NON-EMERGENCY RESPONSE ISSUES

Executive Development

# Identifying Issues When Responding Without Lights and Siren to Selected Call Types for the Anne Arundel County Fire Department

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## CERTIFICATION STATEMENT

I hereby certify that 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.

Signed: _____

**Abstract**

The problem was to identify issues to establish a non-emergency response policy. The purpose was to reduce the risk of injuries and death to citizens and firefighters from vehicle collisions. Research questions included:

1. Why consider a non-emergency response policy?
2. What issues should be addressed?
3. What steps are required?
4. What monitoring is required?

Descriptive research methods included surveys to other departments and citizens, personal interviews, and response data analysis. Results identified a number of issues including response time, public perception, training needs, law and public official involvement, criteria for selecting non-emergency call types, and others. Recommendations included addressing all identified issues in a logical sequence, instituting a quality assurance program, and implementing a system to monitor collisions, false alarms, fuel use, and other critical factors.

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Appendices

**Identifying Issues When Responding Without Lights and Siren to Selected Call Types for the Anne Arundel County Fire Department**

The Anne Arundel County Fire Department has experienced a firefighter fatality due to a vehicle collision, and has been involved in other collisions in which civilians have lost their lives. While proactive measures such as driver's training were in place, the Anne Arundel County Fire Department desired to further reduce the risk of injuries and death to their citizens and firefighters from vehicle collisions by identifying certain call-types where units would respond without lights and siren. The research problem was the department did not have an understanding of the issues related to a non-emergency response policy, an objective method to select calls that warranted a non-emergency response, and the components to measure feedback and the control measures of an effective program. The purpose of this research was to provide the administrators of the Anne Arundel County Fire Department with the basis to develop an effective non-emergency response policy with the goal of reducing the risks to their citizens and firefighters. Descriptive research was used to study the present situation and formulate a basis for a correct course of action. Research questions included the following:

1. Why should the Anne Arundel County Fire Department consider a non-emergency response to selected call types?
2. Within the call types to which the Anne Arundel County Fire Department responds, what issues should be addressed when classifying certain calls for a split (emergency/non-emergency) or non-emergency response?
3. What are the appropriate steps for implementing a non-emergency response policy that address the issues identified?

4. What monitoring, feedback, and control mechanisms are required to measure the effectiveness of such a policy and maintain it for the future?

## Background and Significance

An increasing number of firefighters in the United States are being killed while responding to or returning from emergencies. More firefighters were killed during 2003 and 2004 while responding to or returning from emergencies, than any other type of duty (National Fire Protection Association [NFPA], 2005). In 2003, vehicle collisions claimed the lives of 53 civilians and fire service members. Of those, 37 (70%) fatalities occurred during an emergency response (National Highway Traffic Safety Administration [NHTSA], 2004). In 2002 there were 34 civilian and fire service fatalities, 18 of which occurred during an emergency. (NHTSA, 2003). In May 2004, during the Firefighter Life Safety Summit, sponsored by the National Fallen Firefighters Foundation, 16 initiatives were established to help reduce the number of firefighter deaths by 25 % within five years and 50% within 10 years. One of the initiatives recommended was a national protocol for emergency response, part of which would specifically determine when an emergency response is and is not appropriate (Firefighter Life Safety Summit, 2004).

Anne Arundel County, Maryland has a population that approaches 500,000 and covers 534 miles of shoreline along the Chesapeake Bay. The Anne Arundel County Fire Department's 30 fire stations and support facilities are staffed by more than 1,200 career and volunteer personnel who provide emergency medical services, fire suppression, inspections, investigations, hazmat responses, special operations, communications, training and related functions with an annual budget of $81 million. The number of annual dispatched calls exceeds 73,000.

On April 9, 1970, the Anne Arundel County Fire Department experienced its first line of duty death of a career employee during an emergency response. Ms. Donna Goins, Insurance Services Manager for Anne Arundel County, who began collecting records on vehicle collisions in 1977, reported that the fire department has been involved in 3,875 collisions. The total direct costs of those collisions have exceeded $1,648,719. A total of seven civilians died as a result of collisions with fire and emergency medical vehicles during an emergency response (D. Goins, personal communications, September 22, 2005).

Over the years, the Anne Arundel County Fire Department has taken steps to enhance safety and reduce the overall number and severity of vehicle collisions. Drivers meet National Fire Protection Association standards, take part in annual driver's training that includes a classroom and a practical component; drivers are automatically included in a "red flag" program which allows Anne Arundel County to receive notice anytime an entry is made to their Maryland Driver's License record. Those with more than six points are not allowed to drive and face disciplinary action. A collision review board reviews all collisions and recommends action to prevent a recurrence. A discipline process is administered to those involved in preventable collisions and safe drivers are recognized for their years of not being involved in a preventable collision. Traffic pre-emption devices have been installed at numerous intersections that allow emergency vehicles to pre-empt a red signal. Several types of calls have already been designated for a non-emergency response including: controlled burnings, odors of smoke outside, and assisting the police with evacuations. Most recently, ambulance personnel began making an on-scene determination if an emergency or non-emergency transport to the hospital was warranted. In 1998, the Department's completed its first self-assessment of the National Fire Protection Association's (NFPA) Standard 1500, Standard on Fire Department Occupational Safety and

Health. While the initial assessment found the Department was only 41% compliant, improvements were made and today, the compliance approaches 85% (Williams, 2005). Some of the improvements made as recommended in the Vehicle Safety Section of NFPA 1500 to reduce vehicle collisions included the establishment of policies regarding vehicle speed, actions at intersections, etc. Although these have been pro-active steps, injuries and deaths as the result of vehicle collisions during an emergency response will likely continue to be a risk as long as all options, including the implementation of a non-emergency response policy are considered.

