78	133
16	Anonymous	54	48
17	Anonymous	251	318
18	Anonymous	431	594
19	Anonymous	173	120

Question 5. How many fire calls for service did your organization respond to in 2014 and then in 2019? (Continued)

Number	Name	2014	2019
20	Anonymous	535	607

Question 6. How many emergency medical services (EMS) calls for service did your organization respond to in 2014 and then 2019?

Number	Name	2014	2019
1	Anonymous	48,709	52,804
2	Anonymous	Not Available	Not Available
3	Anonymous	50	110
4	Anonymous	160	125
5	Anonymous	705	1,120
6	Anonymous	233	218
7	Anonymous	1,154	1,903
8	Anonymous	680	799
9	Anonymous	760	879
10	Anonymous	1,206	1,620
11	Anonymous	200	300
12	Anonymous	108	184
13	Anonymous	115	133
14	Anonymous	569	692
15	Anonymous	422	600
16	Anonymous	301	258

Question 6. How many emergency medical services (EMS) calls for service did your organization respond to in 2014 and then 2019? (Continued)

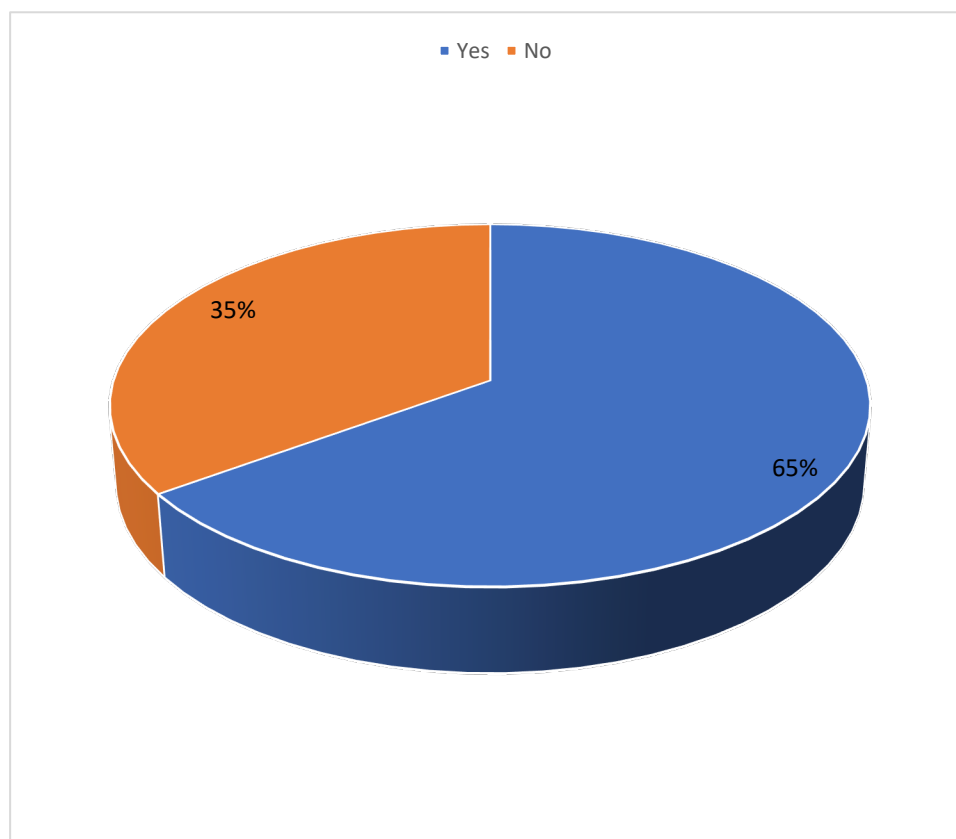
Number	Name	2014	2019
17	Anonymous	830	1,181
18	Anonymous	2,666	3,674
19	Anonymous	824	911
20	Anonymous	2,976	3,305

Question 7. Does the fire department that you represent have volunteer firefighters on the roster?

A. Yes – goes to question 8

B. No – goes to question 9

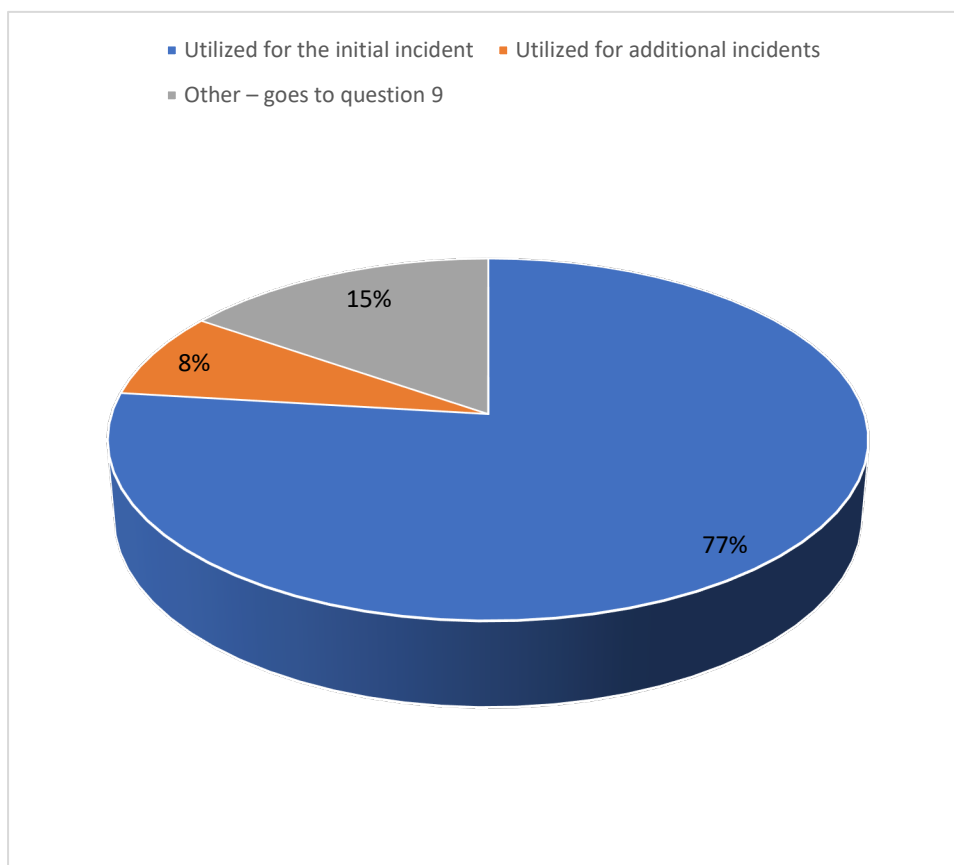
Responses	Department Responses	Percentage
Yes	13	65%
No	7	35%



Question 8. How are your volunteer firefighters utilized?

- A. Utilized for the initial incident. – goes to question 10
- B. Utilized for additional incidents. – goes to question 10
- C. Other – goes to question 9

Questions	Department Responses	Percentage
Utilized for the initial incident.	10	77%
Utilized for additional incidents.	1	8%
Other	2	15%



Question 9. Please Explain (regarding question 8).

Number	Name	Description
1	Anonymous	We staff at least one medic and one FF/EMT 24/7 for primary ems runs but utilize them for fire also. These people are part time. Then we back them up with volunteers on all calls.
2	Anonymous	They are utilized on any incident that exceeds the normally staffed manpower.

Question 11. How many individual hours per employee is the fire department that you represent staffed with firefighters per week?

Number	Name	Description
1	Anonymous	48-hour work week (24 on, 48 off, 17 Kelly Days)
2	Anonymous	50
3	Anonymous	Personnel work a 56-hour work week, but we are staffed 24/7 with a minimum of 6 personnel at all times.
4	Anonymous	0
5	Anonymous	24/7 x 2
6	Anonymous	140 hours
7	Anonymous	56
8	Anonymous	36
9	Anonymous	We are staffed 24/7
10	Anonymous	6 per shift
11	Anonymous	None

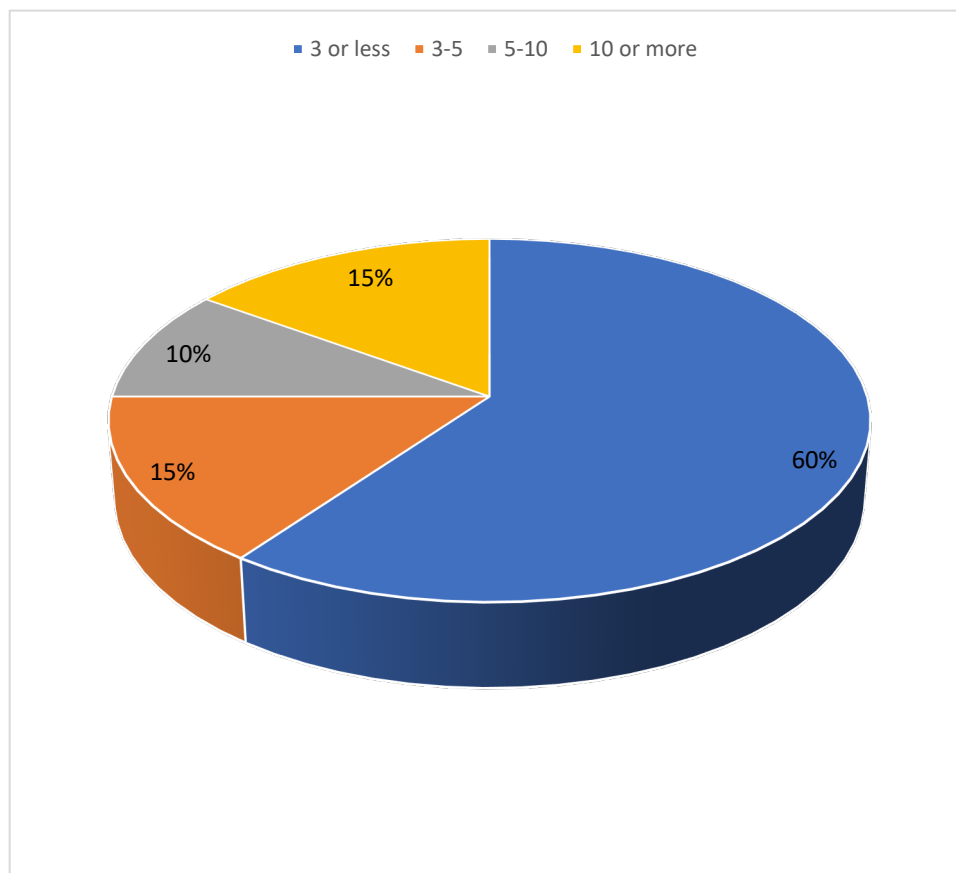
Question 11. How many individual hours per employee is the fire department that you represent staffed with firefighters per week? (Continued)

12	Anonymous	0
13	Anonymous	We are all Volunteer Fire Dept. 30 members with full time EMS utilizing part time personnel on 12 hour shifts 2 per shift
14	Anonymous	2-24/7, 2 additional 7a-7p everyday
15	Anonymous	No more than 35
16	Anonymous	30
17	Anonymous	Not sure what the question is asking
18	Anonymous	Full-time averages 42 hours per week. Part time averages 30 hours per week
19	Anonymous	$24 \times 7 = 168$ hours per week $\times 4$ employees = 672 hours
20	Anonymous	24

Question 12. What are the minimum number of firefighters assigned per shift at the fire department that you represent?

