AN EVALUATION OF MONROE FIRE DEPARTMENT RESPONSE TIMES

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Certification Statement

I hereby do certify that this paper constitutes my own work and product, that where the language of others is set forth, quotation marks indicate so, and that appropriate credit has been given where I have used the language, ideas, expression, or writings of others.

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Abstract

The problem is The Monroe Fire Department is experiencing a trend of increasing response times to emergency incident scenes in the City of Monroe, Wisconsin. The purpose of this research is to identify the cause(s) of the long response times that exceed the national consensus standards. What are the industry standards for response times in a volunteer department? What response times, if any, do the firefighters believe are achievable or appropriate, and what do the Monroe firefighters feel are the causes of excessive response times? What are the response times based on time of day and location of incident? What measures, if any, have already been put in place to address deficiencies in response times? What, if any, are the response standards used by departments similar in size to Monroe, and how have they addressed their response deficiencies? The research was descriptive in that it was done to determine and report the present state of fire incident response (USFA, EFO Operational Policies and Procedures, 2009). This was completed through a review of Monroe's and other like departments' response statistics and policies, and personal interviews with active personnel from The Monroe Fire Department and other like departments. The recommendations derived from the research are: to develop guidelines to more completely document response times; to modify response policies to improve turnout and travel time; and to aggressively peruse construction and occupancy of a west-side fire station. Department and City leadership must continue to recognize the motivating factors in relation to paid-on-call firefighter response and should develop, market, and fully implement policies to encourage employer support of a successful paid-on-call fire department. In this manner, response times can be improved, property can be saved, and the community will appreciate the value of the paid-on-call system.

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Introduction

During the last five years, there has been a general decrease in participation levels by the paid-on-call members of The Monroe Fire Department. Additionally, more of our commercial businesses have relocated to the west side of the city where most growth is taking place. Along with this trend go our paid-on-call members because of the relocation of their primary jobs along with those businesses. This has led to decreased staffing at emergency incidents, and longer response times.

The purpose of this research is to identify the extent of the degradation of response times and the root causes. Through this research, policies and procedures may be able to be modified to improve response times. The specific research questions are: What are the industry standards for response times in a volunteer department? What response times, if any, do the firefighters believe are achievable or appropriate? If response times are found to be excessive, what do the Monroe firefighters feel are the causes? What are the response times, based on time of day and location of incident? What measures, if any, have already been put in place to address deficiencies in response times? What, if any, are the response standards used by departments similar in size to Monroe, and how have they addressed their response deficiencies?

Background & Significance

The City of Monroe Fire Department is a combination department made up of 51 paid-on-call volunteers and three career members. The department protects a city of 10,991 citizens and a large part of Green County, with a rural population of 3,813, for a total served population of 14,804. Additionally, all of Green County (or 33,647 residents) rely on The Monroe Fire Department through automatic or mutual aid. The department responds to over 300 fire- and

emergency-related calls per year for fire suppression and various rescue situations. The department does not routinely respond to EMS calls and has no patient transport capabilities.

The department is 100% NIMS compliant, and all members have completed IS-100, IS-200, and IS-700. All members of the department are also NFPA 1001 compliant. Additionally, all officers have completed IS-300 and all chief officers have completed IS-400.

Monroe has become a major tourist destination in recent years; several community festivals draw large crowds to the area. For example, in September of 2008, over 250,000 people attended our bi-annual Cheese Days festivities held in Monroe. The City of Monroe is also a major commercial and industrial area, with plastics production and worldwide shipping and handling of many consumer products (including automobile parts and many food processing concerns, such as candy manufacturing and packaging, meat production, and cheese production—our major industry). The City of Monroe is a regional shopping hub. Traffic studies have shown that over 20,000 vehicles a day currently pass through the city or are used to visit the city to shop, dine or conduct business, including 3,000 per day used by those who come to conduct business at one of the many Green County government buildings in Monroe (the county seat). The department operates four engine companies, one Ladder Company, and several support apparatus from a single station in the central business area. The department enjoys a City ISO classification of 3, with a Class 8B rating in the three rural townships served.

The suppression/operations division is staffed primarily through paid-on-call personnel. Upon receipt of a call, the Green County Sheriff's Office (911 PSAP) alerts the members via pager. Most members are allowed to leave their employment to respond to calls, although some must wait for a second alarm to be transmitted prior to being allowed to leave. Most of our employers are located along the western edge of the city so firefighters must travel

approximately 2 miles to the station for response. Many times these apparatus respond back to the same area where the firefighters were working prior to responding to the call, as 38% of department calls are in this west-side business district (as shown in Figures 1 and 2).

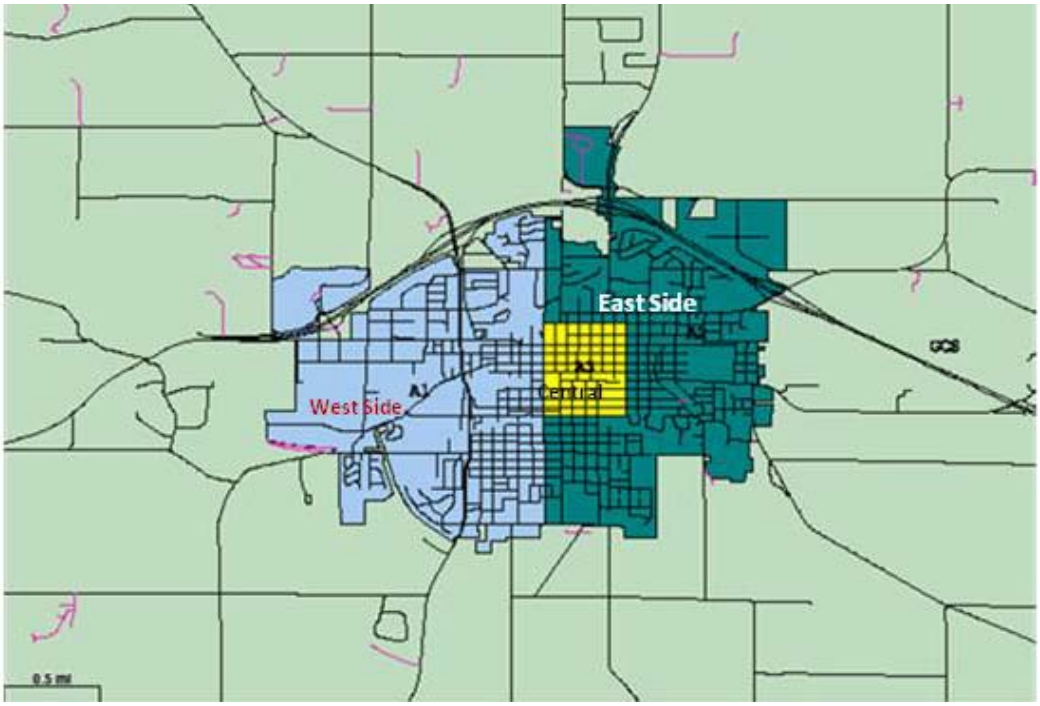

Figure 1. Service Area Map-City of Monroe Fire Department

Calendar Year	Eastside Calls	%	Central Calls	%	Westside Calls	%	Total
2005	121	67%	14	8%	45	25%	180
2006	125	64%	15	8%	56	29%	196
2007	119	58%	21	10%	64	31%	204
2008	110	58%	17	9%	63	33%	190
2009	114	56%	13	6%	78	38%	205

Figure 2. Call Distribution by Service District (2005-2009)

Once firefighters arrive at the station, they pull a rider-position tag from a status board in the station, don their PPE, and board the apparatus. They then place accountability tags on a passport system and the truck leaves the station. Eight-person crews are used on the first alarm engine companies and six-person crews are used on the first alarm ladder company. Each apparatus is required to be staffed by at least one of the 10 department officers before leaving the station.

An additional issue is that nearly all the residential areas are located in the central and eastern areas of the city so when firefighters are not working, they are located in these areas. Because of this factor, simply moving the fire station to a westerly location is also not a viable option, although an addition of a second station has been discussed.

For years, the "rule of thumb" has been to send as many apparatus as needed to transport the firefighters who report for the call. Response to emergency calls averages 18 personnel. This has led to multiple apparatus used as personnel transporters only. Many times the apparatus, as well as the personnel, are not needed but are allowed to respond anyway. A command officer is on duty and responds to all calls; career members staff this position Monday 0700 hrs through Friday at 1600 hrs. Paid-on-call officers staff this position on weekends and holidays, using a rotating schedule (every tenth weekend). In this manner, the command position is staffed 24/7/365. This on-call officer handles approximately 100 routine calls each year, such as carbon monoxide checks, illegal burning and other public service calls, without the need to alert suppression forces.

While the city fire data shows most alarms are answered in 4 minutes (ACS Firehouse Software, 2010), the data is misleading since, in reality, the public safety answering point (PSAP) records only the arrival time of our first arriving unit. Many times arrival times are not

recorded unless the incident command officer makes note of arrival time or the company officer activates a touch screen command on the apparatus mobile data computer. In cases when the data for each arriving apparatus has been recorded, actual times show an average response time of eight to twelve minutes for the first arriving engine company, ten to fourteen minutes for arrival of the Ladder Company, and ten to sixteen minutes for the second arriving engine company. Of course, these times are much higher for rural responses.

These factors, together with traffic congestion in the city, have created longer response times in many areas of the city. On one occasion, prior to special council meeting on March 9, 2010, the City Council President (and former fire chief) indicated that he felt turnout time for a call on March 8 at approximately 1020 hrs was "over 6 minutes" (C. Koch, Personal Communication, March 9, 2010). In January, 2009, a thirteen-minute response to a fire at an ethanol plant resulted in significant damage that could have been avoided. There have been numerous other responses to major incidents over the last five years where response times were over 10 minutes (as shown in Appendix B).

While life safety of the general public has been a primary consideration, preserving property and tax base must also be considered when determining what response times are appropriate. The state has mandated that tax rates must not be increased. Because of this, the only way to increase revenues is to promote growth in the community. Improved capabilities demonstrated by lower property loss and lower insurance rates will encourage businesses to locate in our community.

Lastly, firefighter safety has to be our very highest priority. Attacking fires earlier and more aggressively can prevent room and content fires from reaching flashover and extending. While we have been discussing first arriving apparatus, we must also consider if our second due

apparatus are adequately responding and adequately staffed. Firefighters must know when to expect help from second- and subsequent-arriving apparatus.

The ability to improve response times and improve life safety and property conservation efforts must start with a thorough understanding of the components that make up total response times. Consideration must be given to current and future resource availability, based upon today's economic climate, so that we can find ways to improve without assuming additional long-term funding burdens that may not be sustainable. Part of this study must also be ways to improve data collection so future determinations can be made using available data that is accurate and defensible. This study aligns with the Executive Fire Officer Program's Executive Development course that focuses on critical thinking and objective analysis of current capabilities, strengths, weaknesses, opportunities and threats. This analysis of response times is also timely in so much as it addresses a national consensus standard for acceptable times (NFPA, 2010). This study is closely aligned to The United States Fire Administration's Operational Objective #5 - to respond appropriately in a timely manner to emerging trends.

Literature Review

Literature review began with a card file search at The National Fire Academy Learning Resource Center at Emmitsburg, Maryland on March 1, 2010. A review of previous EFO Applied Research projects, trade journals and texts found quite a lot of information concerning the various aspects of total response time that can help us understand what elements are germane to a predominantly volunteer department. This review helped me to understand what elements of total response time can be modified, as well as those which cannot.