The problem of an inadequate understanding of issues associated with a non-emergency response policy relates to two operational objectives established by United States Fire Administration. First, it promotes within the community a comprehensive, multi-hazard risk reduction plan to reduce the number of injuries and deaths to citizens and firefighters from vehicle collisions. Second, it helps to address an emerging issue as identified by the Firefighter Life Safety Summit to reduce the number of firefighter deaths by establishing a response policy that addresses when an emergency response is and is not appropriate. Lastly, it relates to aspects of leadership and change within the Executive Development Executive Fire Officer Program course.

## Literature Review

The literature review was organized around the four research questions that were being investigated. The first question asked why the Anne Arundel County Fire Department should consider a non-emergency response to selected call types. The literature review began with news surrounding several recent fatal vehicle collisions that draw attention to the importance of considering all avenues to reduce risk, including non-emergency response policies. On June 7, 2005, Goldfedder (2005) reported that detectives still did not know how fast a fire engine was

going in East Contra Coast County, CA. when it collided with a car, killing a 55-year-old woman. It was responding to a brush fire. On June 8, 2005, Goldfedder (2005) reported on an accident in Washington, DC where the driver of fire apparatus lost control on a curve, flipped to its side and came to stop in the opposite lane of traffic. They were responding to a minor kitchen fire that was reported out. On August 7, 2005, Goldfedder (2005) reported on a California Division of Forestry engine company that was involved in a single vehicle accident resulting in a firefighter being killed and two others injured. On August 21, 2005, Goldfedder (2005), reported on a Michigan firefighter that was charged in the traffic deaths of a Traverse City-area woman and her eleven-month-old son. The driver was responding to a chimney fire when his fire apparatus collided with their sport utility vehicle. The driver was arraigned on two counts of negligent homicide and now faces up to two years in jail. Ironically, he was his battalion's safety officer when the crash occurred. Locally, in Maryland, Craig (2004), a reporter for the Washington Post wrote that Montgomery County Fire/Rescue, MD had been involved in 1,100 accidents in the previous five years, causing so much damage that the department risked losing its insurance coverage. Their insurance carrier raised its annual premium 17% from about $1.38 million to $1.62 million. One of the changes, Montgomery County Fire/Rescue plans to institute is a policy requiring the first units to arrive at the scene of a fire to radio other vehicles to slow down if there is no apparent need for a quick response. One of the most well known incidents was reported by Clawson (1991). He described a 1989 incident in Bloomington, IL when Sharon Frieburg was permanently disabled when an ambulance struck her vehicle while transporting a patient with a sprained ankle while responding with lights and siren. As a result, the city was required to pay $5 million in cash payments. Wolfberg (1996) reported that Glatfelter Insurance Group who manages Volunteer Firemen's Insurance Services and Ambulance Insurance Services

pay out their largest settlements for vehicle collisions. Mr. Denny Lockard, Traffic Safety Consultant who teaches Highway Traffic Safety to Fire and Police agencies across the country reports that as many as 38% of all accidents occur in the traffic back-up as the result of other vehicle collisions (D. Lockard, personal communications, August 15, 2005). As a result, the number of collisions caused by emergency responses may actually be greater than realized. The literature review revealed some research with regard to the increased risk of a collision during an emergency response. Wilbur (1995) has studied collision statistics and suggests that an emergency vehicle with lights and siren has a three times greater chance of being involved in a collision as opposed to a non-emergency vehicle, and the risk of being injured or killed is 10 times greater. Wolfburg (1996) reports that an ambulance involved in a fatal crash is twice as likely to have been responding with lights and siren. Ludwig (2002) discusses a 1993 Houston study that concluded that ambulances are 13 times more likely to be involved in an accident than any other vehicle in terms of the number of accidents per mile driven. One consideration regarding the number of crashes may be based upon the reaction by the public to an emergency vehicle. Wilbur (1995) suggests that the excessive use of lights and sirens has caused the public to ignore vehicles responding to emergencies. While all may not agree with that statement, most would agree that the sound deadening characteristics of modern vehicles, along with the use of radios, cell phones, and other distractions lessen the chances the public will react in a timely and safe manner to an emergency vehicle. The literature review found many studies that suggest an emergency response is not necessary. Snooks, et al. (1998), reports that 40% of ambulance responses in the United Kingdom do not require lights and siren. In another study, in Paris, Foex and Walter (2002) reported that only 820 calls (6%) of their 300,000 calls resulted in a response by a mobile intensive care unit. Some literature suggested a non-emergency response