- A. 3 or less
- B. 3-5
- C. 5-10
- D. 10 or more

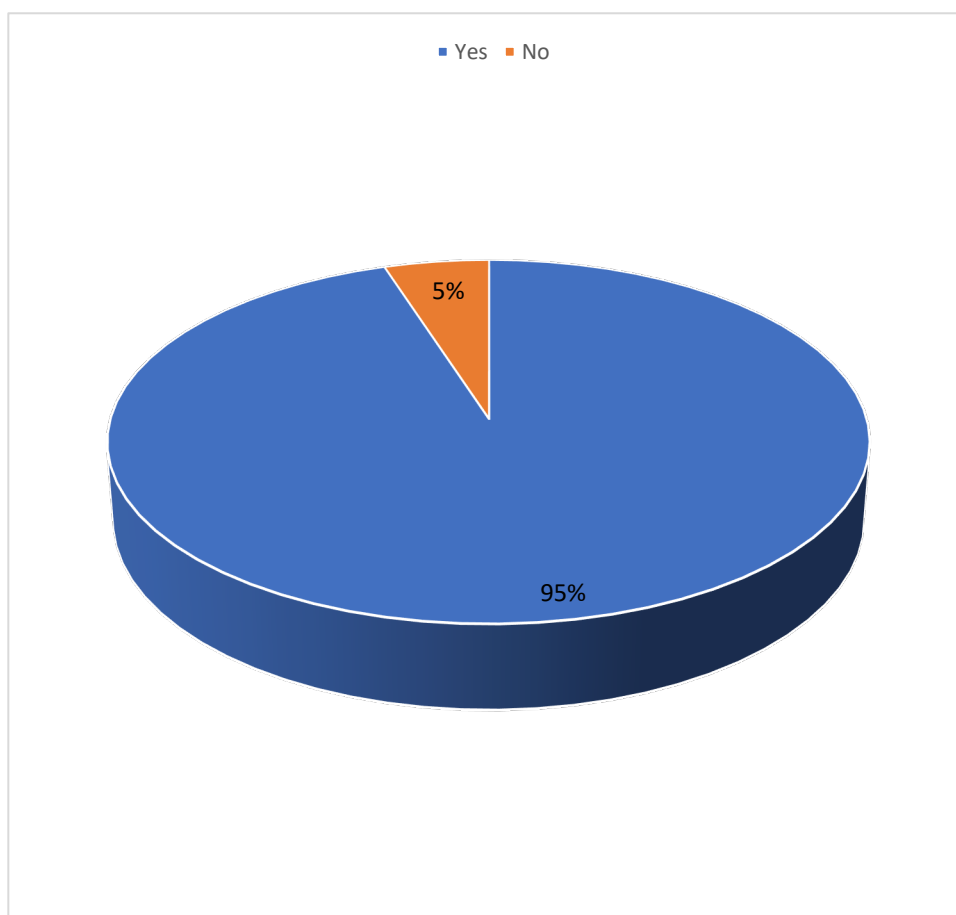
Personnel Assigned	Department Responses	Percentage
3 or Less	12	60%
3 – 5	3	15%
5 – 10	2	10%
10 or More	3	15%



Question 13. Do you have an automatic aid agreement with surrounding fire departments?

- A. Yes – goes to question 13
- B. No – goes to question 14

Responses	Department Responses	Percentage
Yes	19	95%
No	1	5%



Question 14. What types of incidents is part of the automatic aid agreement?

Number	Name	Description
1	Anonymous	All Hazards
2	Anonymous	Structure Fires and Vehicle Accidents
3	Anonymous	Depends on agency. Some are for all. Others are just fire/MVA
4	Anonymous	Fire
5	Anonymous	Fire calls only
6	Anonymous	Fires
7	Anonymous	Fire, cardiac arrest
8	Anonymous	Structure fires and a temporary one for MVA's in certain locations due to construction
9	Anonymous	Structure fires and MVA's in construction zones on I-75
10	Anonymous	Known or suspected Structure Fires
11	Anonymous	Water Rescues
12	Anonymous	Structure Fires

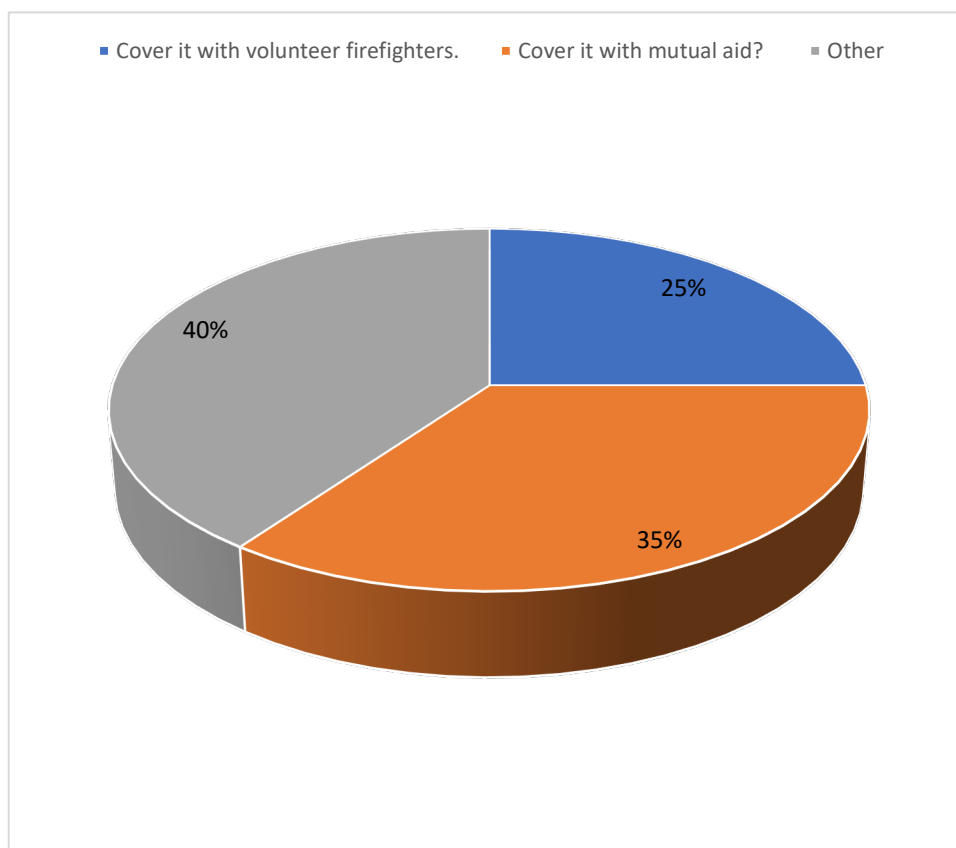
Question 14. What types of incidents is part of the automatic aid agreement? (Continued)

Number	Name	Description
13	Anonymous	Fire response with confirmed fires
14	Anonymous	Structure Fires
15	Anonymous	Water rescues and fires
16	Anonymous	Depends on department, all structure fires and with one includes traffic crashes
17	Anonymous	All structure fires. MVC's in certain areas.
18	Anonymous	Fire, EMS, Hazmat, Rescues
19	Anonymous	Structure Fires, Water Rescues

Question 15. What does your organization do to handle concurrent calls for service? (A concurrent incident is a new call that is dispatched while the initial call is still being handled).

- A. Cover it with volunteer firefighters. – goes to question 16
- B. Cover it with mutual aid? – goes to question 16
- C. Other – goes to question 16

Concurrent Incident Handling	Department Responses	Percentage
Cover it with Volunteer Firefighters	5	40%
Cover it with Mutual Aid	7	35%
Other	8	25%



Question 16. Please explain (regarding question 15).

Number	Name	Description
1	Anonymous	Metro City – We have many concurrent calls primarily medical. However, if multiple fires stretched resources, mutual aid is called.
2	Anonymous	Attempt to handle call with volunteers and if not then mutual aid is called.
3	Anonymous	Generally staffed to handle (2) calls depending on nature. Volunteers can play multiple roles.
4	Anonymous	If staffing is available, we handle it ourselves. If not, we call for assistance.
5	Anonymous	We utilize the combination of both Mutual aid and available volunteers. We have 30 volunteers on the Department.

Question 16. Please explain (regarding question 15). (Continued)

Number	Name	Description
6	Anonymous	Second EMS call is combination of off duty w/PPC. Third or greater EMS is off duty w/PPC and mutual aid if needed. Second and greater fire incident are off duty w/PPC or mutual aid as needed. Always use off duty w/PPC unless no available within 3 minutes of alarm.
7	Anonymous	Handle with another station, recall personnel, then mutual aid.

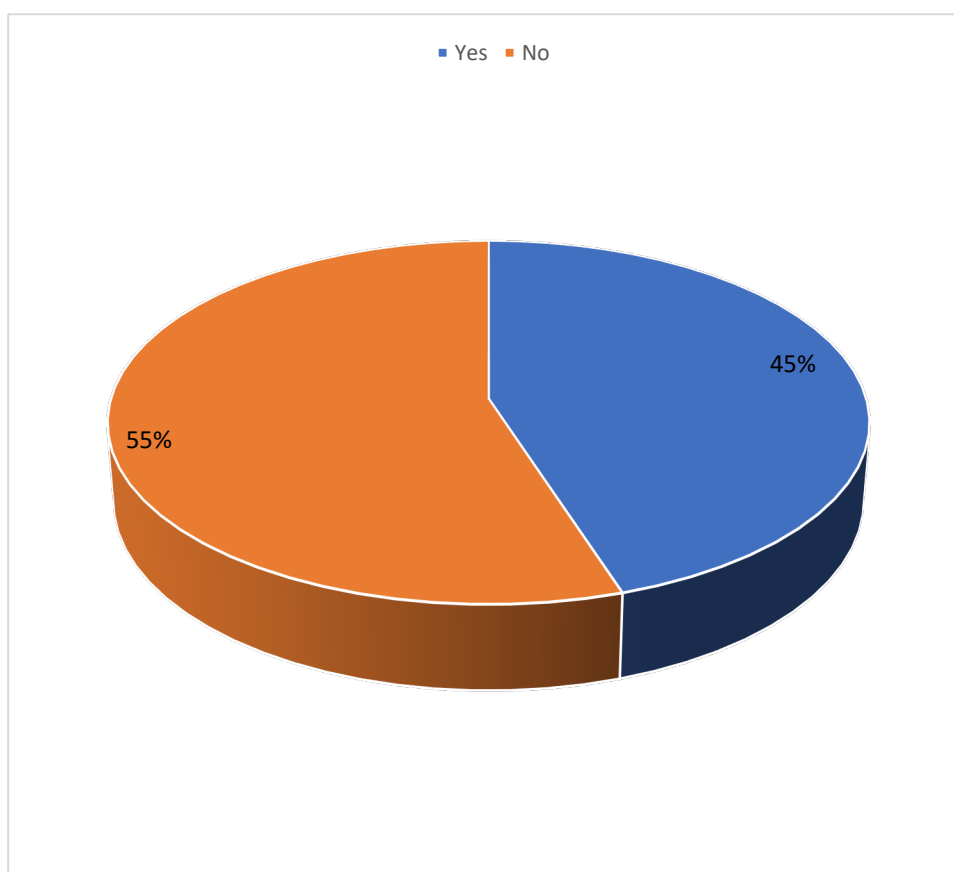
Question 16. Please explain (regarding question 15). (Continued)

Number	Name	Description
8	Anonymous	Cover it with a combination of off duty staff or off duty full time and part time personnel. When the gap is not covered mutual aid is utilized. When we catch consecutive EMS runs, auto aid is automatic. Structure fires are automatic aid too. When our staff handles the consecutive run, auto aid is cancelled.

Question 17. Is the current staffing model at the fire department that you represent meeting the needs of the community?

- A. Yes – goes to question 18
- B. No – goes to question 17

Question	Department Responses	Percentage
Yes	9	55%
No	11	45%



Question 18. Explain what needs to be done to meet the needs of the citizens?