One of the greatest challenges of today's fire service is to achieve excellence in life safety and property protection through the process of continual quality improvement (Commission on Fire Accreditation International [CFAI], 2006). One of the primary areas targeted for improvement is response times, or the ability of the department to respond quickly and efficiently when needed. To fully understand how response times can be improved required the evaluation of all of the various components that make up response times and reflex times, or the total time from discovery of the emergency until firefighters take definitive action at the scene to mitigate the hazard.

Windisch and Crosby (2008) maintain that minimum response requirements and response time standards may not differ between combination departments and fully volunteer organizations. It is apparent, however, that response times cannot be compared between these types of organizations and fully career departments. Windisch and Crosby (2008) go on to say that the level of service must be fair to all persons involved, including the community, the department, and the individuals who are members. The National Fire Protection Association does not set minimum response time standards (NFPA, 2010) for volunteer or combination departments.

The NFPA Compliance Matrix IAFC/VCOS (2001) lists 54 separate points of evaluation, including appropriate level of response and staffing, but no mention is made towards response time analysis. In fact, Hensler (2008) goes so far as to state:

> "The NFPA treats volunteer and career departments differently when it comes to response time standards. For those that are substantially (>80%) career, there is NFPA 1710. For departments that are substantially (>80%) volunteer, there is NFPA 1720. For those departments in between the range, there is nothing."

Instead, National Fire Protection Standard 1720 (NFPA, 2010) addresses staffing and response time issues by recognizing the response time differences that often occur between in-station responders and volunteers who likely are not at the station. NFPA calls for minimum numbers of firefighters, depending on local population density per square mile, and differing maximum response times, which are also related to population density (Fire Protection Handbook, 2008).

Reviews of current Monroe Fire Department Standard Operating Guidelines and The Monroe Fire Department Member Handbook (2008) identified several response profile policies; however, no response time standards or goals were found.

There is a correlation in response time and severity of the incident as referenced in numerous publications and studies. Delayed response, particularly in conjunction with the deployment of inadequate resources, reduces the likelihood of controlling the fire in time to prevent major damage and possible loss of life, and increases the danger to firefighters (National Institute of Standards and Technology, 2010).

One of the greatest measures of a fire department's effectiveness is how fast they respond when the public calls. Coleman (2006) stated that turnout time is a direct reflection to the citizens on how much you care about what you're doing when you've been told to respond. Actual response times, if allowed to continue to increase, will have a significant adverse effect on ISO classifications (Stevens, 2004). The crew's attitude towards certain types of calls can also affect response times. Weninger (2004) and Pointon, et al. (2004) assumed that more serious calls would result in shorter response times; however, no substantial correlation could be found between call priority and turnout time. Kitterman (2008) recommends that an organization increase personnel awareness of the importance of all types of calls and the effect on public opinion and support.

More importantly, perhaps, than all of the statistical data is how the members feel about response policies, response times for emergency incidents, and especially how they feel about various elements of the total response time that they or the department can control. The members know that some areas (such as reluctance to change, and a general lack of concern for response times in other agencies) cannot be helped. However, many active department members feel that we are deficient in certain areas of our response times, and are anxious to make changes. This is one of the key elements in affecting cultural change (Heifetz and Linsky, 2002). Heifetz and Linsky (2002) also distinguished the difference between technical versus adaptive challenges, and recommend orchestrating conflict as a way to manage change. In this case, making subtle but recognizable changes in response policies brings to light the deficiencies that some members see. This enables an open dialogue among members, command staff and administration, and can lead to improved response times. By simply alerting department members that response times are important, Soptich (2005) maintains there will be some improvement in response times. Rufer (2009) proposes that members are motivated by reputation. Members look for organizations that are respected and supported by those people they consider to be their peers. They want to be part of an organization they can be proud of.

An important element of organizational culture is the force of change. Nelson and Quick (2000) hypothesize that change is the norm in most organizations and it is inevitable, but change can also be managed. Change comes from both internal and external forces. Kurt Lewin incorporated a change model that contends that a person's behavior is the product of both forces that push towards preserving the way things are, and forces that push towards change (Nelson & Quick, 2000). In the September, 2008, issue of Fire Rescue magazine, Jim Crawford wrote a

column entitled Leading with Heart (Crawford, 2008). He believes that true leaders find and use tools to create passion. He suggests the following quote:

> "You can buy people's time; you can buy their physical presences at a given place; you can even buy a measured number of their skilled muscular motions per hour, but you cannot buy enthusiasm…you cannot buy loyalty…you cannot buy the devotion of hearts, minds or souls. You must earn these."-Clarence Francis (Crawford, 2008, p188).

Crawford encourages the use of shared vision, competent leaders and mutual respect. He goes on to say mistakes are alright but compassion must be part of the plan (Crawford, 2008, p188).

This research points to opportunities to evaluate both technical elements of total response time and perceptions and actions of firefighters and others. If The Monroe Fire Department is truly serious about improving response times, the members must be an integral part of the solution.

Based on information reviewed, this applied research project will focus on incident data entry procedures and how this information is relayed to the responding firefighters and apparatus, on response time elements that the department may control (including standard operating guidelines, response policies, station locations and apparatus staffing and assignment), and on how perceptions and motivation affect actions of the responding firefighters in relation to the call location, severity or priority of the call, and, finally, whether changes should be made in response profiles in order to improve response times.

Finally, during the literature review, a *YouTube* video (Bartelt, 2009) showing a department response to a confirmed working structure fire was reviewed. This video very clearly defined the delays caused by the very factors being addressed in this research. The video begins just as the duty officer is arriving at the scene, as evidenced by radio traffic in the video.

The video shows paid-on-call members responding to the station and the actual rollout time of each apparatus.

Procedures

In order to fully explore the key issues and address the research questions and methodology, procedures used in this Applied Research Project were literature review, survey questionnaires, personal interviews, and a statistical review of call data for the period of January 1, 2005 through January 1, 2010. A review of National Fire Protection Association Standard 1720 (NFPA, 2010) and other documents address research question number one.

NFPA has stated that a major challenge in the discovery process often lies in assessing the existing protection characteristics (IAFC/VCOS, 2001). This has proven especially true in determining statistics for The Monroe Fire Department in relation to research question number one, since our county dispatch center does not record the response times for suppression apparatus. Only the arrival time of "the first unit" is recorded (J. Moldenhauer, personal communication, May 13, 2010). According to available dispatch records, in most cases the first arriving unit is one of our on-call command units which are essentially chiefs' cars with little or no suppression capabilities (Spillman Technologies, 2010). A more complete review of sample incidents for 2005 through 2009 indicates that the actual arrival times of suppression personnel were substantially longer as shown in Appendix B. Even recorded dispatch and response time is suspect since many times call data is entered into the mobile data system well after the call has been sent out via pager. Several chiefs have complained about call data being entered well after they are on the journey to a call (roundtable discussion at the July, 2010 Green County Fire Chiefs' Association meeting). This lack of verifiable data makes any statistical comparison

suspect, and correlation cannot be made without refinement of the data entry rules and procedures and subsequent collection of data.

In the statistical review portion of the research, 975 medium or high priority calls (first alarm or greater) were examined. Still alarms were not included since they are normally handled by on-duty career staff. Calls were reviewed using recorded dispatch data that was then compared to 911 line recordings, radio logs and recordings of dispatch and fire ground operations channels. This process was time-consuming since the calls first had to be identified as having a significant effect on the department, the community as a whole, or the individual property owner. Once the calls in question were identified, dispatch reports were reviewed to determine if sufficient data had been collected. If data had not been entered, field notes, field notes sketches, and fire ground photos with time and date stamps provided by department command officers were retrieved. Firehouse RMS reports were reviewed and, finally, the 911 dispatch and radio tapes were requested and reviewed to establish turn-out and arrival times for suppression forces and apparatus. Examples of these forms can be found in Appendix E. This procedure addresses research question number three.

All department members were asked to fill out a brief survey anonymously, using *surveymonkey.com*, concerning response times, locations of their full-time employment and their residences, and how the addition of a proposed second station would affect those response times. Secondly, the same members were asked about various elements of the response times that currently are used by the department. In this manner, some perceptions of current policies and procedures were gained. A total of 43 out of 54 active members completed the survey. This procedure addressed research question number two, and results are shown in Appendix C.

A thorough review of The Monroe Fire Department Member Handbook (2008) was conducted in order to correlate any policy and procedure changes that may be affecting response times. This review looked at apparatus response profiles, enactment of a strict alcohol policy, attendance requirements and unit staffing, in an effort to answer research question number four.

Research for question number five of this Applied Research Project was conducted through telephone interviews with leaders of other similarly-sized and -staffed departments, using a standard set of questions concerning response profiles and policies, utilized to gain insight if our current policies could be modified to improve total response times. These questions are attached as Appendix C.

Results

The literature review provided little unknown information in relation to maximum response times or turn-out times concerning paid-on-call departments such as our own. It is apparent that the same level of commitment is not expected from a volunteer department as that of a fully career staffed organization. This can be driven by a perceived inability to control response locations and drive times from other full-time employment, social activities or family commitments. The same is true for Monroe, although the survey responses make it clear there is a growing awareness of response times by the firefighters.

The survey and follow-up interviews provided much more unknown information than expected. The most significant findings were perception of how the firefighters feel about policy changes and their willingness to accept change. Although unintended, the research has recognized that most of the response time degradation may be an adaptive issue as much as the

technical issues of changing the way the department responds to various incidents based on time, location and perceived need.

Follow-up interviews were conducted as open-ended question and answer sessions that were intended to clarify answers already provided. A more detailed analysis of the results follows, and is broken down and grouped by relevant questions.