policy has proven to reduce vehicle collisions. Clawson and Dernocoer (2004) reported a decrease of 78% in emergency medical vehicle collisions in Salt Lake City, UT after the implementation of Emergency Medical Dispatch which helps prioritize calls for non-emergency response. Schaper (1997) reported that the St. Louis Fire Department reduced their accident rate by 35% after they discontinued emergency responses to 19 different types of responses, and required that all emergency responses not exceed the posted speed limit. They also found that the collisions that they continued to have were much less severe. In addition, they reported an unexpected benefit in a reduction of dumpster fires by over 50% (Schaper, 1998). One could surmise that many were being set intentionally, and once units discontinued a lights and siren response, it was of less interest to the arsonists. Hilton and Smith (1987) reported on the success of Cobb County, GA when on a full fire response of multiple units, only the first due unit responded with lights and siren. They believe this reduces the "Red Light Syndrome" that is accompanied by a feeling of power, as well as increased blood pressure, respiration and adrenaline flow that causes people to sometimes do irrational things while responding to emergency calls. In summary, the literature review offers a substantial amount of information that suggests a department should consider a non-emergency response policy.

The next question asked within the call types to which the Anne Arundel County Fire Department responds, what issues should be addressed when classifying certain calls for a split or non-emergency response? One issue of critical importance is the establishment of an objective method to determine the call types that should be candidates for a non-emergency response. A review of literature did not provide much information to address this issue, especially for fire calls. Schaper (1997) describes the "On the Quiet" policy established by the St. Louis Fire Department, MO. While they selected 19 call types, he seemed to indicate that

they were selected based on the general experience of the outcome of these types of calls. The literature review indicated there are several commercial systems available to assist in selecting non-emergency call types. Each provides cards (manual or computerized) that prompt questions to be asked by 911 dispatchers for each call type. Based upon the response to the questions, a given response type is suggested. Local policy dictates what response level is appropriate for each response type. The specific systems available include the Emergency Medical Dispatch (EMD) Protocol by the Priority Dispatch Corporation, Emergency Fire Dispatch (EFD) Protocol, by Priority Dispatch Corporation, Association of Public-Safety Communications Officials (APCO), and Power Phone. Allen (1994), who compared each system, prefers Priority Dispatch Corporation. He believes that system provides the best set of protocols, is backed up with 10 years of experience and has a director of national stature. Each of the available systems also provide prompts to provide pre-arrival instructions. Burns (1999) suggests because it is difficult to determine with certainty that an incident is not an emergency, the use of pre-arrival instructions is a critically important issue. Cady and Lindberg (2001) discuss the 2001 JEMS report and indicate that more than 63% of agency communications centers reported using some form of emergency medical dispatch system technology. The second most commonly reported emergency medical dispatch program (10%) was "in-house" or agency developed. Ironically, even though a large number of agencies reported having these prioritization tools, 37% continue to respond hot (lights and siren) to all requests. Clawson (2002) believes the benefit of a system, such as his Priority Dispatch System which provides a standardized protocol in and of itself can reduce community liability. Allen (1994) reported that the American Society of Testing and Materials (ASTM) has a standard (F12.20.90) related to EMS protocol. While it does not

recommend specific dispatch protocols, it simply says a written protocol should exist which is medically derived and followed on a routine basis in the dispatch center.

Another issue identified in the literature review was the impact of lights and siren on response time. Hunt, et al. (1995) studied responses in Greenville, NC and found lights and siren resulted in a 43.5 seconds mean time savings. Ho and Lindqist (2001) studied response times in Becker County, MN and found lights and siren resulted in an average time savings of 3.63 minutes. Brown, Whitney, Hunt, Addario and Hogue (2000) conducted a study in Syracuse, NY and found lights and siren reduced ambulance response times by an average of 1 minute and 46 seconds. Patterson (2003) makes reference to another study in St. Petersburg, FL that analyzed nearly 700 responses where the average difference between a hot (emergency) and cold (non-emergency) response was 33 seconds. While many of these reports agreed the times may not be statistically significant, they were not consistent as to whether the times were clinically significant.

Patient outcome was another issue discovered in the literature review. Kupas, Dula, and Pino (1994) studied patient outcome verses non-emergency response after the implementation of a standardized protocol. Of the 1,625 patients in the study, only 130 (8%) were transported using lights and siren. Another study by O'Brien, Price and Adams (1999), found that only 4 of their 75 patients transported were felt to have benefited by an emergency response.

Training is another issue identified. Elrich (2003) studied collision statistics and concluded that the overwhelming majority of accidents are caused by human error or negligence. Thus, training and compliance with appropriate safe driving policies appears to be a significant issue.

The issue of liability was found in several sources. A true emergency is defined as a situation where there is a high probability of death or serious injury (Federal Emergency Management Agency, 1996). It would appear that responses to other types of incidents not fitting this category could pose concern for liability. Thus, the call types selected for a non-emergency response seems to be critically important. Wilbur (1994) speaks to the issue of "due regard." He surveyed every state in the U.S. and found only emergency vehicle operators in the emergency mode are required to drive with "due regard", and are thus held accountable and liable for this higher standard of driving. He concludes that it will be assumed that drivers did not use "due regard" if the result was a vehicle collision. According to Clawson (2002), lawsuits for not responding with lights and siren simply do not exist. He said that there has never been a lawsuit in the United States or Canada for not responding with lights and siren.