Number	Name	Description
1	Anonymous	With the volume of runs, TFRD does not meet the response time expectations of citizens. Additional apparatus would be required to meet response time goals.
2	Anonymous	Mutual aid and auto aid
3	Anonymous	More members
4	Anonymous	I feel we need to staff with a minimum of 3 personnel 24/7 with full-time/part-time individuals that can respond to an incident with a squad and or an engine. Of these 3 individuals twp should be a medic so that if they go on an EMS run two can transport and one medic stays back. Then supplement with the volunteers.
5	Anonymous	Need to hire full - time staffing with a minimum of two people at all times. Then be supplemented by part - time staff and volunteer staff.
6	Anonymous	We lack consistent staffing during the overnight hours.
7	Anonymous	Daytime coverage thin, looking at the option of adding a couple personnel on as part time

		personnel to assist with coverage.
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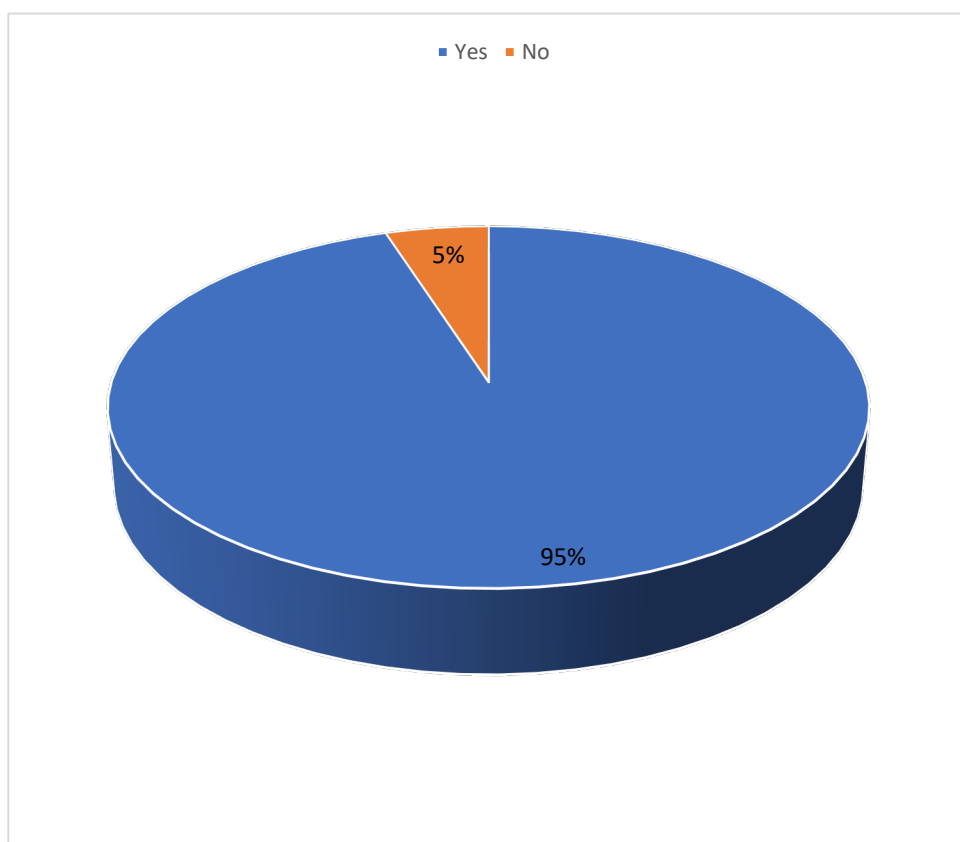
Question 18. Explain what needs to be done to meet the needs of the citizens? (Continued)

Number	Name	Description
8	Anonymous	More staffing and hire full time in order to have initial response in order to give time to volunteers to respond
9	Anonymous	Need more employees to cover shifts.
10	Anonymous	Additional 24 hour positions are needed whether filled with full time or part time are needed to keep response times for second, third and fourth concurrent EMS calls within community expectation.
11	Anonymous	There are times we are lacking response from off duty full time and off duty part time personnel. Some situations include motor vehicle accidents, non structure Fire calls, and back to back ambulance calls. The means to notify off duty personnel needs to be improved and the response from off duty personnel needs to follow.

Question 19. After the results are back, would you like a copy of the report?

- A. Yes – goes to question 19
- B. No – goes to question 20

Question	Department Responses	Percentage
Yes	19	95%
No	1	5%



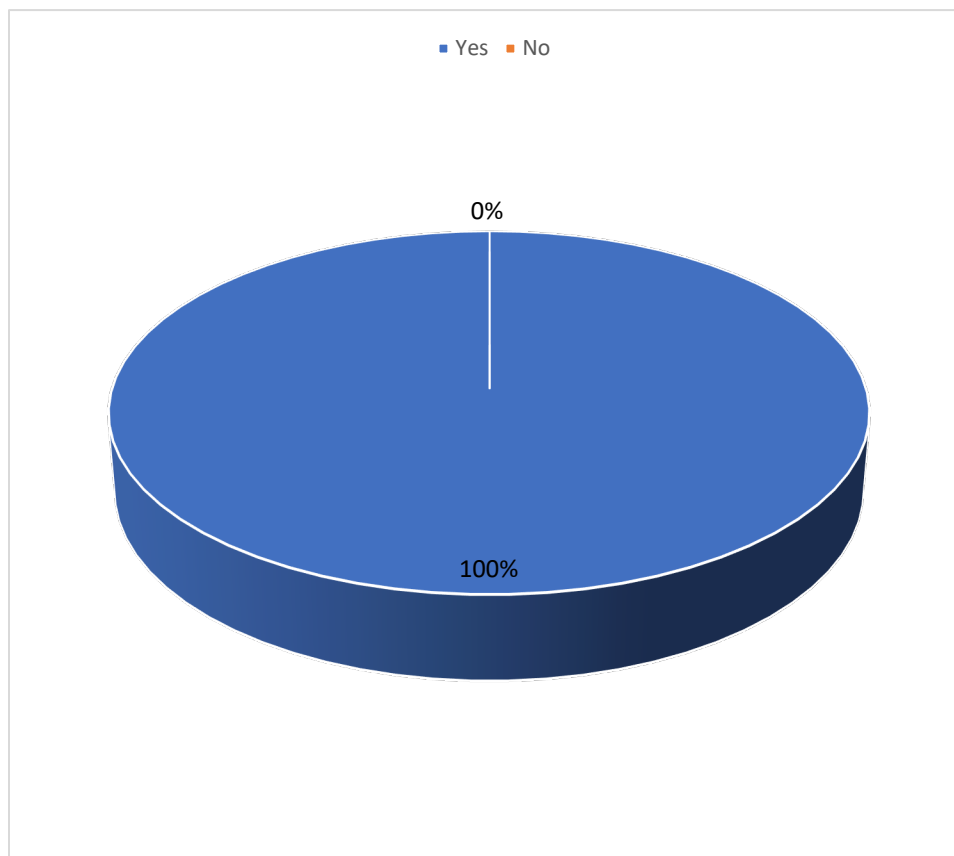
Question 20. What is the email address that you would like me to send the results to?

19 Responses

Question 21. If I have questions about your survey response, may I contact you?

- A. Yes – goes to question 21
- B. No - End

Question	Department Responses	Percentage
Yes	20	100%
No	0	0%



Question 22. Please provide you phone number or email address.

20 Responses

Appendix BB – Ohio Fire Departments Staffing Survey Results.

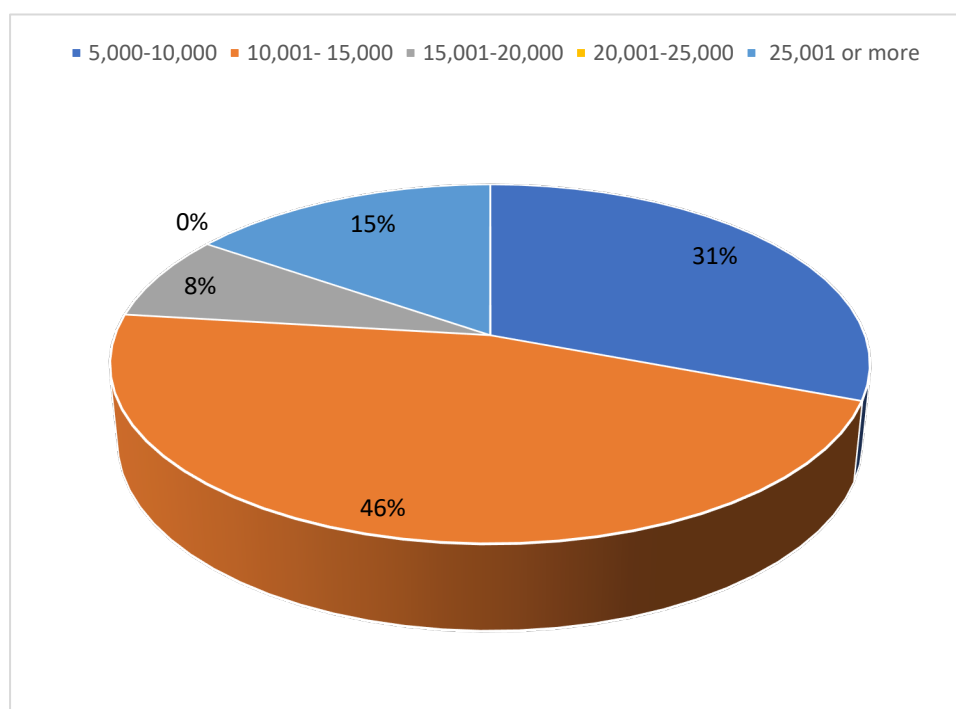
Question 1. What is the name of the fire department that you represent?

Fire Department	County
Wayne Township Fire department	Warren
Bazetta Township Fire department	Trumbull
Mount Gilead Fire Department	Morrow
Wadsworth Fire Department	Medina
City of Bryan	Williams
Willard Fire and Rescue Department	Huron
City of Montgomery	Hamilton
Celina	Mercer
Wooster Township Fire Department	Wayne
Defiance Fire and Rescue Division	Defiance
Napoleon Fire and Rescue	Henry
Van Wert Fire department	Van Wert

Question 2. What is the population of your service area that you protect?

- A. 5,000-10,000
- B. 10,001- 15,000
- C. 15,001-20,000
- D. 20,001-25,000
- E. 25,001 or more

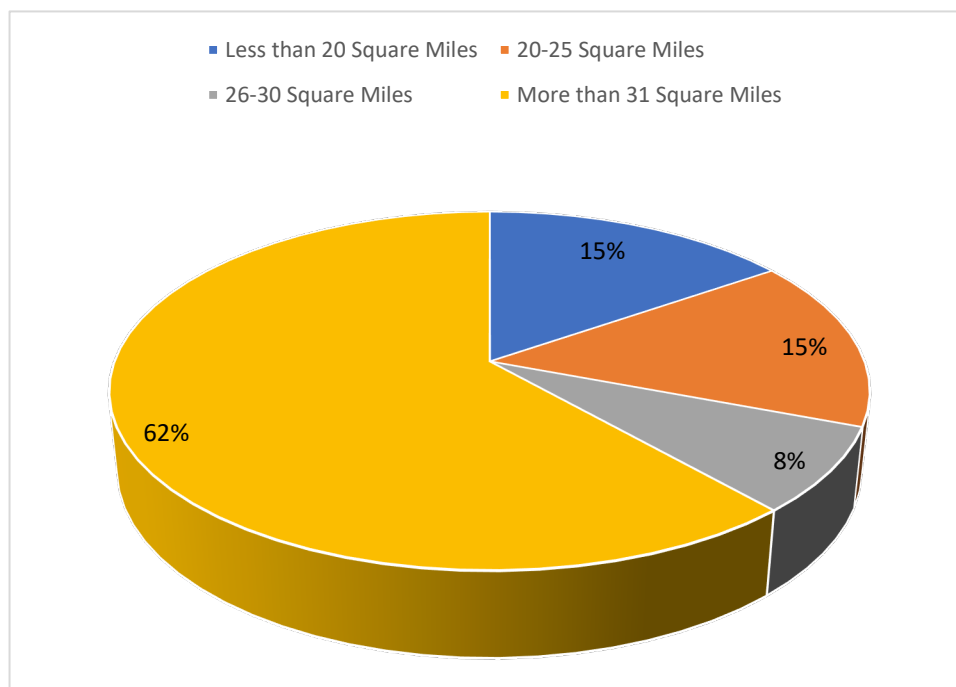
Service Area	Department Responses	Percentage
5,000 – 10,000	4	31%
10,001 – 15,000	6	46%
15,001 – 20,000	1	8%
20,001 – 25,000	0	0%
25,001 - More	2	15%



Question 3. How many square miles are in your service area that you protect?