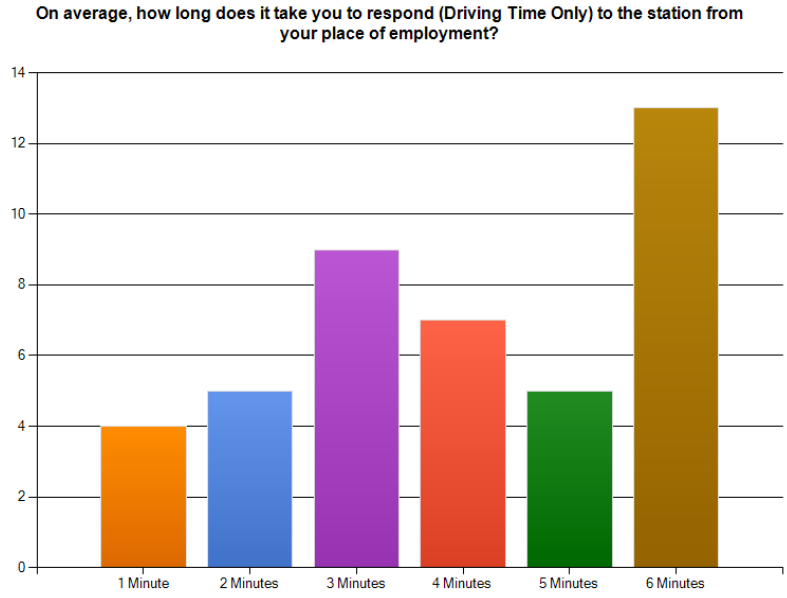

Figure 3. Drive Time from Work

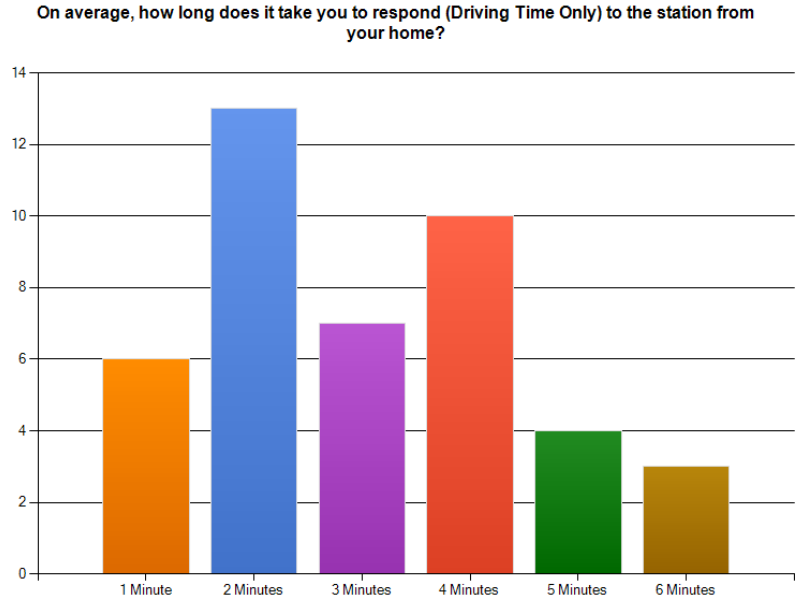

Figure 4. Drive Time from Residence

Questions 1 through 4 of the survey dealt directly with response times. All respondents were asked about driving time from their home or their place of employment, and which station would be closer to each after a new west-side station has been completed. The results show that most firefighters live nearer the downtown station but work nearer the location of the west-side station, as shown in Figures 3 and 4.

Drive time issues were addressed by question number 9 and showed that firefighters had significant difficulty travelling to the station between the hours of 1200 and 1600, due to traffic congestion.

Questions 5, 6 and 7 asked about employer support for the volunteer response. Overwhelmingly, employers allow firefighters to leave for fire and emergency call responses. Nearly all members (39 of 43) were allowed to leave for major incidents (second alarm or greater) calls, while 27 members, or 62.8%, were allowed to leave on first alarm. Respondents

also indicated that nearly all (90.7%) worked day shifts on Monday through Friday. This correlates with call volume as well, since most of the west-side calls occur during normal business hours.

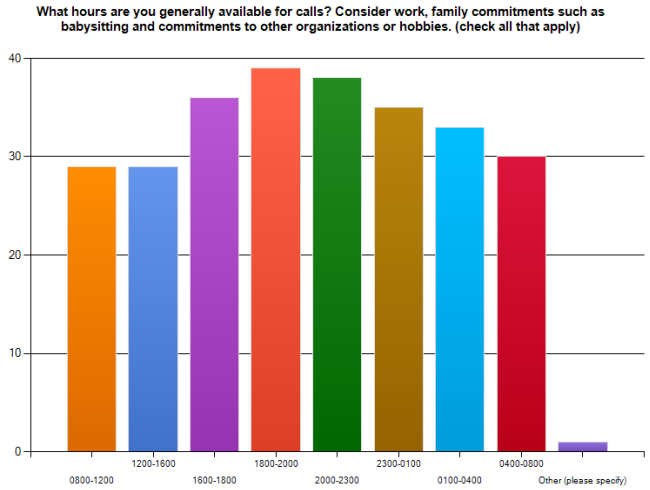

Figure 5. Times Firefighters are Generally Available to Respond

Question number 8 asked what times of the day firefighters are available for calls. Figure 5 indicates most stated that they were available most times, with evening being when they are the most available (90.7%).

Questions 10 through 13 were used to gauge perceptions of firefighter respondents. The questions asked how the firefighter felt concerning turn-out time and the reasons for delays in turnout time. Firefighters largely (67.4%) felt that a two-minute turn-out time after they arrived at the station was appropriate. They also felt that the greatest hindrance to turn-out time was use of the tag board system, although the other three choices were closely ranked, as well.

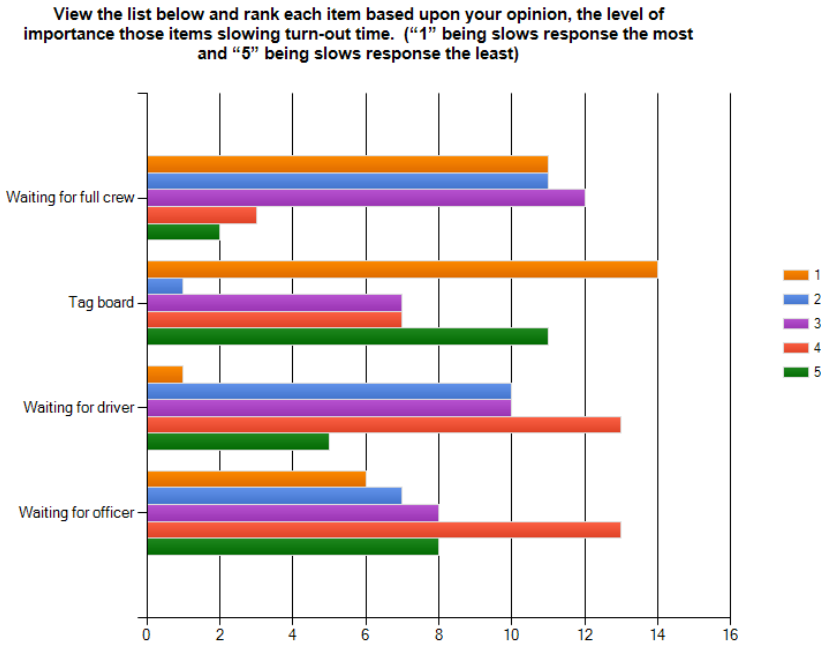

Figure 6. Factors Slowing Response (Firefighters' Perceptions)

What is significant is that more respondents ranked the tag board system as the number one hindrance to timely response. Waiting for officers and waiting for crew were selected by a large number of participants but were weighted as the fourth priority reason for delays in turnout time.

Finally, comments in a free-text response area at the end of the survey reinforced the desire to no longer use the tag board system and that crew size and drivers' training and clearance issues need to be addressed. The complete survey (along with a response summary and comments) is attached as Appendix A.

At the end of the survey, a concluding page asked each respondent to volunteer for a follow-up personal interview. The purpose of the personal interview was to more fully gauge perception and the acceptance of cultural change within the organization. Fourteen members

chose to participate in an interview. A series of six questions (as shown in Appendix C) were posed to each participant, and answers and other comments were recorded. Answers were not provided (i.e., multiple choice) as it was felt that providing choices would cause the participant to try to "find the answer the Chief was looking for." Instead, the questions were posed in a general discussion format and the firefighters were allowed to answer as they felt appropriate. A number of factors affecting response times and turnout times (in particular) became apparent.

The department has implemented a number of response profile changes in the last five years. As stated earlier, the rule of thumb for many years was to open the doors and send as many apparatus as needed to get all responding members to the incident scene. This meant there was essentially only one response profile for city calls and one for rural calls. Because of shrinking budgets, citizen complaints and increasing call volume, the department has limited response on most routine calls to a single engine crew and ladder company, and includes multiple apparatus response profiles based on type and severity of call. These policies have created some indifference and confusion. Eleven of the fourteen firefighters being interviewed stated there was little need to rush to the station because apparatus would most likely be gone or would eventually be cancelled before arriving at the incident. Another factor is response time to the station from west-side employers. All of the interview participants worked on the west side of the city and mentioned the trouble they have getting to the downtown station in time to respond on the first alarm apparatus. Because of this, many have elected to not leave their full-time jobs since many are docked one hour of pay for responding. This leads to a decrease in responding firefighters, which can sometimes delay turnout time even further because of lack of full crew staffing.

Twelve of fourteen firefighters indicated they thought the proposed reduction from eight to six firefighters on first alarm engine company apparatus was an appropriate measure to improve turnout time. Ten members being interviewed felt the addition of an engine company response from the proposed west-side station was also an important factor in reduction of total response time.

Although the tag board system was addressed in the survey, several members discussed--at length--their opinion of the continued use of the tags. Most felt that there may be some confusion if the usage was discontinued since nearly all the department has been hired since its inception more than 20 years ago. Two members mentioned safety factors and questioned how they would know where to board the apparatus. After discussion and clarification, all felt that the change was more of an adaptive issue rather than a technical challenge. This suggests more communication is necessary concerning this change in operational policy.

The final part of the research involved contacting five fire chiefs in departments in Wisconsin, Iowa and Illinois that closely mirrored Monroe demographically. The criteria used to select these departments included that they must be substantially paid-on-call with a career chief officer, they should have a total membership of between 40 and 75 members, and they cannot operate EMS transport service as part of their daily function. The five departments selected serve communities of between 8,500 and 14,000 citizens; all provide protection primarily to their city but also provide fire protection to a rural district; and all respond to between 100 and 300 calls per year. All are staffed by a chief and up to two other full-time employees, with the balance being paid-on-call members.

The interviews were conducted by phone on March 23 and 24, 2010. Three of the chiefs participating in the interview had concerns over using them for comparison since they felt that

their city government may use the information to adjust their budget or staffing if comparisons with other departments were not favorable. For that reason, this research will refer to these departments only as Chiefs A, B, C, D and E.

All chiefs were asked a series of five questions regarding their response profiles, apparatus staffing, and whether or not they have response time or turnout time policies in place. The questions and answers summary is included in Appendix D. The questions were meant to provide standardized answers for this research but were also designed to encourage further discussion into the underlying issues involved with response times.

All five interview chiefs indicated that they did not have response time standards. Three (Chiefs B, C and D) indicated they knew of the requirements in NFPA 1720 but thought that they were unrealistic for primarily volunteer departments. Chief B indicated that his department did meet the response time standard in NFPA 1720, (2010) as required, 90% of the time. All of the chiefs felt that turnout time once the non-career staff arrived at the station was within 2 minutes or less, although none have policies in place requiring or recommending a turnout time performance standard.

Two of the chiefs indicated that suppression forces arrive at the scene of the incident within nine minutes, while two thought their response times would be "somewhat longer." Chief C became very defensive at this point during the interview and chose not to participate in any further discussion and abruptly ended the phone call.

The final question asked of the chiefs was their feelings that many response time issues are, in fact, an adaptive challenge as opposed to a technical issue. The four chiefs (A, B, D and E) participating at this point agreed that the type of call, if announced during the paging of the department, had a large impact on turnout and response. They also all felt that budget issues

have created a certain amount of apathy amongst the non-career staff. Chief D indicated that he feels the same problem would exist if career firefighters were polled. Chiefs A and D felt that significant budget issues being felt by their departments have had a two-fold effect. First, it has limited outside training opportunities and has caused significant changes in response policies for the paid-on-call members, and it has caused administrators, fire chiefs and departments (including their own) to accept less participation as a way to save money. Both chiefs agreed that this was not the best scenario, nor was it intentional, but because of constant pressure to save from city administration, it had slowly and quietly occurred.