A miscellaneous assortment of literature addressed several areas including a study by Snooks, et al. (1998) that suggests an alternative to providing non-emergency response can also be a referral to other agencies. Next, it was suggested that many people join the fire/EMS service because of the emergency response. In fact, Wilbur (1995) reported on one department where a member quit because they adopted a non-emergency response policy on selected call types. Given this concern, comes issues as to whether "black boxes" as described by Jeff Clawson (2002) should be implemented to help monitor compliance with a non-emergency response policy. Lastly, literature discusses the degree that medical personnel can accurately identify a patient who requires treatment at an emergency department. A study by Silvestri, et. al. (2002) found that paramedics could not reliably predict which patients do and do not require emergency department care. Thus, they conclude that the need for a protocol is essential. In

summary, the literature review identified a number of issues to be considered before establishing a non-emergency response policy.

The next question asked, what are the appropriate steps for implementing a non-emergency response policy that addresses the issues identified? Contrary to the volume of literature that suggests a need for a non-emergency response policy, literature on how to implement it is extremely limited. The National Association of EMS Physicians and the National Association of State EMS Directors (1994) published a paper entitled "Use of Warning Lights and Sirens in Emergency Response and Patient Transport." It identified several issues and guidelines to be considered when implementing a non-emergency response policy. They included the following: (a) EMS directors should participate directly in the development of policies; (b) the use of lights and siren during an emergency response to the scene and during patient transport should be based upon standardized protocols; (c) EMS dispatch agencies should use a reference system that has been approved by their medical director to determine which require warning lights and siren; (d) except for suspected life threatening, time critical cases or cases involving multiple patients, lights and siren by more than one emergency vehicle usually is unnecessary; (e) the use of lights and siren should be limited to emergency responses and emergency transport situations only; (f) all agencies should institute educational programs for EMV operators; (g) EMV collisions should be evaluated by EMS managers and medical directors; (h) a national reporting system for EMV collisions should be established; (i) scientific studies evaluating the effectiveness of lights and siren should be conducted and validated; (j) laws should take into account safety practices and the public; and (k) national standards for safe EMV operation should be developed.

The last question, asked what monitoring, feedback, and control mechanisms are required to measure the effectiveness of such a policy and maintain it for the future? Again, a review of literature revealed very limited information. However, literature did emphasize the importance to monitor the effect of a change (Federal Emergency Management Agency, 2004). One method to monitor the efforts is offered with the computerized version of the National Academy EMD Protocol Medical Priority Dispatch System by Priority Dispatch. Its companion software package entitled AQUA (Advanced Quality Assurance) provides a platform they believe should meet the needs of quality improvement coordinators and dispatch supervisors. A study completed in Finland by Kuisma et al. (2004) evaluated whether deaths in lower priority categories could have been avoided by a faster ambulance response. These are categories that would have probably warranted a non-emergency response. Their findings indicated that one-third of those deaths could probably have been prevented by a faster ambulance response, but the price would be a three-fold increase in calls with lights and siren. Using the process identified in this study may assist a department to evaluate its effectiveness. Schaper (1997) reported that the St. Louis Fire Department, MO experienced a reduction in vehicle collisions by 35%, thus it would seem appropriate that any evaluation of the program should measure the impact on collision frequency and severity. In addition, the impact on other calls should be measured. For instance, Schaper, (1998) reported that St. Louis, MO also saw a reduction in dumpster fires from 2,598 to less than 900 after they began to respond without lights and siren to those types of incidents. While perhaps unanticipated, it was clearly a benefit and one that should be anticipated and measured. In the study by Hilton and Smith (1987), Cobb County, GA tracked whether vehicles responding as 2$^{nd}$, 3$^{rd}$ due, etc were involved in collisions, suggesting that this might be another component to measure.

In summary, the results of the literature review were mixed. It provided a great deal of information to help address some of the research questions, yet provided little background for others. Clearly, it influenced the author's research efforts. A survey to fire departments was designed to help identify issues to be considered, call selection and monitoring and feedback techniques. Next, since none of the research addressed concerns the public may have regarding a non-emergency policy, a survey mechanism was planned for the citizens of Anne Arundel County. It also impacted research relating to the difference in travel time between an emergency and non-emergency response. Research indicated the times were all relatively minor, but still varied per jurisdiction. Hence, research into the travel time within Anne Arundel County seemed warranted. Lastly, it impacted the criteria used to select calls for a non-emergency response. Other than methods available in the Priority Dispatch System, little else was offered as a method to address this issue. Thus, considerable research with response data from Anne Arundel County was used to help identify other objective methods.

## Procedures

The procedures utilized to address this research project consisted of 7 steps. The first step involved a detailed examination of literature. This began with a web search of the National Fire Academy's Learning Research Center (LRC). Keyword searches included: lights, siren, warning lights, response times, accidents, and liability. In addition, after explaining the subject title of this research project, the staff at the Learning Research Center provided a supply of literature. Later, keyword searches were done through the scholar research option included on the Google website. Individual websites from the National Highway Traffic Safety Administration (http://www.nhtsa.dot.gov) and Priority Dispatch (http://medicalpriority.com) were also utilized. A text book entitled "Principles of Emergency Medical Dispatch" by the

National Academy of Emergency Medical Dispatch (Clawson and Dernocoeur 2004) was obtained from Division Chief Reinhold Strobel, Communications Division Chief of the Anne Arundel County Fire Department. Literature found during this step helped address all research questions.