- A. Less than 20 Square Miles
- B. 20-25 Square Miles
- C. 26-30 Square Miles
- D. More than 31 Square Miles

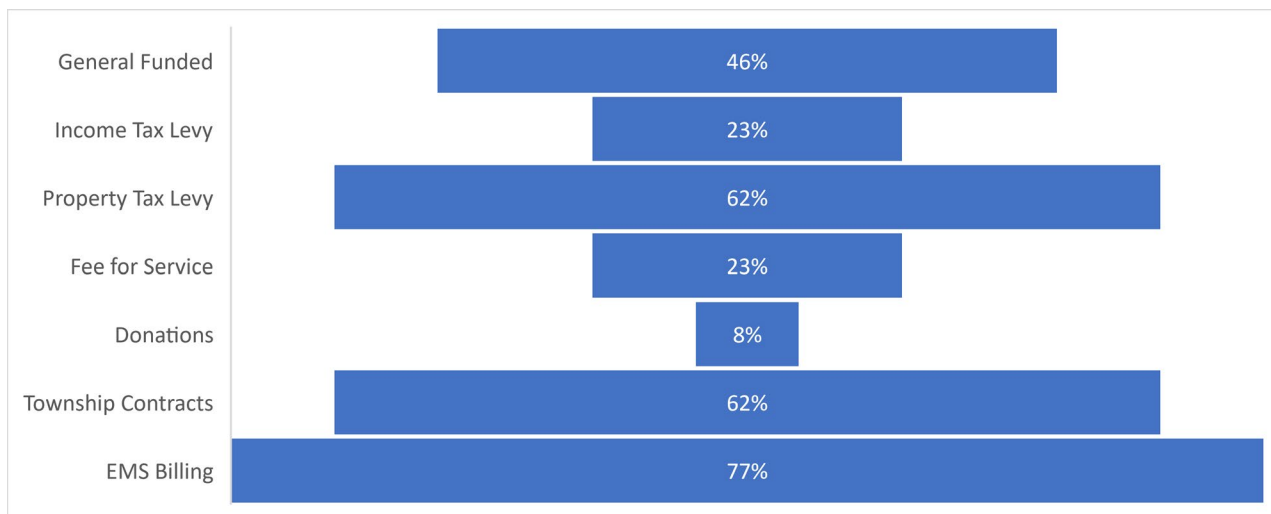
Square Miles	Department Responses	Percentage
Less than 20 Square Miles	2	15%
20 – 25 Square Miles	2	15%
26 – 30 Square Miles	1	8%
More than 31 Square Miles	8	62%



Question 4. How is the fire department that you represent funded? (Departments may pick more than one).

- A. General Funded
- B. Income Tax Levy
- C. Property Tax Levy
- D. Fee for Service
- E. Donations
- F. Township Contracts
- G. EMS Billing

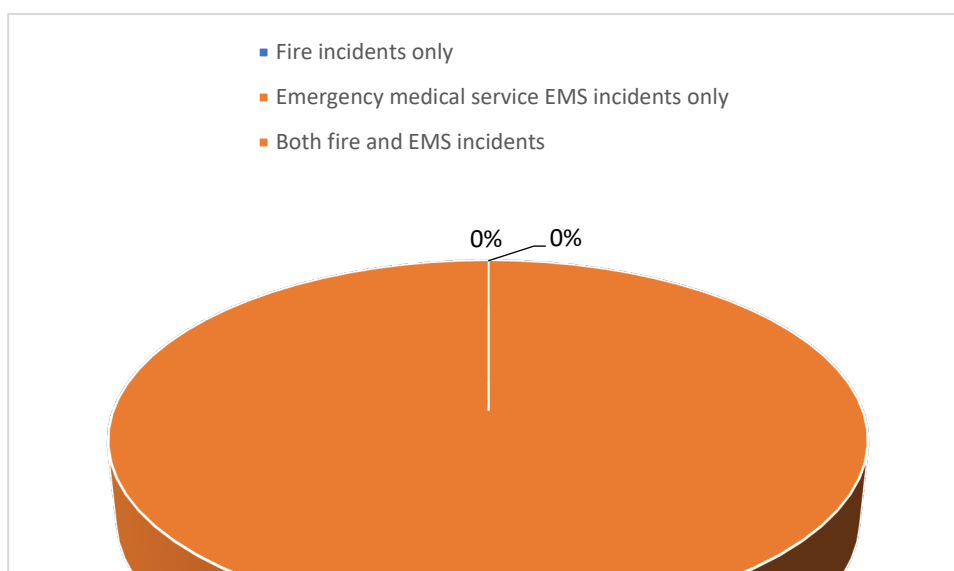
Funding	Department Responses	Percentage
General Funded	6	46%
Income Tax Levy	3	23%
Property Tax Levy	8	62%
Fee for Service	3	23%
Donations	1	8%
Township Contracts	8	62%
EMS Billing	10	77%



Question 5. What type of incidents does the fire department that you represent respond to?

- A. Fire incidents only
- B. Emergency medical service (EMS) incidents only
- C. Both fire and EMS incidents

Incidents	Department Responses	Percentage
Fire Incidents Only	0	0%
Emergency Medical Services Incidents (EMS) Only	0	0%
Both Fire and EMS Incidents	13	100%

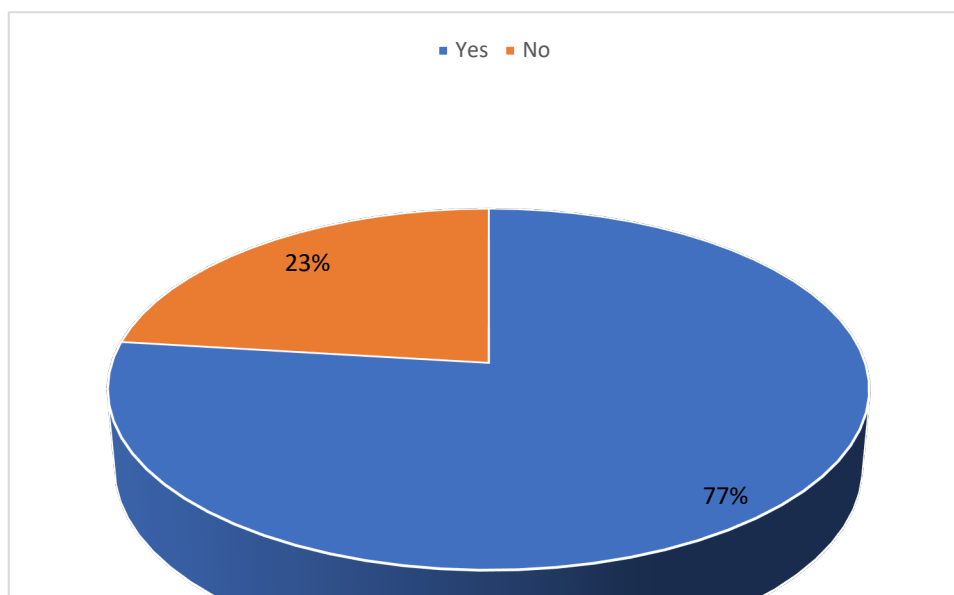


Question 6. Does the fire department that you represent have volunteer firefighters on the roster?

A. Yes – goes to question 7

B. No – goes to question 9

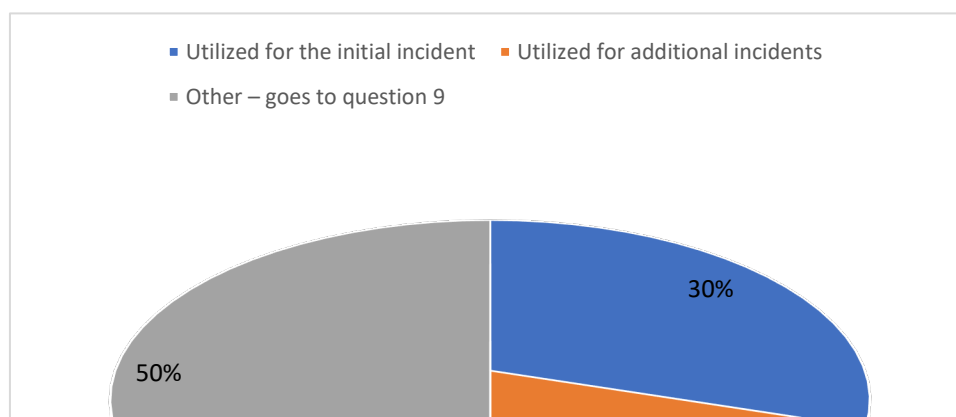
Question	Department Responses	Percentage
Yes	10	77%
No	3	23%



Question 7. How are your volunteer firefighters utilized?

- A. Utilized for the initial incident. – goes to question 9
- B. Utilized for additional incidents. – goes to question 9
- C. Other – goes to question 8
- D. Question 8. Please explain.

Firefighter Utilization	Department Responses	Percentage
Utilized for the initial incident	2	30%
Utilized for additional incidents	3	20%
Other	5	50%



Question 8. Please Explain. (Regarding question 7).

Number	Name	Description
1	Anonymous	They are assigned to work a minimum of 24 hours a month on shift with career and part time Firefighter medics. They do not count on minimum manning.
2	Anonymous	Some of our members only run fire and some only run EMS. A fire incident is an all call for all fire personnel. Our volunteers are able to work shifts at the station and respond to initial incidents for EMS calls, but we also utilize all call for additional EMS incidents.

Question 8. Please Explain. (Regarding question 7). (Continued)

Number	Name	Description
3	Anonymous	<p>We staff our station beginning at 0600 with 2 career firefighters 7 days a week. they are on duty until 1800. Monday - Friday except city holidays at 0700 2 more career firefighter are on duty until 1500. these 4 firefighters handle single engine response calls. in the event of an incident that calls for more than one fire department unit a General alarm is sounded, and any available firefighter is to respond. after 1500 on weekdays the volunteer duty crew handles the single engine responses with the career personnel on duty until 1800. after 1800 the on-duty volunteer crew handles the single engine calls. volunteer crews change duty every day at 0800 and run until 0800 the following day. we have 4 duty crews consisting of 4 to 5 people on each duty crew.</p>

4	Anonymous	We have two fulltime and two part-time that are on duty. Depending on the call it may be fulltime or part-time units responding, based on certification levels.
5	Anonymous	2 career per shift. One part time nights and weekends. Part time comes from volunteers. Other volunteers respond as needed.

Question 9. How many individual hours per employee is the fire department that you represent staffed with firefighters per week?