Discussion

All of the research indicates that there are significant areas of improvement possible for The Monroe Fire Department. First, data entry procedures must be improved in order to fully gauge the extent of response issues. This must start with the initial dispatch and continue through incident response, record keeping after the call, and long-term records management so that historical trends can be determined. The fire department is dispatched by a county law enforcement dispatch which has dispatch responsibilities for 27 other agencies. Because of budget issues, this center is continually understaffed and unable to fully document all information as requested. The City has, in the past, explored the possibility of using a local dispatch center in order to increase effectiveness of call takers and data entry. The department is using ACS Firehouse Software, which is limited in data output capabilities. Fire officers find it antiquated and difficult to work with (Division Chief J. Allen, personal communication, April 9, 2009). If data entry is to be accomplished completely, the process must be streamlined, since the

three full-time staff members have severe time constraints due to other duties and responsibilities.

Although the IAFC/NFPA Response Matrix (IAFC/NFPA, 2001) does not directly correlate to departments such as ours, response time issues for firefighters must be addressed if turnout and response times are to see significant improvement. This can be done by hiring full-time firefighters to improve turnout times from the current 7-10 minutes to an NFPA (NFPA, 2010) acceptable 1-2 minutes. Unfortunately, current budget constraints caused by the unprecedented economic downturn make this option impossible. Another solution is to locate a station closer to where most firefighters are during the periods of the day when traffic congestion and decreased staffing are causing delays. Based primarily on data gathered in preparation for the Applied Research Project, the City of Monroe has agreed to construct and staff a new headquarters station at 601 West 17th Street on the west side of Monroe.

Response policies need to be updated to send the closest appropriate unit to the scene with adequate staffing to handle the most likely scenario to be found. Locating a station closer to the firefighters' full-time employment, and staffing engine company apparatus with six firefighters rather than eight should improve turnout time by several minutes. Dispatching an engine crew from both stations would ensure timely response to whatever area of the city the fire services are needed.

A significant concern is how to staff two stations when nearly 100% of firefighters are transient in that they move from their residences in one area of the city to another area for their employment. While nearly 93% work day shift, they are available for calls but are located mostly two miles across town from the station and response apparatus. Staffing options have been explored, such as full-time staffing, or allowing firefighters to respond directly to the

incident scene while others, either full-time staff or assigned paid-on-call personnel, brought the apparatus from one or both stations. Both ideas were discarded due to costs and the inability to adequately account for and manage firefighters not initially assigned to working groups or units. The remaining options are to assign all members to a station based upon where they live or work, or allow them to respond to whichever station they happen to be closest to at the time of the call. Both options have benefits and liabilities attached to them. In the first option, at times the firefighters will still be traveling across town to respond to their assigned station, and response times may not improve or could, in fact, worsen. In the latter scenario, there will be significant additional cost to fully equip each member with personal protective equipment for each station.

The most important results of the research are the perceptions of the firefighters and their input concerning the factors that are causing significant delays in response. Heifetz and Linsky (2002) maintain one of the four most important steps is to "Find out where people are at."

The *YouTube* video (Bartelt, 2009) found during literature review clearly demonstrated the issue of firefighter response. The recording shows a response to a reported structure fire. The command duty officer arrives on scene just as the video begins and transmits a "Code Red," indicating a working fire with flames showing. The paid-on-call members are arriving at the station but there does not seem to be a sense of urgency. Several members can be seen walking back and forth in the station while waiting for other crew members to arrive. Even after enough members have arrived at the station to staff the first apparatus, it still takes several minutes for the first engine crew to leave the station. This supports Crawford's (2008) statements in his article.

Based on survey results, most firefighters believe that a two-minute turnout time from the station is appropriate once they arrive at the station. This is truly a perception issue as, in reality,

at times they are preparing to embark the trucks much sooner than that. They also feel that an appropriate response time to incident scene is in the 6-7 minute range. While the recommendation in NFPA1720, 2010, Table 4.3.2, is nine minutes, a response goal of seven minutes may be appropriate once the west-side station is opened. Since awareness is a key element in affecting changes (Heifetz and Linsky, 2002), and, as Soptich (2005) stated, just having the awareness of the response time goal, there will be some improvement in response times.

There has been significant discussion throughout this project with department members concerning their ability or desire to respond to certain types of calls. Certainly, Weninger (2004) and Pointon, et al. (2004) felt that more serious calls would encourage a more robust and urgent response. Kitterman (2008) disagreed and the *YouTube* video (Bartelt, 2009) showing a department response certainly supports Kitterman's research.

Firefighters felt that three major issues need to be addressed in order to improve turnout and response times. First, the members believe the tag board system should be discontinued. They largely feel that the system creates opportunity for abuse or misuse and is causing delays. This system has been in use for over 20 years so most members have no experience in how to respond without it. If the tag board system is to be discontinued, clear instruction must be given while anticipating some of the problems that may occur immediately after ceasing use of the system. Ongoing monitoring of response immediately after the change should be conducted and some minor issues are to be expected. These issues should be treated as an opportunity for future learning and not considered disciplinary issues unless it appears that a member is arbitrarily causing problems.

Firefighters also feel (to a lesser extent) that changes need to be made in the drivers' clearance policy to ensure that more of the responding members are qualified to operate the apparatus. Several members indicated in the survey that they felt that the drivers' training was not being applied fairly and equally, and stated that they had stopped attempting to become cleared on apparatus because of this feeling. Eight of the fourteen members who participated in the follow-up interviews stated they would like to see significant changes in the form of formal policies and procedures concerning how drivers would be cleared.

Finally, perhaps most importantly, the firefighters feel they need more input into policy changes and want to be needed. Command officers need to be cognizant of firefighters' need to respond to incidents and use the knowledge, skills and abilities they have accumulated. Firefighters want to be part of a winning team and will devote countless hours to training and responding to calls (Rufer, 2009). Rufer (2009) goes on to state, "The vision and mission of the organization is important, but the primary motivator is responding to the call," and " if call volume decreases to the point that they are not able to respond to enough calls to satisfy their need for self-actualization, they may lose interest and look for other opportunities." In the case of The Monroe Fire Department, numerous response policy and apparatus response profile changes have created a level of confusion and apathy which has affected the firefighter's ability and desire to participate. Another casual factor mentioned was that many employers are short staffed and are more reluctant to allow firefighters to leave work for routine alarms. For the most part, this factor does not directly affect the fire department response since these firefighters are still allowed to leave for multiple alarm incidents. This, however, could become a problem if the current economic crisis forces more lay-offs or if firefighters become accustomed to not responding while at their regular jobs.

All the research indicates that the firefighters and the public need constant communication to ensure they remember how important the paid-on-call firefighter system is to the City of Monroe. This research points to the need for further study concerning the cost savings and effectiveness as compared to like-sized communities with career departments. Firefighters should be given more opportunities for two-way dialogue through surveys, review of major incidents, and face-to-face meetings to ensure they are actively participating in policy development and promoting operational efficiency.

Recommendations

Base upon the data collected through this Applied Research Project, The Monroe Fire Department should:

More fully explore the cost and benefits of discontinuing usage of the current countywide public safety answering point and moving all fire department dispatch functions the Monroe Police Department dispatch center. Consideration should be given to costs needed to upgrade any communications, computer-aided dispatch and other equipment, as well as the possibility of the need for more dispatchers.

Continue to develop and refine response policies and apparatus response profiles in preparation for operation of a new west-side fire station. Consideration must be made for the challenges involved with transitioning to a multi-station response organization.

Continue to anticipate future growth in the community and determine how that growth affects the ability of the paid-on-call firefighter to respond to emergency incidents through a formal standard of cover evaluation.

Additionally, the City of Monroe and The Monroe Fire Department must continue to educate the public of the value of the of the paid-on-call staffing model. Business owners must be reminded frequently that their insurance rates and the livelihood of their businesses rely on the ability to maintain an essentially volunteer force to staff the department.

Firefighters must be reminded continually that they are an integral part of a storied and successful organization. Members must be involved in the daily decision-making and understand they are the most important resource.

This author recommends to future readers that in order to truly gauge response times, verifiable data must be available. In many smaller career and mostly-volunteer departments, data entry may be put aside in lieu of more pressing matters. Because of this lack of verifiable data, this research focused more on behavior, perceptions and attitude of firefighters. If 100% participation could have been accomplished during the survey, the results may have been altered. Because the department is a small, close-knit organization, some of the answer totals may be inaccurate. The same could occur with a large organization or one that has an adversarial labor/management relationship. This research was specifically designed to benefit The Monroe Fire Department and most likely would not be applicable, in its current form, to most other organizations.

If this research is to be duplicated, one should consider using a larger statistical sample of demographically similar departments. It was this author's intention to do so but finding those departments was very difficult. Perhaps the limitations set for like departments could be broadened to be more inclusive.

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Appendix A

Questions and Responses Summary
Monroe Fire Department Response Factors Survey

1. On average, how long does it take you to respond (Driving Time Only) to the station from your home?

	Response Percent	Response Count
1 Minute	14.0%	6
2 Minutes	**30.2%**	**13**
3 Minutes	16.3%	7
4 Minutes	23.3%	10
5 Minutes	9.3%	4
6 Minutes	7.0%	3
answered question		**43**
skipped question		**0**

2. On average, how long does it take you to respond (Driving Time Only) to the station from your place of employment?

	Response Percent	Response Count
1 Minute	9.3%	4
2 Minutes	11.6%	5
3 Minutes	20.9%	9
4 Minutes	16.3%	7
5 Minutes	11.6%	5
6 Minutes	**30.2%**	**13**
answered question		**43**
skipped question		**0**

3. Which station will be closer (by drive time) from your home? (Once the new Westside station is in operation)

	Response Percent	Response Count
Westside (Station 1)	16.3%	7
Downtown (Station 2)	**83.7%**	**36**
answered question		**43**
skipped question		**0**

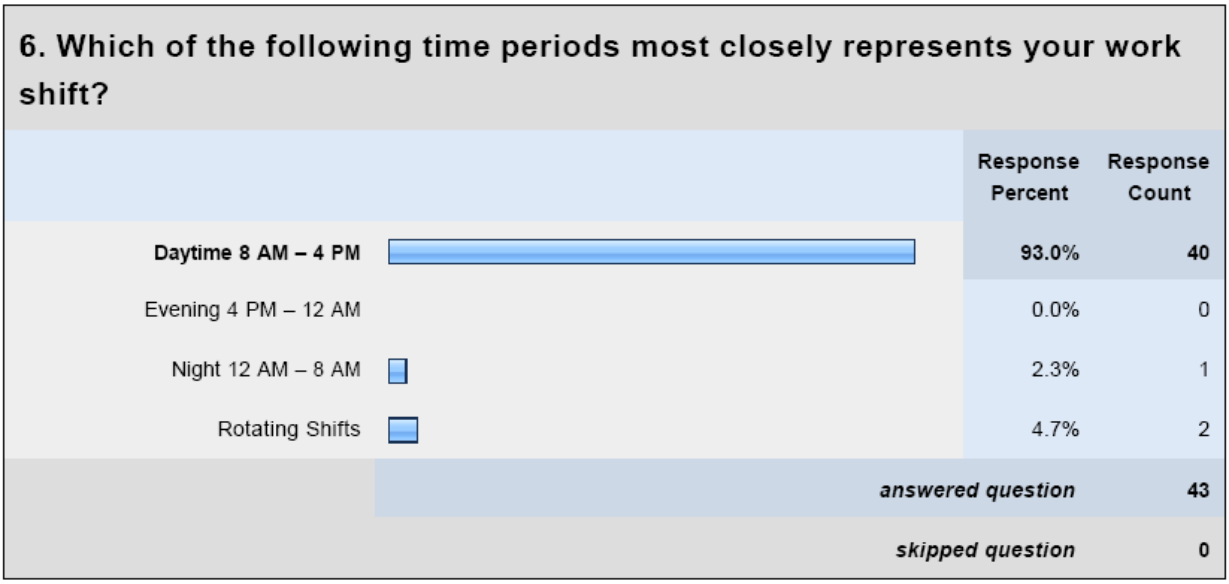
4. Which station will be closer (by drive time) from your place of employment? (Once the new Westside station is in operation)