The second step was to solicit information from Fire/EMS departments from across the United States regarding non-emergency response policies. This was addressed through a survey, an example of which appears in Appendix A. Departments were selected for the survey by utilizing the Fire Department Census from the United States Fire Administration Website. The census allows users to select fire departments from each state in the United States and choose whether they are: (a) all career; (b) mostly career; (c) mostly volunteer; or (d) all volunteer. The author started in alphabetical order by state and selected an "all career" department. For the next state in alphabetical order, the "mostly career" option was selected. For the next state in alphabetical order, the "mostly volunteer" option was utilized. The author continued in this fashion to get a broad spectrum of various types of departments across the country. A return, stamped envelope and one questionnaire was distributed to every state. This procedure helped address all questions. A limitation of this procedure was the relatively small number of fire departments to which the survey was directed.

The third step included research into the frequency and severity of vehicle collisions within Anne Arundel County. This was completed during a phone interview with Ms. Donna Goins, Insurance Services Manager for Anne Arundel County on September 21, 2005. This helped address the question as to why the Anne Arundel County Fire Department should consider a non-emergency response to selected call types?

The fourth step helped the author better understand the Priority Dispatch System. This type of system was recognized by JEMS as the predominant method used to select calls for non-emergency response (Cady and Lindberg, 2001). Interviews and visits with some of its users were included. The author started with a demonstration of the system at the Anne Arundel County Department Communications Division where the Emergency Medical Dispatch component of Priority Dispatch System is used to screen calls. However, they do not use the component that helps categorize calls as emergency or non-emergency (C. Parlin, personal communications, September 26, 2005). Next, contact was made with the local sales representative for Priority Dispatch. He provided a list of departments utilizing their system for fire and/or EMS dispatching. Among the users for both fire and EMS dispatching was Queen Anne County, MD a neighboring department. On September 26, 2005, the author visited Chief Robbie Blackiston who oversees the Queen Anne County Dispatch Center located in Central Maryland who gladly demonstrated the functions of their program. The major limitation in this step was the restriction to Priority Dispatch Users. However, this was knowingly done as information from Allen (1994) indicated Priority Dispatch was the preferred vendor in this field. There are other companies that offer programs similar to Priority Dispatch including one from the Association of Public Communications Officers (APCO), as well as Powerphone. Field visits to those using the Priority Dispatch System were limited to those within a reasonable driving distance. This procedure helped address several questions including #2 - within the call types to which the Anne Arundel County Fire Department responds, what issues should be addressed when classifying certain calls for a split or non-emergency response?, #3 - what are the appropriate steps for implementing a non-emergency response policy that addresses the

issues identified?, and #4 - what monitoring, feedback, and control mechanisms are required to measure the effectiveness of such a policy and maintain it for the future.

The fifth step was to solicit input from citizens of Anne Arundel County regarding a non-emergency response policy. This was addressed through the use of a telephone survey as illustrated in Appendix B. Its purpose was to gain a sense the public's perception of a non-emergency response policy. The procedure began by establishing a list of all of the communities with zip codes located within Anne Arundel County. A total of twenty-nine exist. Next, the phone book was utilized to randomly locate individuals who lived in each of those communities. While efforts to do this began during the day hours, it was soon learned that it must be done during the late afternoon or evening as many people were not home. Assistance from the departmental clerical staff and light duty personnel eventually became necessary to complete the survey. Even under those efforts, contact was not possible from two communities. This procedure helped address question #2 - within the call types to which the Anne Arundel County Fire Department responds, what issues should be addressed when classifying certain calls for a split or non-emergency response? This procedure was limited to a single person in each zip code within Anne Arundel County. The population of the county is over 500,000, yet the survey made contact with only 27 residents.

The sixth step was to analyze response data from the Anne Arundel County Fire Department in an effort to determine what call types might be candidates for non-emergency responses. This process began by contacting the department's computer aided dispatch system's liaison to obtain data on fire responses over the last 12 months. The data was converted and provided in an Microsoft Excel Spreadsheet format so statistical analysis could be completed. For each fire call, the following data was provided: (a) nature code; (b) number of units