Number	Name	Description
1	Anonymous	12
2	Anonymous	Full time work 55-hour work week. Part time Firefighter have to maintain under 1500 hours for a year. Volunteer firefighters have to work 23 hours a month.
3	Anonymous	We are staffed 7 days a week from 0800 - 1600 with 4 Firefighters and 1 Chief Monday thru Friday and 4 Firefighters Saturday and Sunday
4	Anonymous	We have staffing of 4 members 24 hours a day, 7 days a week (672 hours). We also have an additional 42 hours a week for

		an additional person during our peak hours.
5	Anonymous	Career personnel work either a 40-hour week or a 42 hour week.
6	Anonymous	Fulltime - 376 hours (6 members @ 56 hours / 1 member @ 40 hours) / Part-time - 280 hours (5 - eight hour shifts per day)
7	Anonymous	24
8	Anonymous	52-hours
9	Anonymous	56

Question 9. How many individual hours per employee is the fire department that you represent staffed with firefighters per week? (Continued)

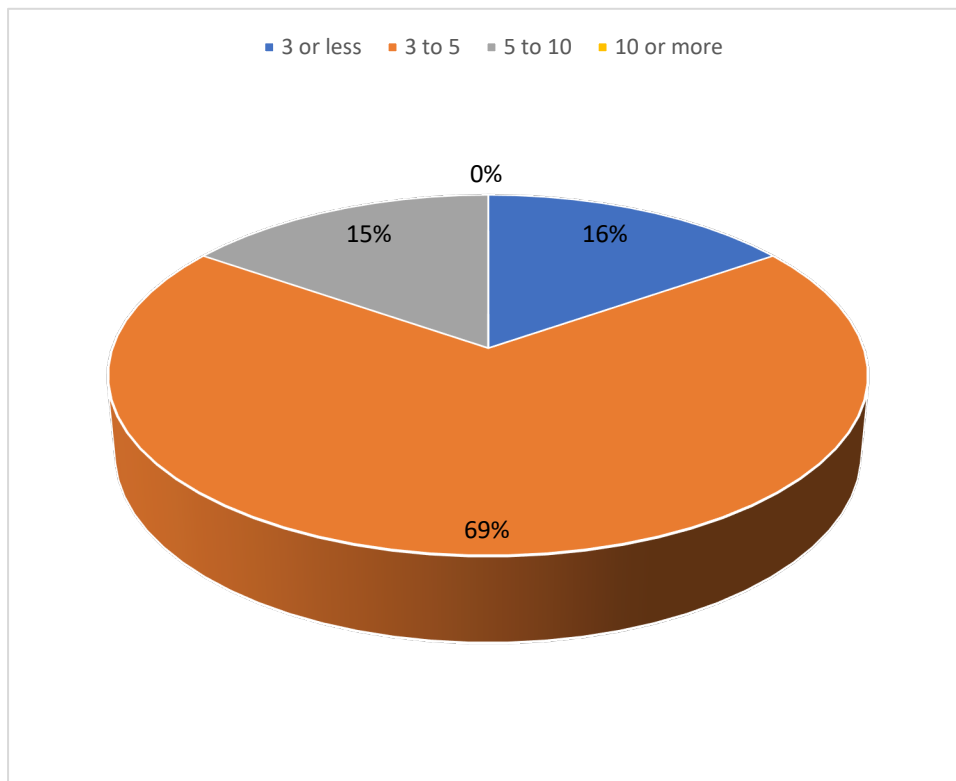
Number	Name	Description
10	Anonymous	56-hour work week. Staffed 24/7.
11	Anonymous	9 man shift, min. staffing of 7 with 2 off on approved leave. We recall off duty personnel to maintain 4 on station. Total recall of the Division for Structure Fires. Personnel are on a 56-hour work week.
12	Anonymous	48

13	Anonymous	53-hour work week 6 FF per shift
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Question 10. What are the minimum number of firefighters assigned per shift at the fire department that you represent?

- A. 3 or less
- B. 3-5
- C. 5-10
- D. 10 or more

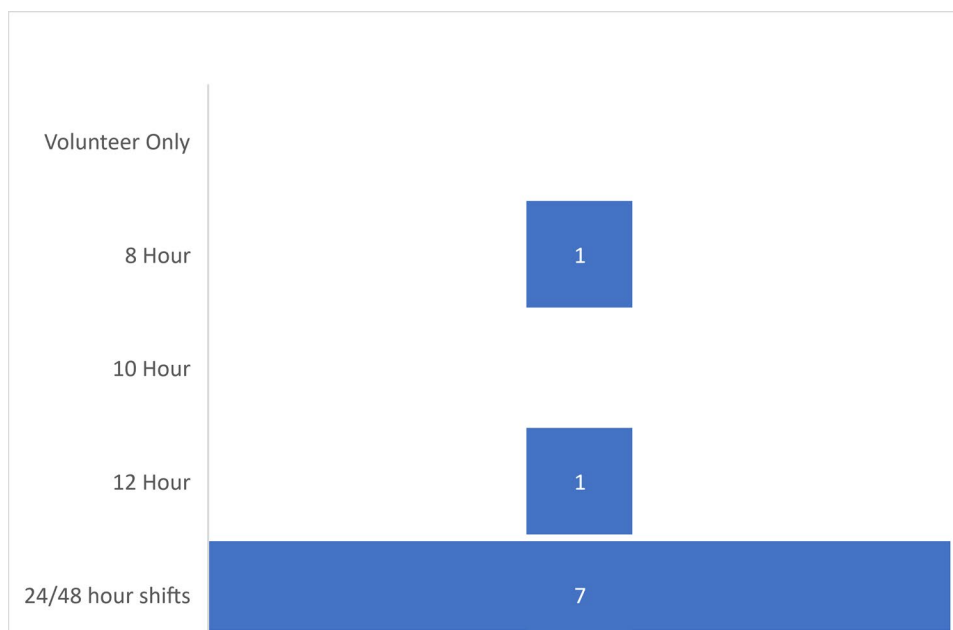
Minimum Firefighters	Department Responses	Percentage
3 or less	2	16%
3 – 5	9	69%
5 – 10	2	15%
10 or more	0	0%



Question

represent?

- A. 8,10,12-hour shifts – goes to question 13
- B. 24/48-hour shifts - goes to question 13
- C. 24/72-hour shifts - goes to question 13
- D. Other – goes to question 12



Question 12. Please explain (Regarding Question 11).

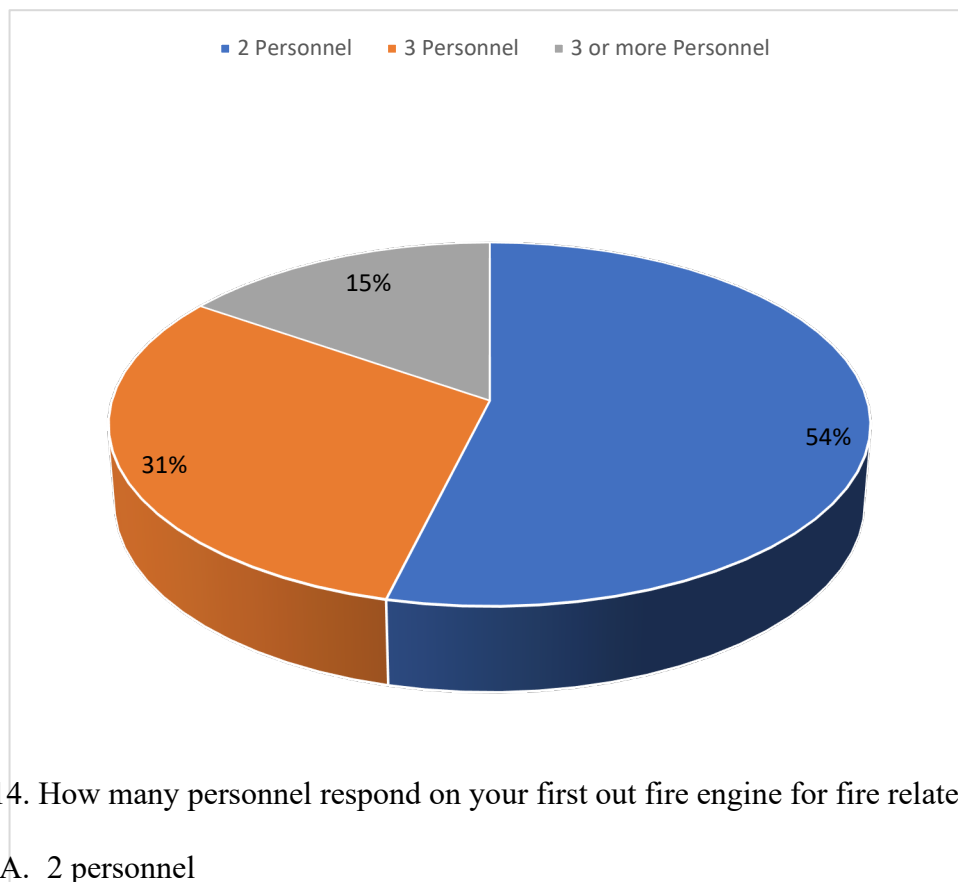
Number	Name	Description
1	Anonymous	scheduled 5 am to 5 pm then 5 pm till 5 am 7 days a week
2	Anonymous	We have full time staff that work 24/48 and the volunteers work to fill any open shifts. The volunteer shifts are 10 hour days, 14 hour nights, and 6 hour days.
3	Anonymous	See question 8
4	Anonymous	1 fulltime 40 hour/week, 6 fulltime (California Swing), Part-time shifts are broken down in eight-hour shifts.

5	Anonymous	California Swing Shift. 10 shifts per month
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Question 13. How many personnel respond on your first out medic unit to EMS calls?

- A. 2 personnel
- B. 3 personnel
- C. 3 or more personnel

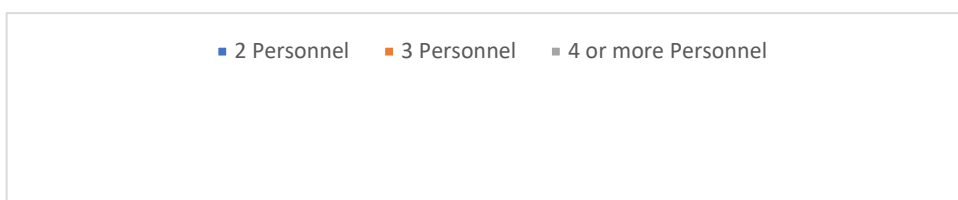
Personnel	Department Responses	Percentage
2 Personnel	7	54%
3 Personnel	4	31%
3 or more personnel	2	15%



Question 14. How many personnel respond on your first out fire engine for fire related incidents?

- A. 2 personnel
- B. 3 personnel
- C. 4 or more personnel

Personnel	Department Responses	Percentage
2 Personnel	2	15%
3 Personnel	7	54%
4 or more personnel	4	31%



Question 15. How many fire calls for service did your organization respond to in 2014 and then in 2019?

Number	Name	2014	2019
1	Anonymous	256	333
2	Anonymous	137	117
3	Anonymous	297	382
4	Anonymous	240	278
5	Anonymous	308	Not Available
6	Anonymous	341	347
7	Anonymous	240	278
8	Anonymous	577	574
9	Anonymous	364	403

10	Anonymous	257	257
11	Anonymous	386	508
12	Anonymous	237	237
13	Anonymous	194	212

Question 16. How many emergency medical services (EMS) calls for service did your organization respond to in 2014 and then 2019?

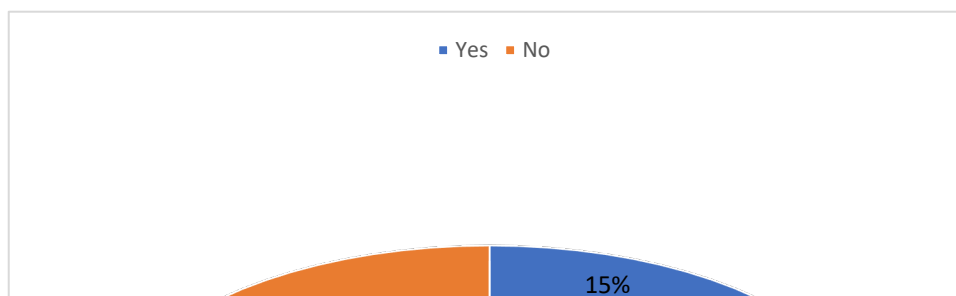
Number	Name	2014	2019
1	Anonymous	753	710
2	Anonymous	789	976
3	Anonymous	Not Available	Not Available
4	Anonymous	1,992	2,489
5	Anonymous	183	Not Available
6	Anonymous	999	1,176
7	Anonymous	1,987	2,489
8	Anonymous	949	1,176
9	Anonymous	1,545	1,810

10	Anonymous	767	684
11	Anonymous	1,841	2,111
12	Anonymous	1,147	1,409
13	Anonymous	1,324	1,817

Question 17. Does your fire department have a different deployment model on the nights and weekends than during the weekday?

- A. Yes
- B. No

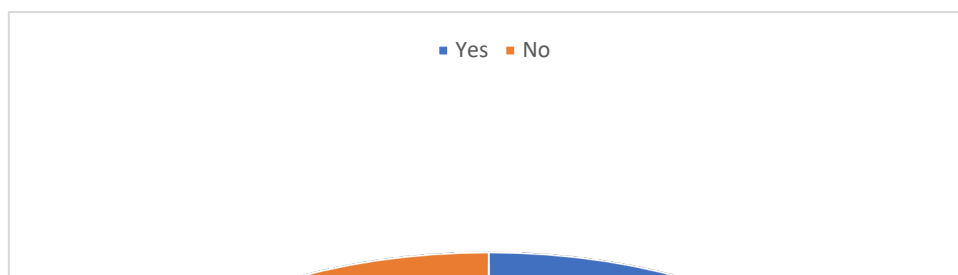
Question	Department Responses	Percentage
Yes	2	85%
No	11	15%



Question 18. Do you have an automatic aid agreement with surrounding fire departments?