	Response Percent	Response Count
Westside (Station 1)	**65.1%**	**28**
Downtown (Station 2)	34.9%	15
answered question		**43**
skipped question		**0**

5. Are you allowed to leave your place of employment for calls? Respond by level of alarm

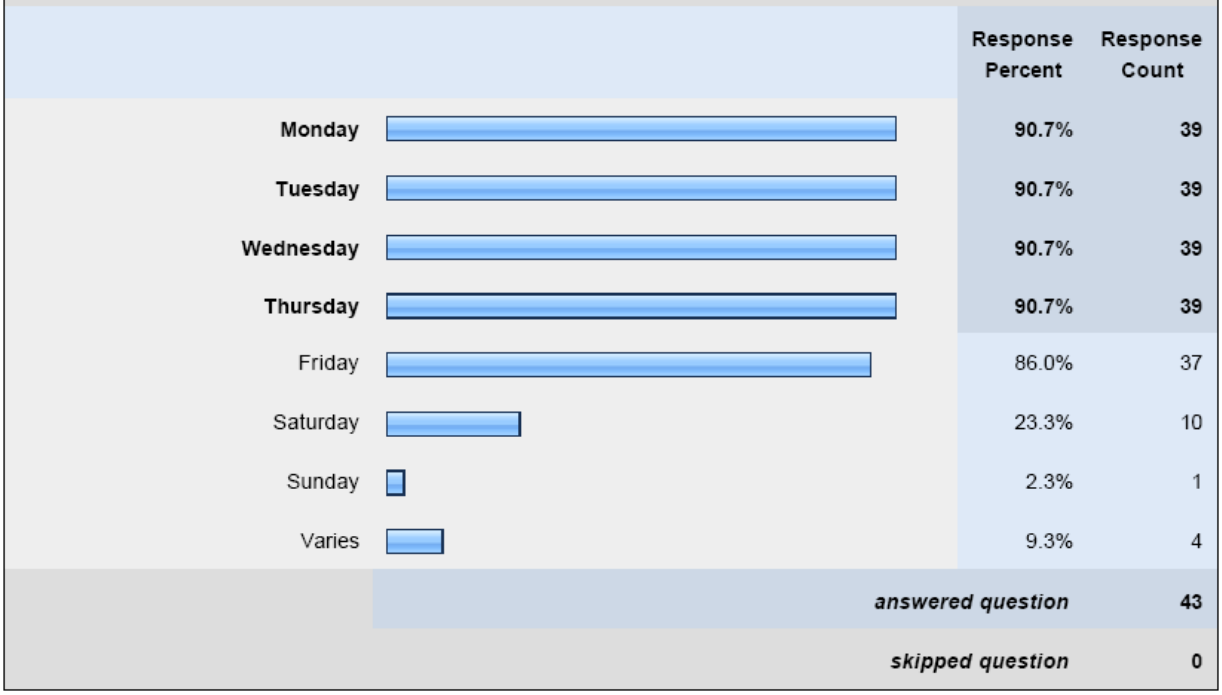
	Response Percent	Response Count
1st Alert	**62.8%**	**27**
2nd Alert or Code Red	44.2%	19
Not allowed to leave for any alarm	9.3%	4
answered question		**43**
skipped question		**0**

6. Which of the following time periods most closely represents your work shift?



	Response Percent	Response Count
Daytime 8 AM – 4 PM	**93.0%**	**40**
Evening 4 PM – 12 AM	0.0%	0
Night 12 AM – 8 AM	2.3%	1
Rotating Shifts	4.7%	2
answered question		**43**
skipped question		**0**

7. What days are you generally at your place of employment? Check all that apply or "Varies" if you're shift is rotating



	Response Percent	Response Count
Monday	**90.7%**	**39**
Tuesday	**90.7%**	**39**
Wednesday	**90.7%**	**39**
Thursday	**90.7%**	**39**
Friday	86.0%	37
Saturday	23.3%	10
Sunday	2.3%	1
Varies	9.3%	4
answered question		**43**
skipped question		**0**

8. What hours are you generally available for calls? Consider work, family commitments such as babysitting and commitments to other organizations or hobbies. (check all that apply)

	Response Percent	Response Count
0800-1200	67.4%	29
1200-1600	67.4%	29
1600-1800	83.7%	36
1800-2000	**90.7%**	**39**
2000-2300	88.4%	38
2300-0100	81.4%	35
0100-0400	76.7%	33
0400-0800	69.8%	30
Other (please specify)	2.3%	1
answered question		**43**
skipped question		**0**

9. What time period of day is most difficult (because of traffic) for your response?

	Response Percent	Response Count
0800-1200	32.6%	14
1200-1600	**62.8%**	**27**
1600-1800	37.2%	16
1800-2000	2.3%	1
2000-2300	0.0%	0
2300-0100	0.0%	0
0100-0400	0.0%	0
0400-0800	4.7%	2
Other (please specify)	2.3%	1
answered question		43
skipped question		0

10. Turn-out times are the time beginning once you exit your vehicle at the station until the truck is ready to leave. What Turn-out time do you feel is reasonable and appropriate?

	Response Percent	Response Count
1 Minute	4.7%	2
2 Minutes	**67.4%**	**29**
3 Minutes	20.9%	9
4 Minutes	4.7%	2
5 Minutes	2.3%	1
6 Minutes	0.0%	0
answered question		43
skipped question		0

11. View the list below and rank each item based upon your opinion, the level of importance those items slowing turn-out time. ("1" being slows response the most and "5" being slows response the least)

	1	2	3	4	5	Rating Average	Response Count
Waiting for full crew	28.2% (11)	28.2% (11)	**30.8% (12)**	7.7% (3)	5.1% (2)	2.33	39
Tag board	**35.0% (14)**	2.5% (1)	17.5% (7)	17.5% (7)	27.5% (11)	3.00	40
Waiting for driver	2.6% (1)	25.6% (10)	25.6% (10)	**33.3% (13)**	12.8% (5)	3.28	39
Waiting for officer	14.3% (6)	16.7% (7)	19.0% (8)	**31.0% (13)**	19.0% (8)	3.24	42
						Comments	8
					answered question		**43**
					skipped question		**0**

12. Total Response Time is the time beginning when the dispatcher answers the phone until the first firefighting activities commence at the scene. As a taxpayer and citizen, what do you feel is an appropriate average total response time for an incident in the community?

	Response Percent	Response Count
1 Minute	0.0%	0
2 Minutes	0.0%	0
3 Minutes	2.3%	1
4 Minutes	0.0%	0
5 Minutes	9.3%	4
6 Minutes	**27.9%**	**12**
7 Minutes	**27.9%**	**12**
8 Minutes	18.6%	8
9 Minutes	4.7%	2
10 Minutes	7.0%	3
11+ Minutes	2.3%	1
Comments		5
answered question		**43**
skipped question		**0**

13. Do you feel your opinion would be different if you were not a firefighter?

	Response Percent	Response Count
Yes	34.9%	15
No	**44.2%**	**19**
Unsure	20.9%	9
Comments		6
answered question		**43**
skipped question		**0**

	Response Text
1	Best thing to do is let some of the slow pokes behind. They also should not get paid if they screw around and dont go. Get rid of the tags since many use that as an excuse to screw off so they don't have to go.
2	i think the survay should be a good source of info as long as the feed back is gotten.
3	I don't feel getting rid of tag the boards is going to accomplish anything. I think its going to slow turn out time overall and not to mention piss guys off. I can already foresee problems with this, such as guys running around from truck to truck posing a safety hazard. This is definetly not the answer to be more efficient.
4	All these things could be addressed if the officers did their job and started kicking some butt to get moving. Maybe if some don't want to go now they won't have to because there is no more tags. I say good. If you don't want to be there I don't want you there.
5	I was reviewing response scenarios/trucks layout and had a question. For guys like me who will most of the time be responding to Station 1, is the drivers training plan going to change? What I mean is..... Can I clear on only T-2, E-6 and E-8? I stopped coming to drivers training a couple years ago when I passed MPO and I drove BR-3 3 or 4 times for the entire hour and never got cleared on it. I would like to clear on trucks, but it does not make sense to come down to just ride in a truck I can't drive yet (7,8,9) or clear on trucks that I will never drive when we go to two stations. That hour is better spent with my wife and kids. This is actually why multiple people stopped coming to drivers training. Some people clear on a truck after one time driving. Others take over 6 months for the same truck. Nobody knows if the 6 month guy is qualified after one or two times because they are not tested. If it is staying the same, I understand that. Just curious because we will most likely not have drivers more than anything at the new station. Especially at night. I like the survey. Should do more in the future.
6	Drivers training needs to be completely overhauled aand the stanbby pay should be eliminated so some people will not try to get out of going to the call
7	Tag boards are not needed. Should be able to roll without officer.

Appendix B

Calls with Response Times Over 10 Minutes (2005-2009)