dispatched; (c) number of units arriving on location; (d) total time on scene; (e) situation found. Once in an Excel spreadsheet, the calls were sorted by nature code, and then by the situation found. The percentage of units not arriving on the scene was calculated, the types of situation codes that indicated a non-emergency were selected and totaled; and the average time on the scene was calculated. Next, the data was organized with regard to frequency and severity. In designing a risk management plan, the National Fire Protection Association's Standard 1250, Recommended Practice in Emergency Service Organizational Risk Management (2000) relates the importance to consider the frequency of a hazard and its potential severity. To categorize the response data in this manner, the following procedure was followed. With regard to severity, the number of non-emergency situation found codes were listed, the time on the scene was listed, as well as the percentage of units not arriving on location. The total number of calls represented the frequency. As an example, the author thought that if a large percentage of an individual nature code had situation codes that indicated a non-emergency existed, the on-scene time was minimal, and a large percentage of the units were canceled prior to arrival, this may suggest a non-emergency or split response would be appropriate. After all data was collected and analyzed, it was presented to the Anne Arundel County Fire Department's Occupational Health/Safety workgroup. They used this data as a major tool in selecting calls that would be good candidates for a non-emergency response. Next, it was sent to the senior staff and Volunteer Chief's Council who had an opportunity for input and suggestions. This procedure helped address question #2 - within the call types to which the Anne Arundel County Fire Department responds, what issues should be addressed when classifying certain calls for a split or non-emergency response?, and question #4 - what monitoring, feedback, and control mechanisms are required to measure the effectiveness of such a policy and maintain it for the future. While this procedure

seemed fairly comprehensive, it only included data from the prior 12 months. A more extensive search of more data may have yielded slightly different results.

The seventh and final step was to analyze emergency and non-emergency response times. This began with a request to the department's computer aided dispatch system's liaison. Travel times were compared for several types of calls over a 12 month period. First, the travel times to structure fires and cardiac arrests were obtained. These two types of calls were selected because both required an emergency response per current departmental policy. Next, travel times to fire and EMS service calls were summarized. These two types of calls were selected because both required a non-emergency response per current departmental policy. In all cases, the times were collected through the integration of Status Message Encoders mounted within vehicles. Under this system, when units respond, personnel activate a responding button on their radio and a different button is activated when they arrive on location. The data is automatically entered into the Computer Aided Dispatch System. In addition to this technique, a more detailed procedure was established where response and travel times were measured with a stop watch. Three different medical units were selected to participate. One in an urban area where response times are normally short, another in a suburban area where there is a mixture of responses, and a third in a more rural area of the county. A response time survey form was developed and utilized as illustrated in Appendix C. During this procedure, drivers on the three medical units utilized a stop watch to measure their actual response time to the scene and to the hospital. They were asked to begin the time when they placed the vehicle in drive and stop when they placed it in park. Among the information collected was the time of day, day of week, starting point, specific response route, visibility, traffic conditions, and road conditions. After the data was collected, fire departmental personnel who were assigned to "light duty", timed the same route under non-

emergency (routine) driving conditions. Every effort was made to time the routine travel on the same day of the week and time of day. This procedure helped address question #2 - within the call types to which the Anne Arundel County Fire Department responds, what issues should be addressed when classifying certain calls for a split or non-emergency response? This step was limited to 49 responses, a relatively small number, given the total number of annual responses is 73,100. In addition, while it was the original intention to have the non-emergency travel time done within extremely close proximity of the emergency response time, logistical issues as well as personnel availability sometimes made this difficult.

## Results

The first research question asked why should the Anne Arundel County Fire Department consider a non-emergency response to selected call types? The results of the literature review discussed earlier provided the largest amount of information to address this question. According to the National Fire Protection Association (2005), more firefighters were killed during 2003 and 2004 while responding to or returning from emergencies, than any other type of duty. In their 2003 annual summary of Traffic Safety Facts, The National Highway Traffic Safety Administration (2004) reported vehicle collisions claimed the lives of 53 civilian and fire service members. Of those, 37 (70%) fatalities occurred during an emergency response. In their 2002 report, there were only 34 civilian and fire service fatalities, 18 (53%) of which occurred during an emergency response. In May 2004, during the Firefighter Life Safety Summit, sponsored by the National Fallen Firefighters Foundation (2004), 16 initiatives were established to help reduce the number of firefighter deaths by 25% within five years and 50% within 10 years. One of the initiatives recommended a national protocol for emergency response, part of which would specifically determine when an emergency response is and is not appropriate. Goldfedder (2005)

reported on several events that occurred within the last several months where civilians and firefighters were killed in vehicle collisions during emergency responses. In some of the instances, it is possible that a non-emergency response may have been more appropriate. Clawson (1991) discussed one of the most well-known incidents that occurred in 1989 in Bloomington, IL when Sharon Frieburg was permanently disabled when an ambulance struck her vehicle while transporting a patient with a sprained ankle while responding with lights and siren. The city was required to pay $5 million in a cash settlement. There was significant information to suggest that the risk of a vehicle collision is much greater while operating with lights and siren. Wilbur (1997) has studied collision statistics and suggests that an emergency vehicle with lights and siren has a three times greater chance of being involved in a collision as opposed to a non-emergency vehicle, and the risk of being injured or killed is 10 times greater. Wolfburg (1996) reported that an ambulance involved in a fatal crash is twice as likely to have been responding with lights and siren. Additional literature suggests that an emergency response is not necessary to meet the demands of the incident. Snooks, et al (2002) reported that 40% of ambulance responses in the United Kingdom do not require lights and siren. At least two departments have experienced a reduction in collisions after implementing a non-emergency response policy. Clawson and Dernocoer (2004) reported a decrease of 78% in emergency medical vehicle collisions in Salt Lake City, UT and Schaper (1997) reported that the St. Louis Fire Department, MO reduced their collisions by 35%. Schaper (1998) also reported an unexpected benefit of reducing their dumpster fires by nearly 50%.