- A. Yes – goes to question 19
- B. No – goes to question 20

Question	Department Responses	Percentage
Yes	10	77%
No	3	23%



Question 19. What types of incidents is part of the automatic aid agreement?

Number	Name	Description
1	Anonymous	structure fire response and water rescue
2	Anonymous	All structure fires - 3 departments plus mind (4) respond to any structure fire. This place any where from 12 to 16 firefighters on scene in less than 8 minutes, with a additional 2 Chief Officers.
3	Anonymous	Structure Fires
4	Anonymous	Right now it is only an MVAs in the south end of the township that we cover. We are working

		on Auto Aid with neighboring departments for structure fire response.
5	Anonymous	Structure Fires
6	Anonymous	Structural fire; alarm drop at high-hazard facilities; entrapments
7	Anonymous	Possible structure fires
8	Anonymous	Structure Fire
9	Anonymous	Fires Only

Question 19. What types of incidents is part of the automatic aid agreement? (Continued)

Number	Name	Description
10	Anonymous	Structure Fires

Question 20. What does your organization do to handle concurrent calls for service? (A concurrent incident is a new call that is dispatched while the initial call is still being handled).

- A. Cover it with volunteer firefighters. – goes to question 20
- B. Cover it with mutual aid? – goes to question 20
- C. Other – goes to question 21

Concurrent Incidents	Department Responses	Percentage
Cover it with volunteer firefighters	1	8%
Cover it with mutual aid	4	31%
Other	8	61%

Cover it with volunteer firefighters
 Cover it with mutual aid
 Other

Question 21. Please explain (regarding question 20).

Number	Name	Description
1	Anonymous	If we have enough staff we will cover the call but auto aid is also dispatched in the event we have a low staffing day.
2	Anonymous	We attempt to cover the incident with volunteers, but call mutual aid if there is no response. If we call for mutual aid we attempt to send a Fire Officer to assist.
3	Anonymous	depends on the time of day day of week and staff on station

4	Anonymous	If we do not have coverage on station then off duty fulltime or part-time respond.
5	Anonymous	Call-back personnel to maintain 4 personnel on station.
6	Anonymous	The call is dispatched for our department. If no volunteer response, then MA.
7	Anonymous	7 personnel min. on duty. If we had 2 Squad runs with two personnel on each, it would leave 3 personnel on station. We would recall one off duty personnel to maintain 4 on station

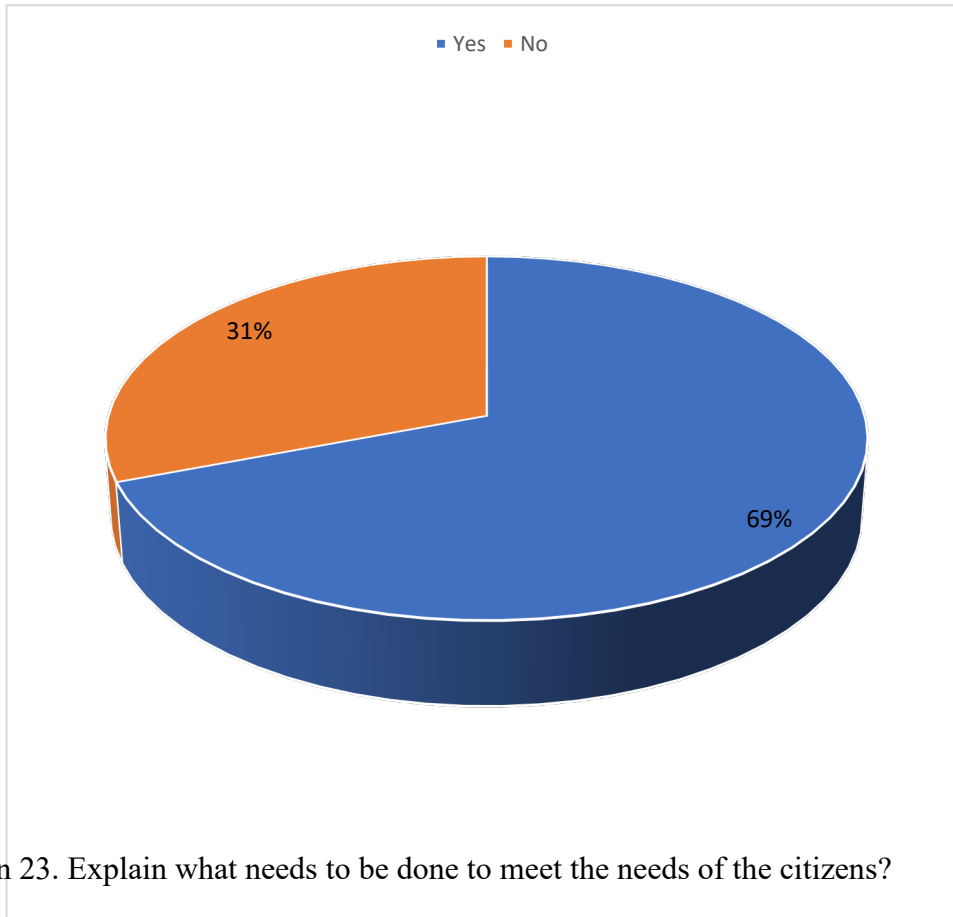
Question 21. Please explain (regarding question 20). (Continued)

Number	Name	Description
8	Anonymous	It is a combination of both. Sometime we have the staffing to be able to handle 3 EMS calls at once and sometime we have to call in mutual aid. Either way all concurrent calls are paged for local part-time members to respond.

Question 22. Is the current staffing model at the fire department that you represent meeting the needs of the community?

- A. Yes – goes to question 24
- B. No – goes to question 23

Staffing Model Working	Department Responses	Percentage
Yes	9	69%
No	4	31%



Question 23. Explain what needs to be done to meet the needs of the citizens?

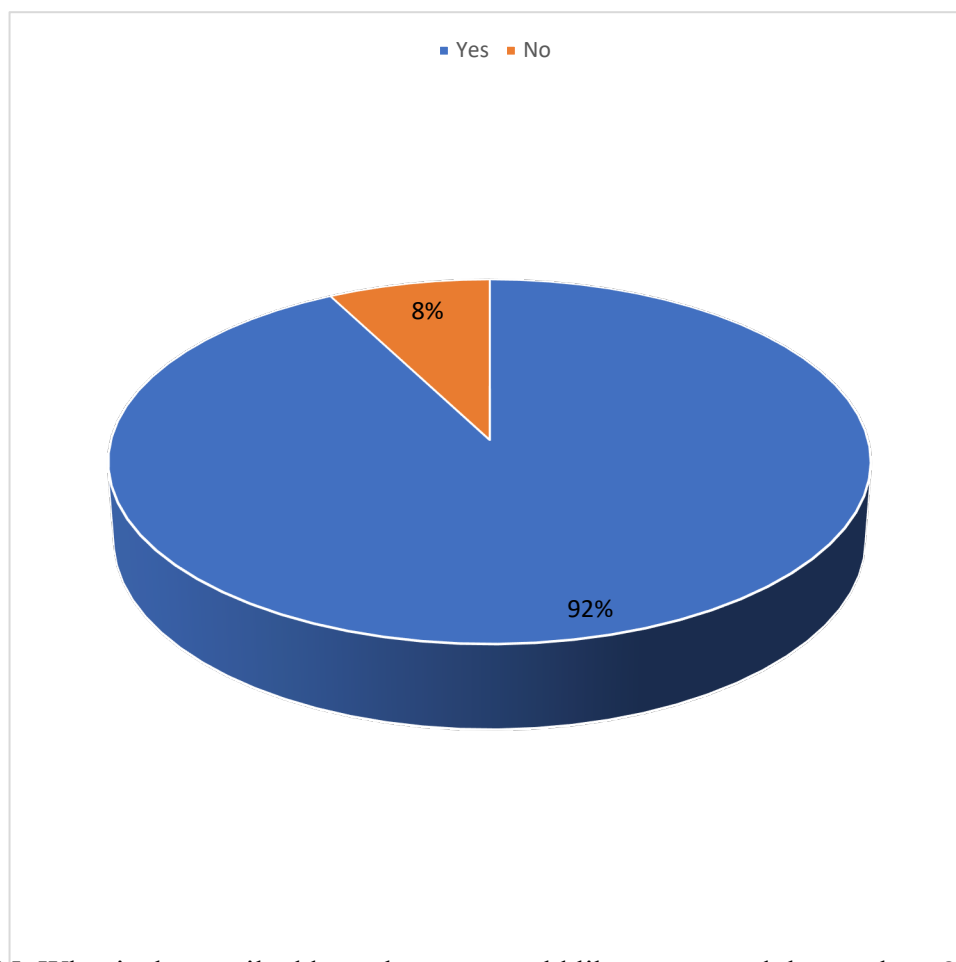
Number	Name	Description
1	Anonymous	increase staffing both day and night
2	Anonymous	With the decline of part-time membership, we need to transition to four fulltime members per shift.
3	Anonymous	Add additional staffing to have a minimum of 6 on a 24-hour shift.

4	Anonymous	It meets the needs during the daytime hours but not the evening hours after 1900
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Question 24. After the results are back, would you like a copy of the report?

- A. Yes – goes to question 25
- B. No – goes to question 26

Would you like a copy of the report	Department Responses	Percentage
Yes	12	Yes
No	1	No



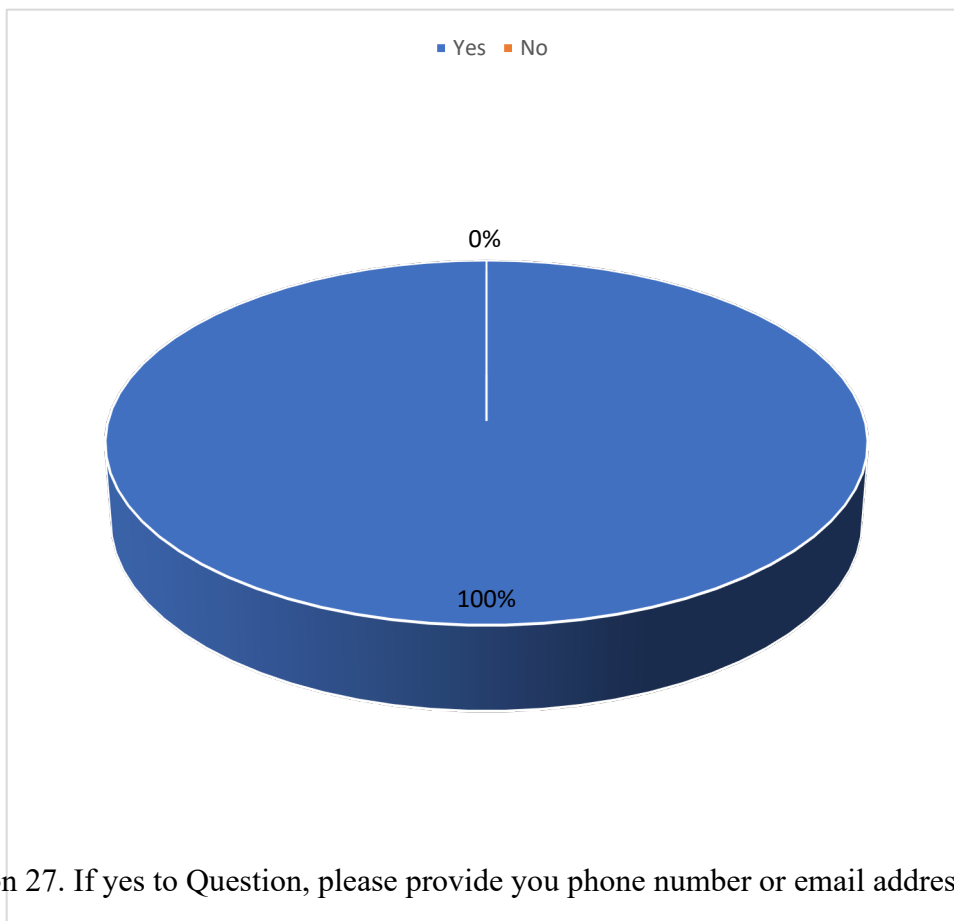
Question 25. What is the email address that you would like me to send the results to?