DATE	INCIDENT #	ADDRESS			ALARM	ARRIVAL	RESPONSE
03-Jan-05	05-0000002	N3765	CTY 81	HWY	7:02:00	7:14:00	0:12:00
05-Jan-05	05-0000003	N1200	CLARNO	RD	3:46:00	3:57:00	0:11:00
19-Jan-05	05-0000007	W5799	FAIRVIEW	RD	7:50:00	8:05:00	0:15:00
18-Feb-05	05-0000021	509	16TH	AVE	22:45:00	23:00:00	0:15:00
31-Mar-05	05-0000038	W8483	ST 81	HWY	6:40:00	6:55:00	0:15:00
09-Apr-05	05-0000048	W7360	ST 82	HWY	19:55:00	20:06:00	0:11:00
05-May-05	05-0000061	N2480	CTY M	HWY	6:21:00	6:35:00	0:14:00
05-Jun-05	05-0000087	W7401	CTY B	HWY	14:04:00	14:16:00	0:12:00
17-Jun-05	05-0000099	2600	10th	ST	18:45:00	18:57:00	0:12:00
19-Aug-05	05-0000126	W6252	CTY B	HWY	16:27:00	17:47:00	1:20:00
14-Aug-05	05-0000125	W6013	FRANKLIN	RD	14:30:00	14:44:00	0:14:00
01-Sep-05	05-0000133	800	13TH	AVE	8:58:00	9:12:00	0:14:00
10-Sep-05	05-0000137	1916	27TH	ST	7:39:00	7:50:00	0:11:00
30-Sep-05	05-0000153	1901	10TH	AVE	23:09:00	23:21:00	0:12:00
09-Oct-05	05-0000155	W7945	STEWARD	RD	12:30:00	13:01:00	0:31:00
23-Oct-05	05-0000158	N4536	CTY N	HWY	7:54:00	8:15:00	0:21:00
23-Oct-05	05-0000159	W8902	CTY M	HWY	15:44:00	15:59:00	0:15:00
30-Oct-05	05-0000167	N664	CTY HK	HWY	17:23:00	17:36:00	0:13:00
23-Nov-05	05-0000183	W4900	CTY P	HWY	14:38:00	14:50:00	0:12:00
06-Jan-06	05-0000004	W7090	CTY P	HWY	18:46:00	19:01:00	0:15:00
15-Feb-06	06-0000020	W5584	ST 69	HWY	17:59:00	18:10:00	0:11:00
24-Mar-06	06-0000043	N4771	RINGHAND	RD	18:31:00	18:43:00	0:12:00
14-Jun-06	06-0000082	W7784	SMOCK VALLEY	RD	13:43:00	13:57:00	0:14:00
18-Jul-06	06-0000105	516	26TH	AVE	8:12:00	8:20:00	0:08:00
13-Aug-06	06-0000123	531	27TH	AVE	17:09:00	17:12:00	0:03:00
10-Sep-06	06-0000143	N5254	CHURCH	RD	10:19:00	10:30:00	0:11:00
16-Sep-06	06-0000148	N1874	ULLOM	RD	10:05:00	10:20:00	0:15:00
11-Nov-06	06-0000177	W8171	BUTTS	RD	5:25:00	5:37:00	0:12:00
21-Nov-06	06-0000186	516	26TH	AVE	7:44:00	8:00:00	0:16:00
06-Jan-07	07-0000003	W5654	CTY B	HWY	15:11:00	15:24:00	0:13:00
06-Feb-07	07-0000023	1025	EAST LAKE	RD	3:20:00	3:37:00	0:17:00
06-Feb-07	07-0000027	1025	EAST LAKE	RD	14:38:00	14:50:00	0:12:00
10-Feb-07	07-0000032	1025	EAST LAKE	RD	10:30:00	10:47:00	0:17:00

DATE	INCIDENT #	ADDRESS			ALARM	ARRIVAL	RESPONSE
19-Feb-07	07-0000035	W3415	MIDDLE JUDA	RD	2:55:00	3:19:00	0:24:00
20-Feb-07	07-0000037	N5156	BIGGS	RD	6:41:00	7:01:00	0:20:00
18-Mar-07	07-0000054	N4887	THUNDER	RD	16:08:00	16:21:00	0:13:00
26-Mar-07	07-0000057	516	26TH	AVE	6:12:00	6:20:00	0:08:00
23-May-07	07-0000088	N3765	ST 81	HWY	4:00:00	4:15:00	0:15:00
03-Jul-07	07-0000110	6410	CTY N	HWY	22:05:00	22:35:00	0:30:00
07-Jul-07	07-0000114		BELOIT FD	1	9:55:00	10:37:00	0:42:00
03-Aug-07	07-0000131	w4472	FAIRFIELD	RD	16:07:00	16:20:00	0:13:00
09-Aug-07	07-0000136	N3639	ST 81	HWY	19:02:00	19:16:00	0:14:00
31-Aug-07	07-0000152	W4832	CTY P	HWY	13:58:00	14:10:00	0:12:00
11-Sep-07	07-0000157	N2683	NYE	RD	16:01:00	16:21:00	0:20:00
12-Sep-07	07-0000158	2339	SOUTH KEMP	RD	14:39:00	14:50:00	0:11:00
10-Oct-07	07-0000175	W4764	DUTCH HOLLOW	RD	15:22:00	15:33:00	0:11:00
06-Nov-07	07-0000186	N4086	DUTCH HOLLOW	RD	6:07:00	6:18:00	0:11:00
10-Nov-07	07-0000191	N5077	GUTZMER	RD	18:20:00	18:32:00	0:12:00
01-Dec-07	07-0000204	W5392	ROUND GROVE	RD	23:33:00	23:44:00	0:11:00
23-Dec-07	07-0000214	N861	BRUNKOW	RD	9:08:00	9:22:00	0:14:00
26-Dec-07	07-0000215	W6299	MELVIN	RD	19:22:00	19:33:00	0:11:00
10-Jan-08	08-0000005	N200	ST 69	HWY	21:50:00	22:01:00	0:11:00
13-Jan-08	08-0000007	W6700	ST 11	HWY	2:35:00	2:49:00	0:14:00
06-Feb-08	08-0000032	N3797	ST 59	HWY	14:43:00	15:04:00	0:21:00
19-Feb-08	08-0000048	W6814	HIGH POINT	RD	10:14:00	10:42:00	0:28:00
18-Feb-08	08-0000054	N700	CLARNO	RD	7:42:00	7:53:00	0:11:00
17-Apr-08	08-0000086	W7195	ST 81	HWY	11:55:00	12:10:00	0:15:00
19-May-08	08-0000104	N2000	CADIZ SPRINGS	RD	17:56:00	18:35:00	0:39:00
06-Jun-08	08-0000115	2731	8TH	ST	19:28:00	19:35:00	0:07:00
08-Jul-08	08-0000135	N2325	BLOOM	LANE	10:45:00	11:02:00	0:17:00
22-Aug-08	08-0000167	W5222	CTY KK	HWY	20:13:00	20:20:00	0:07:00
01-Sep-08	08-0000175	N4412	DUNCAN HILL	RD	13:30:00	13:51:00	0:21:00
16-Sep-08	08-0000186	W3986	TOWNS	RD	14:12:00	14:24:00	0:12:00
21-Sep-08	08-0000191	706	3RD	AVE	7:36:00	7:47:00	0:11:00
03-Nov-08	08-0000209	W7500	FRANKLIN	RD	10:46:00	11:00:00	0:14:00
05-Nov-08	08-0000210	N495	SHUEYVILLE	RD	16:54:00	17:05:00	0:11:00
20-Nov-08	08-0000224	N3376	MNR/SYLV	RD	8:40:00	8:58:00	0:18:00
29-Nov-08	08-0000233	211	MAIN	ST	11:32:00	11:50:00	0:18:00
05-Dec-08	08-0000243	319	5TH	AVE	23:32:00	23:51:00	0:19:00
26-Dec-08	08-0000261	316	3RF	AVE	14:31:00	14:50:00	0:19:00
13-Jan-09	09-0000010	N1300	ST 69	HWY	9:07:00	9:19:00	0:12:00
18-Jan-09	09-0000019	1423	16TH	ST	16:32:00	16:45:00	0:13:00
27-Jan-09	09-0000028	N399	CLARK	RD	3:50:00	4:09:00	0:19:00

DATE	INCIDENT #	ADDRESS			ALARM	ARRIVAL	RESPONSE
27-Jan-09	09-0000029	1110	18TH	AVE	4:15:00	4:30:00	0:15:00
06-Feb-09	09-0000037	W5477	TOWN CENTER	RD	14:13:00	14:30:00	0:17:00
11-Mar-09	09-0000060	W7542	CTY P	HWY	5:53:00	6:13:00	0:20:00
15-Mar-09	09-0000064	N4600	Cty J	HWY	4:57:00	5:10:00	0:13:00
22-Mar-09	09-0000070	N4897	CTY J	HWY	3:39:00	3:50:00	0:11:00
24-Mar-09	09-0000072	N5103	BUCKSKIN	RD	11:50:00	12:05:00	0:15:00
25-Apr-09	09-0000103	w4200	HANEY	RD	18:00:00	18:13:00	0:13:00
02-May-09	09-0000105	W4322	SCHUTT	LANE	14:12:00	14:25:00	0:13:00
13-May-09	09-0000110	215	3RD	ST	17:36:00	17:50:00	0:14:00
01-Jul-09	09-0000136	w3532	TOWNS	RD	17:40:00	17:55:00	0:15:00
16-Jul-09	09-0000144	1420	11TH	ST	13:52:00	14:05:00	0:13:00
19-Jul-09	09-0000146	2700	5TH	ST	16:00:00	16:12:00	0:12:00
29-Aug-09	09-0000179	1110	18TH	AVE	12:24:00	12:35:00	0:11:00
29-Aug-09	09-0000180	N1400	CLARNO	RD	12:38:00	12:50:00	0:12:00
18-Sep-09	09-0000189	2648	2ND	AVE	17:56:00	18:10:00	0:14:00
01-Oct-09	09-0000198	1051	7TH	ST	20:50:00	21:05:00	0:15:00
16-Nov-09	09-0000222	N4186	KLONDIKE	RD	9:01:00	9:14:00	0:13:00
21-Dec-09	09-0000249	301	MAIN	ST	3:36:00	4:08:00	0:32:00
21-Dec-09	09-0000251	301	MAIN	ST	14:22:00	14:58:00	0:36:00
20-Dec-09	09-0000248	2800	6TH	AVE	00:36:00	0:49:00	0:13:00
28-Dec-09	09-0000260	N8867	CTY J	HWY	10:35:00	11:07:00	0:32:00

Appendix C

Follow-up Interview Questions

Question #1 – Have all the changes in response profiles affected your ability or desire to respond to incident alarms?

Question #2 – Does your work, (or residence) locations have a factor in your ability to respond to **i**ncident alarms?

Question #3 – Does the proposed engine staffing change from 8 to 6 firefighters seem appropriate to you?

Question #4 – Does the proposed addition of a west-side fire station affect your ability to respond to incident calls?

Question # 5 – Does the proposed response from an engine company from both stations on first alarm assignments affect your ability to respond to calls?

Question #6 – Do you respond differently if it is a routine alarm, such as water flow or smoke alarm, than you do if it is a reported structure fire or “Code Red”?

Appendix D

Chiefs' Interview Questions

Question #1 – Does your department have response policies setting maximum response time?

Answers: Chief A-No, Chief B-No, Chief C-No, Chief D-No, Chief E-No

Question #2 – Are you aware of the response time requirements in NFPA 1720?

Answers: Chief A-No, Chief B-Yes, Chief C-Yes, Chief D-Yes, Chief E-No

Question #3 – Does your department meet the standard response time 90% of the time?

Answers: Chief A-Yes, Chief B-Yes, Chief C-Yes, Chief D-Yes, Chief E-No

Question #4 – Does your department have a turn-out time of 2 minutes after the members arrive at the station?

Answers: Chief A-Yes, Chief B-Yes, Chief C-Yes, Chief D-Yes, Chief E-Yes

Question #5 – Do you feel that announcing the nature of the call affects firefighter response?