In addition to the literature review, one procedure used to help address this research question was a survey sent to various departments across the nation. Of the 50 surveys distributed, 17 (34%) were returned. A blank copy of the survey appears in Appendix A and a

summary of the results are shown in Appendix D. The results indicated that 65% of the respondents had a departmental policy that prohibits an emergency response or requires a split (emergency/non-emergency) response on certain types of calls. When asked what areas were addressed, 64% of the policies addressed both fire and medical responses, 18% of the policies addressed only fire responses while 18% addressed only medical responses. All of the respondents indicated that the reason for implementing such a policy was to reduce the risk of vehicle collisions. This was followed by: (a) wear/tear on apparatus (27%); (b) excessive busy times (18%); (c) fuel use (18%); (d) false alarm reductions (9%); and (e) increased seasonal populations (9%).

The last procedure used to address this question was local research. Over the last 35 years, the Anne Arundel County Fire Department has experienced vehicle collisions during emergency responses that have resulted in one firefighter and seven civilian fatalities. Ms. Donna Goins, Insurance Services Manager for Anne Arundel County, who began collecting records on vehicle collisions in 1977, provided information on the fatalities and reported that the fire department has been involved in 3,875 collisions. Over the last 3 years, an average of 45% of the collisions have occurred during an emergency response. (D. Goins, personal communications, September 22, 2005).

The second research question asked within the call types to which the Anne Arundel County Fire Department responds, what issues should be addressed when classifying certain calls for a split or non-emergency response? One procedure used to help address this research question was a survey sent to various fire departments across the nation (Appendix D). One of the questions asked respondents to identify the issues that were considered when implementing their non-emergency response policy. A total of 31 concerns relating to issues were provided.

The results indicated that 82% addressed an issue relating to response time and how the difference in travel time between an emergency response and a non-emergency response might impact their delivery of service. This was followed by: (a) legal concerns (64%); (b) citizen concerns (27%); (c) dispatcher training (27%); (d) insurance services office (27%); (e) local government officials (18%); (f) medical director approval (18%); (g) mutual aid (9%); and (h) other medical services (9%). When asked if there was a single issue that was more difficult than any other, 55% responded "yes." When asked what this concern was, they responded: (a) getting the firefighter to slow down; (b) Insurance Services Office (ISO); (c) the legal duty to respond; and (d) the unknown. When asked if they have any other suggestions for a department who is considering implementing a non-emergency response policy, there were only two responses. One was to make sure you explore all options, and secondly, continue to ask yourself if the outcome will result in a better level of service. Their concerns about Insurance Services office prompted additional research in this area. On September 27, 2005, the author spoke with Mr. Fred Brower of the Insurance Services Office (ISO). The purpose of the call was to clarify whether ISO had any requirements that would mandate an emergency response to any call types. Mr. Brower advised that the ISO is only concerned with a unit proceeding to an incident. Policies regarding the emergency or non-emergency response of that unit is left to the discretion of local authorities.

A field visit to the Communications Center in Queen Anne County, MD and an interview with Chief Robbie Blackiston revealed additional issues. They utilize the Emergency Medical Dispatch and Emergency Fire Dispatch Protocols by Priority Dispatch Corporation and are very pleased with their systems. However, he emphasized the importance of involving their firefighters. He included them to help select non-emergency call-types and believes that was

instrumental in the success of their system. He also related the issue of cost when purchasing a system from Priority Dispatch Corporation. His organization purchased their system for $13,000 thru a grant which included all supplies, materials and training (R. Blackiston personal communications, September 26, 2005). Related to this was the issue of other dispatch protocol systems. Allen (1994), who compared each system, prefers Medical Priority System by Priority Dispatch Corporation. He believes that system provides the best set of protocols and is backed up with 10 years of experience and has a director of national stature. Additional research did not reveal any additional information regarding preference for a given system. Contact with Priority Dispatch Corporation did reveal that they have approximately 2,500 agencies that use their system (A. Hinckley, personal communications, July 15, 2005).

Another procedure used to help determine issues related to non-emergency responses was the use of a citizen survey. A blank copy of the survey appears in Appendix B and detailed results are shown in Appendix E. A telephone survey was conducted with one citizen within every zip-code represented within Anne Arundel County. The first question asked was as follows "Some fire departments are providing their dispatchers with specialized medical training to screen 911 calls more thoroughly. As a result, ambulances sometimes respond to an incident without red lights and siren. This decreases the risk of vehicle collisions and enhances the safety to everyone on the highway. Would you be opposed to such a policy?" The results indicated that 85% would not be opposed to such a policy. Next, they were asked "Upon arrival and evaluation by our medical personnel, they may decide it is in your best interest to proceed to the hospital without red lights and siren. Would you be opposed to this?" Again, 85% responded that they would not be opposed to this. Lastly, they were asked "Certain fire calls could receive the same non-emergency response such as isolated dumpster fires, reports of an outside odor.

Would you be opposed to selected fire responses being handled without lights and siren?" This time 96% reported that they would not be opposed.