12 Responses

Question 26. If I have questions about your survey response, may I contact you?

- A. Yes – goes to question 27
- B. No – goes to question End

May I contact you	Department Responses	Percentage
Yes	13	100%
No	0	0%



13 Responses

Appendix CC – Staffing Survey Instructions

Fire Department Leadership,

I have been attending the Ohio Fire Chiefs Association Ohio Fire Executive program since January of 2019. Within this program, participants started an Applied Research Project. The topic that I have chosen is Alternative Staffing Strategies for the Whitehouse Fire Department. Within the Applied Research Project, I am researching how to be able to handle a concurrent EMS incident or an initial engine response to incidents on week-nights (5 p.m. to 7 a.m.) and weekends (Saturday morning 7 a.m. to Monday morning 7 a.m.) with limited availability of volunteer personnel.

			Levels Per Year	Level Per Year			Levels Per Year	Level Per Year
2014	2	0	2	2	1	0	0.7	0
2015	2	0	2	2	1	0	0.2	0
2016	2	0	2	2	1	0	0.7	0
2017	2	0	2	2	1	0	0.5	0
2018	2	0	2	2	1	1	1.6	0
2019	2	0	2	2	1	1	1.7	0

Appendix EE – Minimum Staffing on Weekends from Saturday at 7 a.m. to Monday at 7 a.m. Based on Year.

Life Squad EMS and ALS Only					Fire Side EMS and Fire Response			
Year	Full- Time	Part- Time	Average Life	Minimum Life	Full- Time	Part Time	Average Fire	Minimum Fire

	Per Shift	Per Shift	Squad Staffing Levels Per Year	Squad Staffing Level Per Year	Per Shift	Per Shift	Department Staffing Levels Per Year	Department Staffing Level Per Year
2014	2	0	2	2	1	1	0.1	0
2015	2	0	2	2	1	1	0.2	0
2016	2	0	2	2	1	1	0.2	0
2017	2	0	2	2	1	1	0.26	0
2018	2	0	2	2	1	1	1.59	0
2019	2	0	2	2	1	1	1.57	0

Appendix FF – Number of Times On-Call was Utilized on Weeknights 5 p.m. to 7 a.m.

On Call	Number of Times on Call was Utilized	Number of Weeknights in a year	Percentage of on Call Days
2014	N/A	261	N/A
2015	N/A	261	N/A
2016	N/A	261	N/A

2017	N/A	260	N/A
2018	56	261	19%
2019	41	261	15%

Appendix GG – Number of Times On-Call was Utilized on Weekends from Saturday 7
a.m. to Monday 7 a.m.

On Call	Number of Times on Call was Utilized	Number of Weekend Days in a year	Percentage of on Call Days
2014	N/A	104	N/A
2015	N/A	104	N/A

2016	N/A	105	N/A
2017	N/A	105	N/A
2018	26	104	34%
2019	42	104	40%

Appendix HH – Medic Unit Response Times in Minutes While Short Staffed on
Weeknights 5 p.m. to 7 a.m.

Time	2014	2015	2016	2017	2018	2019
5 p.m. - 6 p.m.	10	11	8	8	8	7
6 p.m. - 7 p.m.	11	9	8	10	7	8
7 p.m. - 8p.m.	10	10	11	9	10	9

8 p.m. - 9 p.m.	10	9	9	11	8	6
9 p.m. - 10 p.m.	9	10	10	9	8	7
10 p.m. - 11 p.m.	9	9	10	9	9	8
11 p.m. - 12 a.m.	8	10	8	10	10	9
12 a.m. - 1 a.m.	12	10	10	11	10	8
1 a.m. - 2 a.m.	12	11	11	11	11	9
2 a.m. - 3 a.m.	14	9	9	10	10	7
3 a.m. - 4 a.m.	14	12	10	11	11	0
4 a.m. - 5 a.m.	14	9	10	11	11	10
5 a.m. - 6 a.m.	12	10	11	12	12	7
6 a.m. - 7 a.m.	15	11	11	12	12	8

Appendix II – Medic Unit Response Times while Full-Staffed on Weeknights from 5
p.m. to 7 a.m.

Time	2014	2015	2016	2017	2018	2019
5 p.m. - 6 p.m.	7	9	6	6	8	4
6 p.m. - 7 p.m.	8	7	6	7	6	6
7 p.m. - 8 p.m.	8	8	9	6	10	5

8 p.m. – 9 p.m.	7	7	7	7	7	5
9 p.m. – 10 p.m.	7	8	8	7	7	6
10 p.m. – 11 p.m.	10	7	8	8	6	6
11 p.m. – 12 a.m.	6	8	6	7	7	5
12 a.m. – 1 a.m.	10	8	8	8	7	7
1 a.m. – 2 a.m.	10	9	9	7	7	7
2 a.m. – 3 a.m.	12	7	7	8	7	8
3 a.m. – 4 a.m.	10	10	8	9	10	7
4 a.m. – 5 a.m.	12	7	8	8	10	7
5 a.m. – 6 a.m.	10	8	9	10	11	7
6 a.m. – 7 a.m.	13	9	9	10	10	6

Appendix JJ – Engine Response Times in Minutes While Short Staffed on Weeknights 5

p.m. to 7 a.m.

Time	2014	2015	2016	2017	2018	2019
5 p.m. - 6 p.m.	10	10	10	12	10	10
6 p.m. - 7 p.m.	10	11	10	10	8	9
7 p.m. - 8p.m.	10	10	10	11	12	10

8 p.m. - 9 p.m.	9	10	11	12	10	11
9 p.m. - 10 p.m.	9	9	10	12	11	10
10 p.m. - 11 p.m.	8	8	9	9	10	10
11 p.m. - 12 a.m.	9	9	10	10	12	10
12 a.m. - 1 a.m.	10	10	9	10	10	11
1 a.m. - 2 a.m.	10	No Calls	10	No Calls	10	10
2 a.m. - 3 a.m.	10	11	No Calls	No Calls	10	12
3 a.m. - 4 a.m.	10	10	10	11	12	10
4 a.m. - 5 a.m.	No Calls	10	No Calls	10	12	10
5 a.m. - 6 a.m.	No Calls	No Calls	10	12	13	10
6 a.m. - 7 a.m.	12	12	10	12	10	11

Appendix KK – Engine Response Times while Full-Staffed on Weeknights from 5 p.m.
to 7 a.m.

Time	2014	2015	2016	2017	2018	2019
5 p.m. - 6 p.m.	7	9	6	6	6	7
6 p.m. - 7 p.m.	8	7	6	7	6	7

7 p.m. – 8 p.m.	8	8	9	6	5	5
8 p.m. – 9 p.m.	7	7	7	7	6	6
9 p.m. – 10 p.m.	7	8	8	7	5	6
10 p.m. – 11 p.m.	10	7	8	8	8	7
11 p.m. – 12 a.m.	6	8	6	7	6	6
12 a.m. – 1 a.m.	10	8	8	8	14	13
1 a.m. – 2 a.m.	10	9	9	7	13	11
2 a.m. – 3 a.m.	12	7	7	8	6	6
3 a.m. – 4 a.m.	12	10	8	9	6	6
4 a.m. – 5 a.m.	12	7	8	8	14	11
5 a.m. – 6 a.m.	10	8	9	10	6	7
6 a.m. – 7 a.m.	13	9	9	10	10	9

Appendix LL – Medic Unit Response Times in Minutes While Being Short Staffed on the
Weekends from Saturday at 7 a.m. to Monday at 7 am.

Time	2014	2015	2016	2017	2018	2019
Saturday						

7 a.m. – 8 a.m.	10	9	8	9	9	8
8 a.m. – 9 a.m.	11	10	9	10	11	9
9 a.m. – 10 a.m.	10	9	10	10	10	10
10 a.m. – 11 a.m.	12	10	9	10	11	10
11 a.m. – 12 p.m.	11	8	10	10	11	10
12 p.m. – 1 p.m.	10	7	9	9	10	9
1 p.m. – 2 p.m.	9	9	9	11	9	8
2 p.m. – 3 p.m.	10	7	8	10	8	9
3 p.m. – 4 p.m.	11	9	9	9	9	8
4 p.m. – 5 p.m.	10	8	10	10	8	9
5 p.m. – 6 p.m.	11	7	11	9	9	10
6 p.m. – 7 p.m.	10	8	12	10	10	10

Appendix LL – Medic Unit Response Times in Minutes While Being Short Staffed on the Weekends from Saturday at 7 a.m. to Monday at 7 am (Cont).

Time	2014	2015	2016	2017	2018	2019
Saturday						

7 p.m. – 8 p.m.	10	9	10	10	10	9
8 p.m. – 9 p.m.	8	9	9	9	10	8
9 p.m. – 10 p.m.	9	9	9	8	11	9
10 p.m. – 11 p.m.	8	8	8	9	12	8
11 p.m. – 12 a.m.	9	9	9	8	9	9
12 a.m. – 1 a.m.	10	12	8	9	8	9
1 a.m. – 2 a.m.	9	10	7	9	9	10
2 a.m. – 3 a.m.	13	13	9	10	9	11
3 a.m. – 4 a.m.	13	11	12	11	10	10
4 a.m. – 5 a.m.	13	12	12	12	10	9
5 a.m. – 6 a.m.	14	10	11	11	11	8
6 a.m. – 7 a.m.	13	11	10	10	10	10

Appendix LL – Medic Unit Response Times in Minutes While Being Short Staffed on the
Weekends from Saturday at 7 a.m. to Monday at 7 am (Cont).

Time	2014	2015	2016	2017	2018	2019
Sunday						

7 a.m. – 8 a.m.	10	10	11	10	10	9
8 a.m. – 9 a.m.	8	10	10	8	9	8
9 a.m. – 10 a.m.	9	10	10	9	9	9
10 a.m. – 11 a.m.	8	11	9	9	8	7
11 a.m. – 12 p.m.	9	9	8	10	10	9
12 p.m. – 1 p.m.	10	8	9	10	9	8
1 p.m. – 2 p.m.	10	9	7	8	9	8
2 p.m. – 3 p.m.	9	11	10	8	9	8
3 p.m. – 4 p.m.	8	9	10	8	9	9
4 p.m. – 5 p.m.	6	8	8	8	8	9
5 p.m. – 6 p.m.	5	10	9	8	7	9
6 p.m. – 7 p.m.	8	10	8	8	9	8

Appendix LL – Medic Unit Response Times in Minutes While Being Short Staffed on the
Weekends from Saturday at 7 a.m. to Monday at 7 am.

Time	2014	2015	2016	2017	2018	2019
Sunday						

7 p.m. – 8 p.m.	10	11	10	9	8	8
8 p.m. – 9 p.m.	10	10	9	9	8	8
9 p.m. – 10 p.m.	9	10	10	8	9	8
10 p.m. – 11 p.m.	8	11	10	10	10	10
11 p.m. – 12 a.m.	9	9	9	9	8	9
12 a.m. – 1 a.m.	9	10	10	10	11	9
1 a.m. – 2 a.m.	8	9	10	9	10	10
2 a.m. – 3 a.m.	9	11	10	11	10	10
3 a.m. – 4 a.m.	10	12	10	10	12	10
4 a.m. – 5 a.m.	10	10	10	11	12	10
5 a.m. – 6 a.m.	10	10	10	10	12	11
6 a.m. – 7 a.m.	12	12	10	10	10	10

Appendix MM– Medic Unit Response Times on Weekends from Saturday at 7 a.m. to
Monday at 7 a.m.