Answers: Chief A- Yes, Chief B-Yes, Chief C-No Answer, Chief D-Yes, Chief E-Yes

Appendix E

Sample Incident Report Forms

Spillman Mobile Data Form
08/20/10 Monroe Fire Department 269
09:43 FIRE Incident Table: Page: 1
Fire Incident
Number: F09-00021
Nature: FIRE
Addr= 820 W 17TH ST Area:
City: MONROE ST: WI ZIP: 53566 Contact: BADGER STATE ETHANOL
Caller
Numbr:
Last: Fst: Mid:
DOB: SSN: Adr:
Race: Sx: Tel: Cty: ST: ZIP:
Details
Condition Codes: FIRE Reported: FIRE Observed:
Circumstances:
Firefighters: 750 Monroe Fire Cmd 751F
Rsp Firefighter: Agency: MNFD
Received By: E Berget
How Received: 9 911 Line CAD Call ID: G09000726
When Reported: 14:18:25 01/19/09 Last RadLog: 21:45:16 01/19/09 CMPLT
Occurrd between: 14:17:58 01/19/09 Disposition: Disp Date: / /
and: 14:18:12 01/19/09 Misc Entry:
MO:
Narrative
Narrative:
Supplement: (See below)
= =
INVOLVEMENTS:
Type Record # Date Description Relationship
CA G09000726 01/19/09 14:18 01/19/09 FIRE *Initiating Call
FIRE Conditions Detail:
Fire Condition Codes
Seq Code
1 FIRE Fire, Undetermined Type
FIRE Incident Responder Detail
Responding Officers
Seq Name Unit
1 750 750
2 Monroe Fire Cmd 750F
Responding Officers
Seq Name Unit
3 751F 751F

Main Radio Log Table:
Time/Date Typ Unit Code Zone Agnc Description
21:45:16 01/19/09 f 751F CMPLT MNFD MNFD incid#=F09-00021 Completed Cal
21:45:15 01/19/09 f 750 CMPLT MNFD MNPD incid#=1665 Completed Call cal
21:45:15 01/19/09 f 750F CMPLT MNFD MNFD incid#=F09-00021 Completed Cal
21:37:19 01/19/09 f 751F RTQTR MNFD MNFD (MDC), call=46f
20:47:08 01/19/09 e 801E CMPLT GEMS GEMS incid#=E09-00070 Completed Cal
20:45:40 01/19/09 e 801E ARVDH GEMS GEMS incid#=E09-00070 Arrived at Ho
20:42:53 01/19/09 e 801E RTQTR GEMS GEMS incid#=E09-00070 Enroute to St
20:42:10 01/19/09 e 801E ENRTH GEMS GEMS incid#=E09-00070 Enroute to Ho
15:25:22 01/19/09 e 801E ARRVD GEMS GEMS incid#=E09-00070 Arrived on Sc
14:23:45 01/19/09 f 751F ARRVD MNFD MNFD incid#=F09-00021 Arrived on Sc
14:22:07 01/19/09 f 750F ARRVD MNFD MNFD incid#=F09-00021 Arrived on Sc
14:21:40 01/19/09 f 750 CMPLT MNFD MNPD incid#=1665 Completed Call cal
14:21:12 01/19/09 f 750F ENRT MNFD MNFD incid#=F09-00021 Enroute to a
14:20:04 01/19/09 f 750 ENRT MNFD MNPD incid#=1665 Enroute to a Call
Fire Supplemental Narrative:
Supplemental Narratives
Seq Name Date Narrative
1 J Hasse 21:45:16 01/19/09
CAD Call info/comments
==========
FIRE IN GRAIN DRIER
14:22:27 01/19/2009 - E Berget
ON SCENE HEAVY SMOKE SHOWING
14:24:11 01/19/2009 - E Berget
PULL BOX CARD 5-1-8 AND STAND BY
14:24:28 01/19/2009 - E Berget
7510 SECOND ALERT PLEASE
14:26:06 01/19/2009 - E Berget
LARGE FIRE IS IN OUTSIDE DRIER NOT POSING THREAT WILL HOLD OFF ON BOX FOR NOW
14:51:04 01/19/2009 - E Berget
GET BRODHEAD TRUCK 2 TO SCENE
15:10:03 01/19/2009 - E Berget
BOX 5-1-8 TO BOX LEVEL PLEASE
15:10:58 01/19/2009 - E Berget - From: Monroe Fire Cmd
REPAGE FOR MORE FF'S

_____
MABAS TIMES:
1510: ALERT
1512: 801 10-8
1513: BTWN 10-8 10-76 WITH TENDER
1514: JUDA 10-8
1516: MONTICELLO 10-8
1517: MONTICELLO 10-76
1518: JUDA 10-76
1518: BRODHEAD 10-23
1519: 801 STATUS?/10-76
1520: BROWNTOWN 10-76 WITH TENDER
1521: TO BROWNTOWN....REQUESTED WITH ENGINE FOR COQ//ENROUTE ALREADY WITH TENDER
1523: 801 STAGING AT SLICE?//10-4
1524: BROWNTOWN 10-23 WITH TENDER
1525: ORANGEVILLE 10-76
1526: ORANGEVILLE 10-76 WITH SQUAD
1526: TO CEDARVILLE...STATUS?/ 10-76
1528: TO BROWNTOWN ENGINE...STATUS?/ABOUT READY TO ROLL
1529: JUDA 10-23
1530: BROWNTOWN ENGINE 10-76 COQ
1532: MONTICELLO 10-23
1535: ORANGEVILLE 10-23
1543: BROWNTOWN 10-23 COQ
15:52:03 01/19/2009 - E Berget - From: Monroe Fire Cmd
USE GREEN COUNTY FIRE TO CONTACT ME FIRE IS UNDER CONTROL DO NOT STRIKE BOX YET
15:54:13 01/19/2009 - E Berget
15:51 CEDARVILLE 10-23 COQ
15:57:05 01/19/2009 - E Berget - From: Monroe Fire Cmd
STAGING HAS BEEN MOVED TO ONSITE ALL UNITS HAVE REPORTED
16:12:51 01/19/2009 - E Berget - From: Monroe Fire Cmd
REQUEST LIGHT TOWER JUDA OR MONT//EITHER OR..WHICH ONE??/JUDA...CLOSER
1612: JUDA 10-8 WITH LIGHT TOWER/SWITCH TO IFERN AS THIS IS A MABAS CALL
16:22:19 01/19/2009 - E Berget
1619 JUDA LIGHT TOWER ENROUTE
16:37:55 01/19/2009 - E Berget - From: Monroe Fire Cmd
GET LIGHT TOWER FROM MONTICELLO
17:02:30 01/19/2009 - E Berget
1700 MONTICELLO LIGHT TOWER ON SCENE
17:25:30 01/19/2009 - E Berget
1722 MONTICELLO COMMAND 7 ENROUTE TO THEIR STATION
17:29:24 01/19/2009 - E Berget
CONTACT FREEPORT FOR AREAL
17:33:08 01/19/2009 - E Berget

ANY WORD FROM FREEPORT//305 NEG//7510 IF THEY ARE NOT AVAILABLE CONTACT MOUNT
HOREB
17:33:46 01/19/2009 - E Berget
7510 FREEPORT IS COMING PER PHONE CALL
17:54:00 01/19/2009 - E Berget
ANY WORD FROM FREEPORT//305 NEG
17:57:22 01/19/2009 - E Berget
FREEPORT AREAL ETA 20 MIN
17:57:37 01/19/2009 - E Berget
7510 GIVE FREEPORT DIRECTIONS
18:43:52 01/19/2009 - K Vetterli - From: Monroe Fire Cmd
still working to control fire in various areas of the assembly, every time we
get control in one area find fire somewhere else, we are not releasing any
resources at this time and are not striking the box//4
20:28:30 01/19/2009 - J Hasse
MNFD COMMAND STRIKE BOX 518 AT THIS TIME//BOX STRIKED OUT BY RADIO
20:47:40 01/19/2009 - J Hasse
MNFD COMMAND STARTING TO RELEASE UNITS
20:48:22 01/19/2009 - J Hasse
#801 BACK IN QUARTERS
20:55:02 01/19/2009 - J Hasse
BROWNTOWN TENDER 2 RETURNING TO STATION
21:01:43 01/19/2009 - J Hasse
JUDA FIRE ASSIGNMENT COMPLETED AND RETURNING TO STATION
21:10:35 01/19/2009 - J Hasse
MONTICELLO FIRE RETURN TO MONTICELLO ON GREEN COUNTY FIRE
21:39:09 01/19/2009 - J Hasse
MONROE FIRE LAST UNIT CLEARING AND RETURNING TO QUARTERS
21:45:08 01/19/2009 - J Hasse
MONROE FIRE PUT US OUT OF SERVICE

Monroe Fire Department

Officer Report for Incident F09-00021

Nature: FIRE
Location:

Address: 820 W 17TH ST
MONROE WI 53566

Offense Codes:
Received By: E Berget **How Received:** 9 **Agency:** MNFD
Responding Officers:
Responsible Officers: **Disposition:** **/**/**
When Reported: 14:18:25 01/19/09 **Occurred Between:** 14:17:58 01/19/09 and 14:18:12 01/19/09

Assigned To: **Detail:** **Date Assigned:** **/**/**
Status: **Status Date:** **/**/** **Due Date:** **/**/**

Complainant:
Last: **First:** **Mid:**
DOB: **/**/** **Dr Lic:** **Address:**
Race: **Sex:** **Phone:** **City:** ,

Alert Codes:

Circumstances

Responding Officers: **Unit :**
750 750
Monroe Fire Cmd 750F
751F 751F

Responsible Officer: **Agency:** MNFD
Received By: E Berget **Last Radio Log:** **:**:** **/**/**
How Received: 9 911 Line **Clearance:**
When Reported: 14:18:25 01/19/09 **Disposition:** **Date:** **/**/**
: **Occurred between:** 14:17:58 01/19/09
Misc Entry: **and:** 14:18:12 01/19/09

Modus Operandi: **Description :** **Method :**

Involvements

Date	Type	Description

Narrative

Responsible LEO:

Approved by:

Date

Supplement

CAD Call info/comments
==========

FIRE IN GRAIN DRIER

14:22:27 01/19/2009 - E Berget
ON SCENE HEAVY SMOKE SHOWING
14:24:11 01/19/2009 - E Berget
PULL BOX CARD 5-1-8 AND STAND BY
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BOX 5-1-8 TO BOX LEVEL PLEASE
15:10:58 01/19/2009 - E Berget - From: Monroe Fire Cmd
REPAGE FOR MORE FF'S

MABAS TIMES:

1510: ALERT
1512: 801 10-8
1513: BTWN 10-8 10-76 WITH TENDER
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GET LIGHT TOWER FROM MONTICELLO
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17:57:37 01/19/2009 - E Berget
7510 GIVE FREEPORT DIRECTIONS
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MONROE FIRE LAST UNIT CLEARING AND RETURNING TO QUARTERS
21:45:08 01/19/2009 - J Hasse
MONROE FIRE PUT US OUT OF SERVICE

A — FDID * 23050 | State * WI | Incident Date (MM DD YYYY) * 01 19 2009 | Station 1 | Incident Number * 09-0000021 | Exposure * 000 | ☐ Delete ☐ Change ☐ No Activity | NFIRS -1 Basic

B Location*

☐ Check this box to Indicate that the address for this incident is provided on the Wildland Fire Module In Section B "Alternative Location Specification". Use only for Wildland fires. Census Tract ____ - ____

☒ Street address ☐ Intersection ☐ In front of ☐ Rear of ☐ Adjacent to ☐ Directions

Number/Milepost 820 | Prefix W | Street or Highway 17th | Street Type ST | Suffix ____

Apt./Suite/Room ____ | City Monroe | State WI | Zip Code 53566 - ____

Cross street or directions, as applicable ____

C Incident Type *

112 | Fires in structure other than

Incident Type

D Aid Given or Received*

1 ☒ Mutual aid received
2 ☐ Automatic aid recv.
3 ☐ Mutual aid given
4 ☐ Automatic aid given
5 ☐ Other aid given
N ☐ None

Their FDID ____ | Their State ____ | Their Incident Number ____

E1 Date & Times — Midnight is 0000

Check boxes if dates are the same as Alarm Date.