Time	2014	2015	2016	2017	2018	2019
Saturday						

7 a.m. – 8 a.m.	10	9	8	9	9	8
8 a.m. – 9 a.m.	11	10	9	10	11	9
9 a.m. – 10 a.m.	10	9	10	10	10	10
10 a.m. – 11 a.m.	12	10	9	10	11	10
11 a.m. – 12 p.m.	11	8	10	10	11	10
12 p.m. – 1 p.m.	10	7	9	9	10	9
1 p.m. – 2 p.m.	9	9	9	11	9	8
2 p.m. – 3 p.m.	10	7	8	10	8	9
3 p.m. – 4 p.m.	11	9	9	9	9	8
4 p.m. – 5 p.m.	10	8	10	10	8	9
5 p.m. – 6 p.m.	11	7	11	9	9	10
6 p.m. – 7 p.m.	10	8	12	10	10	10

Appendix MM – Medic Unit Response Times on Weekends from Saturday at 7 a.m. to
Monday at 7 a.m. (Cont).

Time	2014	2015	2016	2017	2018	2019
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Saturday						
7 p.m. – 8 p.m.	10	9	10	10	10	9
8 p.m. – 9 p.m.	8	9	9	9	10	8
9 p.m. – 10 p.m.	9	9	9	8	11	9
10 p.m. – 11 p.m.	8	8	8	9	12	8
11 p.m. – 12 a.m.	9	9	9	8	9	9
12 a.m. – 1 a.m.	10	12	8	9	8	9
1 a.m. – 2 a.m.	9	10	7	9	9	10
2 a.m. – 3 a.m.	13	13	9	10	9	11
3 a.m. – 4 a.m.	13	11	12	11	10	10
4 a.m. – 5 a.m.	13	12	12	12	10	9
5 a.m. – 6 a.m.	14	10	11	11	11	8
6 a.m. – 7 a.m.	13	11	10	10	10	10

Appendix MM – Medic Unit Response Times on Weekends from Saturday at 7 a.m. to
Monday at 7 a.m. (Cont).

Time	2014	2015	2016	2017	2018	2019

Sunday						
7 a.m. – 8 a.m.	10	10	11	10	10	9
8 a.m. – 9 a.m.	8	10	10	8	9	8
9 a.m. – 10 a.m.	9	10	10	9	9	9
10 a.m. – 11 a.m.	8	11	9	9	8	7
11 a.m. – 12 p.m.	9	9	8	10	10	9
12 p.m. – 1 p.m.	10	8	9	10	9	8
1 p.m. – 2 p.m.	10	9	7	8	9	8
2 p.m. – 3 p.m.	9	11	10	8	9	8
3 p.m. – 4 p.m.	8	9	10	8	9	9
4 p.m. – 5 p.m.	6	8	8	8	8	9
5 p.m. – 6 p.m.	5	10	9	8	7	9
6 p.m. – 7 p.m.	8	10	8	8	9	8

Appendix MM – Medic Unit Response Times on Weekends from Saturday at 7 a.m. to
Monday at 7 a.m.

Time	2014	2015	2016	2017	2018	2019
Sunday						
7 p.m. – 8 p.m.	10	11	10	9	8	8
8 p.m. – 9 p.m.	10	10	9	9	8	8
9 p.m. – 10 p.m.	9	10	10	8	9	8
10 p.m. – 11 p.m.	8	11	10	10	10	10
11 p.m. – 12 a.m.	9	9	9	9	8	9
12 a.m. – 1 a.m.	9	10	10	10	11	9
1 a.m. – 2 a.m.	8	9	10	9	10	10
2 a.m. – 3 a.m.	9	11	10	11	10	10
3 a.m. – 4 a.m.	10	12	10	10	12	10
4 a.m. – 5 a.m.	10	10	10	11	12	10
5 a.m. – 6 a.m.	10	10	10	10	12	11
6 a.m. – 7 a.m.	12	12	10	10	10	10

Appendix NN – Engine Response Times in Minutes While Being Short Staffed on the
Weekends from Saturday at 7 a.m. to Monday at 7 a.m.

Time	2014	2015	2016	2017	2018	2019
Saturday						
7 a.m. – 8 a.m.	10	12	11	10	10	10
8 a.m. – 9 a.m.	9	10	12	12	12	12
9 a.m. – 10 a.m.	8	10	10	11	10	10
10 a.m. – 11 a.m.	9	13	11	12	10	10
11 a.m. – 12 p.m.	9	12	10	10	11	12
12 p.m. – 1 p.m.	9	10	11	10	10	12
1 p.m. – 2 p.m.	10	10	12	11	11	10
2 p.m. – 3 p.m.	10	12	10	12	11	10
3 p.m. – 4 p.m.	9	10	10	10	10	12
4 p.m. – 5 p.m.	10	11	11	14	10	11
5 p.m. – 6 p.m.	10	9	12	10	11	10
6 p.m. – 7 p.m.	10	10	11	10	10	11

Appendix NN – Engine Response Times in Minutes While Being Short Staffed on the
Weekends from Saturday at 7 a.m. to Monday at 7 a.m. (Cont).

Time	2014	2015	2016	2017	2018	2019
Saturday						
7 p.m. – 8 p.m.	10	10	11	12	10	10
8 p.m. – 9 p.m.	12	11	12	11	10	10
9 p.m. – 10 p.m.	10	11	12	10	11	12
10 p.m. – 11 p.m.	10	10	12	10	11	10
11 p.m. – 12 a.m.	12	11	12	10	10	11
12 a.m. – 1 a.m.	11	10	10	12	10	10
1 a.m. – 2 a.m.	10	No Calls	10	No Calls	10	10
2 a.m. – 3 a.m.	11	10	No Calls	No Calls	10	11
3 a.m. – 4 a.m.	11	10	10	11	10	10
4 a.m. – 5 a.m.	No Calls	10	No Calls	No Calls	10	10
5 a.m. – 6 a.m.	No Calls	No Calls	10	10	11	11
6 a.m. – 7 a.m.	10	10	10	No Calls	10	10

Appendix NN – Engine Response Times in Minutes While Being Short Staffed on the Weekends from Saturday at 7 a.m. to Monday at 7 a.m. (Cont).

Time	2014	2015	2016	2017	2018	2019
Sunday						
7 a.m. – 8 a.m.	10	10	12	10	8	9
8 a.m. – 9 a.m.	10	10	10	1	11	9
9 a.m. – 10 a.m.	10	10	12	15	14	8
10 a.m. – 11 a.m.	10	10	9	10	9	9
11 a.m. – 12 p.m.	12	9	10	12	10	10
12 p.m. – 1 p.m.	10	10	10	15	15	12
1 p.m. – 2 p.m.	10	12	11	12	11	11
2 p.m. – 3 p.m.	10	10	12	10	11	10
3 p.m. – 4 p.m.	10	11	10	12	10	12
4 p.m. – 5 p.m.	11	10	11	10	10	10
5 p.m. – 6 p.m.	10	10	10	12	10	11
6 p.m. – 7 p.m.	10	10	10	10	10	11

Appendix NN – Engine Response Times in Minutes While Being Short Staffed on the
Weekends from Saturday at 7 a.m. to Monday at 7 a.m (Cont).

Time	2014	2015	2016	2017	2018	2019
Sunday						
7 p.m. – 8 p.m.	10	10	12	10	10	12
8 p.m. – 9 p.m.	9	12	12	12	12	10
9 p.m. – 10 p.m.	9	11	12	11	11	12
10 p.m. – 11 p.m.	10	12	10	12	11	11
11 p.m. – 12 a.m.	9	10	11	11	11	12
12 a.m. – 1 a.m.	10	12	12	12	11	11
1 a.m. – 2 a.m.	12	No Calls	12	No Calls	9	9
2 a.m. – 3 a.m.	10	12	No Calls	No Calls	9	9
3 a.m. – 4 a.m.	10	12	12	11	9	11
4 a.m. – 5 a.m.	No Calls	12	No Calls	No Calls	12	10
5 a.m. – 6 a.m.	No Calls	No Calls	11	11	10	10
6 a.m. – 7 a.m.	10	11	12	No Calls	11	11

Appendix OO– Engine Response Times per Hour on Weekends from Saturday at 7 a.m.
to Monday at 7 a.m.

Time	2014	2015	2016	2017	2018	2019
Saturday						
7 a.m. – 8 a.m.	10	12	11	10	10	10
8 a.m. – 9 a.m.	9	10	12	12	12	12
9 a.m. – 10 a.m.	8	10	10	11	10	10
10 a.m. – 11 a.m.	9	13	11	12	10	10
11 a.m. – 12 p.m.	9	12	10	10	11	12
12 p.m. – 1 p.m.	9	10	11	10	10	12
1 p.m. – 2 p.m.	10	10	12	11	11	10
2 p.m. – 3 p.m.	10	12	10	12	11	10
3 p.m. – 4 p.m.	9	10	10	10	10	12
4 p.m. – 5 p.m.	10	11	11	14	10	11
5 p.m. – 6 p.m.	10	9	12	10	11	10
6 p.m. – 7 p.m.	10	10	11	10	10	11

Appendix OO – Engine Response Times per Hour on Weekends from Saturday at 7 a.m.
to Monday at 7 a.m. (Cont).

Time	2014	2015	2016	2017	2018	2019
Saturday						
7 p.m. – 8 p.m.	10	10	11	12	10	10
8 p.m. – 9 p.m.	12	11	12	11	10	10
9 p.m. – 10 p.m.	10	11	12	10	11	12
10 p.m. – 11 p.m.	10	10	12	10	11	10
11 p.m. – 12 a.m.	12	11	12	10	10	11
12 a.m. – 1 a.m.	11	10	10	12	10	10
1 a.m. – 2 a.m.	10	No Calls	10	No Calls	10	10
2 a.m. – 3 a.m.	11	10	No Calls	No Calls	10	11
3 a.m. – 4 a.m.	11	10	10	11	10	10
4 a.m. – 5 a.m.	No Calls	10	No Calls	No Calls	10	10
5 a.m. – 6 a.m.	No Calls	No Calls	10	10	11	11
6 a.m. – 7 a.m.	10	10	10	No Calls	10	10

Appendix OO – Engine Response Times per Hour on Weekends from Saturday at 7 a.m.
to Monday at 7 a.m. (Cont).

Time	2014	2015	2016	2017	2018	2019
Sunday						
7 a.m. – 8 a.m.	10	10	12	10	8	9
8 a.m. – 9 a.m.	10	10	10	10	11	9
9 a.m. – 10 a.m.	10	10	12	15	9	8
10 a.m. – 11 a.m.	10	10	9	10	9	9
11 a.m. – 12 p.m.	12	9	10	12	10	10
12 p.m. – 1 p.m.	10	10	10	15	12	12
1 p.m. – 2 p.m.	10	12	11	12	11	11
2 p.m. – 3 p.m.	10	10	12	10	11	10
3 p.m. – 4 p.m.	10	11	10	12	10	12
4 p.m. – 5 p.m.	11	10	11	10	10	10
5 p.m. – 6 p.m.	10	10	10	12	10	11
6 p.m. – 7 p.m.	10	10	10	10	10	11

Appendix OO – Engine Response Times per Hour on Weekends from Saturday at 7 a.m.
to Monday at 7 a.m.

Time	2014	2015	2016	2017	2018	2019
Sunday						
7 p.m. – 8 p.m.	10	10	12	10	10	12
8 p.m. – 9 p.m.	9	12	12	12	12	10
9 p.m. – 10 p.m.	9	11	12	11	11	12
10 p.m. – 11 p.m.	10	12	10	12	11	11
11 p.m. – 12 a.m.	9	10	11	11	11	12
12 a.m. – 1 a.m.	10	12	12	12	11	11
1 a.m. – 2 a.m.	12	No Calls	12	No Calls	9	9
2 a.m. – 3 a.m.	10	12	No Calls	No Calls	9	9
3 a.m. – 4 a.m.	10	12	12	11	9	11
4 a.m. – 5 a.m.	No Calls	12	No Calls	No Calls	12	10
5 a.m. – 6 a.m.	No Calls	No Calls	11	11	10	10
6 a.m. – 7 a.m.	10	11	12	No Calls	11	11