	Month	Day	Year	Hr Min Sec
ALARM always required				
Alarm *	01	19	2009	14:18:00
ARRIVAL required, unless canceled or did not arrive				
☒ Arrival *	01	19	2009	14:22:00
CONTROLLED Optional, Except for wildland fires				
☒ Controlled	01	19	2009	21:37:00
LAST UNIT CLEARED, required except for wildland fires				
☒ Last Unit Cleared	01	19	2009	21:37:00

E2 Shift & Alarms

Local Option

Shift or Platoon 1 | Alarms 02 | District CITY

E3 Special Studies

Local Option

Special Study ID# ____ | Special Study Value ____

F Actions Taken*

11 | Extinguishment by fire — Primary Action Taken (1)

____ | ____ — Additional Action Taken (2)

____ | ____ — Additional Action Taken (3)

G1 Resources*

☒ Check this box and skip this section if an Apparatus or Personnel form is used.

	Apparatus	Personnel
Suppression	0020	0078
EMS		
Other		

☒ Check box if resource counts include aid received resources.

G2 Estimated Dollar Losses & Values

LOSSES: Required for all fires if known. Optional for non fires.

		None
Property	$, 150 , 000	☐
Contents	$, 025 , 000	☐

PRE-INCIDENT VALUE: Optional

Property	$ 005 , 000 , 000	☐
Contents	$, 350 , 000	☐

Completed Modules

☒ Fire-2
☒ Structure-3
☐ Civil Fire Cas.-4
☐ Fire Serv. Cas.-5
☐ EMS-6
☐ HazMat-7
☐ Wildland Fire-8
☒ Apparatus-9
☒ Personnel-10
☐ Arson-11

H1 * Casualties ☒ None

	Deaths	Injuries
Fire Service		
Civilian		

H2 Detector

Required for Confined Fires.

1 ☐ Detector alerted occupants
2 ☐ Detector did not alert them
U ☐ Unknown

H3 Hazardous Materials Release

N ☐ None
1 ☐ Natural Gas: slow leak, no evauation or HazMat actions
2 ☐ Propane gas: <21 lb. tank (as in home BBQ grill)
3 ☐ Gasoline: vehicle fuel tank or portable container
4 ☐ Kerosene: fuel burning equipment or portable storage
5 ☐ Diesel fuel/fuel oil: vehicle fuel tank or portable
6 ☐ Household solvents: home/office spill, cleanup only
7 ☐ Motor oil: from engine or portable container
8 ☐ Paint: from paint cans totaling < 55 gallons
0 ☐ Other: Special HazMat actions required or spill > 55gal., Please complete the HazMat form

I Mixed Use Property

NN ☐ Not Mixed
10 ☐ Assembly use
20 ☐ Education use
33 ☐ Medical use
40 ☐ Residential use
51 ☐ Row of stores
53 ☐ Enclosed mall
58 ☐ Bus. & Residential
59 ☐ Office use
60 ☒ Industrial use
63 ☐ Military use
65 ☐ Farm use
00 ☐ Other mixed use

J Property Use* — Structures

131 ☐ Church, place of worship
161 ☐ Restaurant or cafeteria
162 ☐ Bar/Tavern or nightclub
213 ☐ Elementary school or kindergarten
215 ☐ High school or junior high
241 ☐ College, adult education
311 ☐ Care facility for the aged
331 ☐ Hospital
341 ☐ Clinic,clinic type infirmary
342 ☐ Doctor/dentist office
361 ☐ Prison or jail, not juvenile
419 ☐ 1-or 2-family dwelling
429 ☐ Multi-family dwelling
439 ☐ Rooming/boarding house
449 ☐ Commercial hotel or motel
459 ☐ Residential, board and care
464 ☐ Dormitory/barracks
519 ☐ Food and beverage sales
539 ☐ Household goods,sales,repairs
579 ☐ Motor vehicle/boat sales/repair
571 ☐ Gas or service station
599 ☐ Business office
615 ☐ Electric generating plant
629 ☐ Laboratory/science lab
700 ☒ Manufacturing plant
819 ☐ Livestock/poultry storage(barn)
882 ☐ Non-residential parking garage
891 ☐ Warehouse

Outside

124 ☐ Playground or park
655 ☐ Crops or orchard
669 ☐ Forest (timberland)
807 ☐ Outdoor storage area
919 ☐ Dump or sanitary landfill
931 ☐ Open land or field
936 ☐ Vacant lot
938 ☐ Graded/care for plot of land
946 ☐ Lake, river, stream
951 ☐ Railroad right of way
960 ☐ Other street
961 ☐ Highway/divided highway
962 ☐ Residential street/driveway
981 ☐ Construction site
984 ☐ Industrial plant yard

Lookup and enter a Property Use code only if you have NOT checked a Property Use box:

Property Use 700

Manufacturing, processing

NFIRS-1 Revision 03/11/99

FDID	State	MM	DD	YYYY	Station	Incident Number	Exposure	Complete Narrative
23050	WI	1	19	2009	1	09-0000021	000	

Narrative:

On 01/19/2009 at 14:18:00 dispatched To 820 W 17th ST /Monroe, WI 53566. The location is a Manufacturing, processing. The incident was determined to be a(n) Fires in structure other than in a building.

Personal Statement
Fire Chief Daryl A Rausch
Incident Commander
F.I. # 09-021
1-19-2009

The Monroe fire Department was alerted at 1418 hrs for a reported dryer fire at Badger State Ethanol located at 820 west 17th Street in the City of Monroe.

I responded with Command 10 as the incident commander arriving at 1421hrs. While enroute on 17th Street near The SLICE Arena I observed heavy gray smoke and requested a second alarm for smoke showing. I also advised GRSO Dispatcher Eric Berget to pull out MABAS Box card 0518 and stand by to activate the MABAS system on my orders. He acknowledged and stated that plant personnel would be waiting my arrival at the office parking lot.

MNPD personnel arrived at about the same time we did and were assigned to control traffic on West 17th Street. MNPD 210 and 249 units were eventually released once most mutual aid units arrived.

I was met at the office parking lot by BSE Safety Director Laurie Cannova. She informed me that they had a fire in a dryer in the new process area south of the processing building. She further advised that plant personnel were fighting the fire and were waiting our arrival. I immediately transmitted a "Code Red" in the open and proceeded to the area along with Deputy Chief Heins who had arrived with Command 11 while I was talking with Ms. Cannova.

I assumed command and DC Heins assumed operations as prescribed by standard policy. DC Heins started to issue orders to responding units while I met with Mr. Gary Kramer and Bill Jacobson to establish priority of operations. Both felt that the fire was contained to a dryer unit. I advised GRSO that we would not be activating the MABAS box but did request a special call at 1452 hrs of Brodhead T-2 to the scene and Browntown for a tender and Juda for an engine to back-fill our station.

I observed BSE personnel working near a dryer/cooler assembly using a 2 ½" hand line they advised they thought they had the fire under control but not extinguished. Gary Kramer also advised he thought a dust explosion had started the fire.

MNFD E-8 arrived on scene at 1428 hrs and laid a supply line from a hydrant west of the operational area. E-8 was assigned fire attack. Ladder 7 arrived at 1431 hrs and laid a supply line from a hydrant near the truck fill stand. MNFD E-9 arrived at 1437 hrs and backed up the center road and staged near MNFD Ladder 7 who was positioned for elevated stream access near the SE corner of the area. AC Briggs who was the officer on E-9 was assigned staging officer.

It was about this time that crews and DC Heins observed fire had spread through the product ductwork to there equipment and areas of the process machinery. DC Heins suggested we activate the MABAS box to the first alarm which I did at 1510 hrs
MNFD Engine 5 arrived at 1511 hrs and was assigned to lay a supply line on the west side of

A — FDID: 23050 | State: WI | Incident Date: MM 1 / DD 19 / YYYY 2009 | Station: 1 | Incident Number: 09-0000021 | Exposure: 000 | Delete | Change | NFIRS - 9 Apparatus or Resources

B Apparatus or Resource	Date and Times (Check if sent as alarm date)	Month	Day	Year	Hour	Min	Sent	Number of People	Use (Check ONE box for each apparatus to indicate the one mode used at the incident.)	Actions Taken
1 ID C750 Type 91	Dispatch	X	1	19	2009	14:18	X	1	X Suppression	
	Arrival	X	1	19	2009	14:22			☐ EMS	
	Clear	X	1	19	2009	21:37			☐ Other	
2 ID C751 Type 92	Dispatch	X	1	19	2009	14:18	X	1	X Suppression	
	Arrival	X	1	19	2009	14:23			☐ EMS	
	Clear	X	1	19	2009	21:37			☐ Other	
3 ID E755 Type 11	Dispatch	X	1	19	2009	14:18	X	6	X Suppression	
	Arrival	X	1	19	2009	14:55			☐ EMS	
	Clear	X	1	19	2009	21:37			☐ Other	
4 ID E756 Type 11	Dispatch	X	1	19	2009	14:18	X	5	X Suppression	
	Arrival	X	1	19	2009	15:10			☐ EMS	
	Clear	X	1	19	2009	21:37			☐ Other	
5 ID E758 Type 11	Dispatch	X	1	19	2009	14:18	X	8	X Suppression	
	Arrival	X	1	19	2009	14:28			☐ EMS	
	Clear	X	1	19	2009	21:37			☐ Other	
6 ID E759 Type 11	Dispatch	X	1	19	2009	14:18	X	8	X Suppression	
	Arrival	X	1	19	2009	14:32			☐ EMS	
	Clear	X	1	19	2009	21:37			☐ Other	
7 ID L757 Type 12	Dispatch	X	1	19	2009	14:18	X	6	X Suppression	
	Arrival	X	1	19	2009	14:31			☐ EMS	
	Clear	X	1	19	2009	21:37			☐ Other	
8 ID Type	Dispatch	☐					☐		☐ Suppression	
	Arrival	☐							☐ EMS	
	Clear	☐							☐ Other	
9 ID Type	Dispatch	☐					☐		☐ Suppression	
	Arrival	☐							☐ EMS	
	Clear	☐							☐ Other	

Type of Apparatus or Resources

Ground Fire Suppression
- 11 Engine
- 12 Truck or aerial
- 13 Quint
- 14 Tanker & pumper combination
- 16 Brush truck
- 17 ARF (Aircraft Rescue and Firefighting)
- 10 Ground fire suppression, other

Heavy Ground Equipment
- 21 Dozer or plow
- 22 Tractor
- 24 Tanker or tender
- 20 Heavy equipment, other

Aircraft
- 41 Aircraft: fixed wing tanker
- 42 Helitanker
- 43 Helicopter
- 40 Aircraft, other

Marine Equipment
- 51 Fire boat with pump
- 52 Boat, no pump
- 50 Marine apparatus, other

Support Equipment
- 61 Breathing apparatus support
- 62 Light and air unit
- 60 Support apparatus, other

Medical & Rescue
- 71 Rescue unit
- 72 Urban Search & rescue unit
- 73 High angle rescue unit
- 75 BLS unit
- 76 ALS unit
- 70 Medical and rescue unit,other

More Apparatus? Use Additional Sheets

Other
- 91 Mobile command post
- 92 Chief officer car
- 93 HazMat unit
- 94 Type 1 hand crew
- 95 Type 2 hand crew
- 99 Privately owned vehicle
- 00 Other apparatus/resource

- NN None
- UU Undetermined

NFIRS-9 Revision 11/17/98