Next, the issue of response time and how it would be impacted by a non-emergency response was researched. This was completed by using two processes, both of which used data from the Anne Arundel County Fire Department. First, the travel time for structure fires and cardiac arrest calls over the last 12 months was compared to the travel time for fire service calls and medical service calls. These calls were selected because the departmental response to structure fires and cardiac arrest calls is under emergency conditions and the response to fire service calls and medical service calls is under non-emergency conditions. Within the 12 month period, there were 10,701 structure fires and cardiac arrest responses and 2,466 fire service calls and medical service calls. Research indicated that the travel time for the structure fires and cardiac arrest responses averaged 5 minutes and 54 seconds. The travel time to fire and medical service calls averaged 5 minutes and 35 seconds. The median travel time for the emergency responses was 4 minutes and 54 seconds. The median travel time for the non-emergency responses was 4 minutes and 51 seconds.

The second method to analyze the issue of response time included the manual collection of data from three different medical units. Each medical unit was chosen due to the expected length of their response times. One was located in an urban area, another was in a suburban area, and the last was located in a rural area. A detailed summary of data for all units appears in Appendix F, while a data for each individual unit is shown in Appendix G. A total of 49 calls were measured. There were 17 in the urban area, 18 in the suburban area, and 14 in the rural area. Travel time to the emergency and to the hospital were measured separately. In both cases the driver used a stop watch to measure the time. The time began when the driver put the

transmission in drive and stopped when they put it in park. The data from all three units were combined and the results indicated the median distance to the scene was 2.8 miles, and 6.0 miles to the hospital. The median difference in travel time between an emergency and non-emergency response was 2 minutes and 11 seconds to the scene and 2 minutes and 21 seconds to the hospital. The largest difference between the individual units was noted with the one located in the rural area. There, the median distance to the hospital was 19.0 miles and the difference in travel time between an emergency and non-emergency response was 10 minutes and 11 seconds.

Next, an analysis was conducted on each call type dispatched by the Anne Arundel County Fire Department to determine relevant issues. A total of 12,030 calls were included over the last 12 month period. For each call type, the following data elements were collected: (a) situation found; (b) number of units dispatched; (c) number of units arriving on scene; and (d) total time on scene. National Fire Protection Association's Standard 1250 Recommended Practice in Emergency Service Organization Risk Management (2000) speaks to the need to consider the frequency and severity of the risk when designing risk reduction strategies. These data elements helped address the issue of severity and the number of responses for each call type related to the frequency. A complete listing of the data appears in Appendix H, and a summary of a worksheet used for alarm soundings is shown in Appendix I. The results for alarm soundings indicated that based upon the situation found code, an emergency did not exist 78% of the time; the total on-scene time was 11 minutes and 26 seconds; and an average of 38% of the apparatus dispatched was cancelled before its arrival. Examples of other call types where the situation found code indicated a non-emergency existed more than 70% of the time included: (a) high-life hazard detector soundings; (b) including water flow alarms; (c) smoke detector sounding in residences; and (d) water flow alarms. Calls where the average time on the scene

was less than 15 minutes included: (a) controlled burnings; (b) smoke detector soundings; (c) brush near structures; (d) alarm soundings; (e) odor smoke/gas in area; (f) dumpster fires (standing alone); (g) high-life hazard detectors; (h) appliance fires; and (i) miscellaneous fires. Calls where nearly 50% of the units were cancelled prior to their arrival include: (a) assist with suspicious packages; (b) possible contaminated articles; (c) assist with evacuations; (d) high-life hazard detector soundings; (e) suspicious letters not contaminated; (f) structures/barns/garages; and (g) natural gas lines struck. Call types where the number of responses exceeded 200 included: (a) alarm soundings; (b) service calls; (c) electrical wire downs; (d) brush; (e) vehicles; (f) smoke detectors; (g) dwelling fires; (h) carbon monoxide detectors; (i) odor of smoke inside; (j) helicopter landings; (k) miscellaneous; (l) odor of smoke/gas in area; (m) odor of gas inside; (n) hydrocarbon spills (<100 gal); (o) controlled burnings; (p) water flow alarms; and (q) appliance fires. Those where there was not a situation found code collected on more than 25% of the calls included: (a) helicopter landings; (b) suspicious letters (not contaminated); (c) dumpster fires (attached to building); (d) unknown materials; (e) electrical wires (outside); (f) service calls; and (g) possible contaminated articles. The analysis of this data was presented to the Anne Arundel County Fire Department's Occupational Health/Safety Workgroup, the Volunteer Chiefs' Council and the senior staff of the Fire Department. These groups categorized each fire call type as a "Hot", "Warm" or "Cold Response". "Hot" responses were defined as those where all units would respond under emergency conditions. "Warm" responses would be a split response, where the first due unit responds under emergency conditions and all other units respond under non-emergency conditions. "Cold" responses require everyone to respond under non-emergency conditions. Of 38 fire call types, 17 were recommended to be "Hot" responses, 6 were recommended to be "Warm" responses, 12 were recommended to be "Cold" responses, and

3 were recommended to be left to the discretion of the dispatch supervisor. A summary of these recommendations appear in Appendix J.

The fire department survey asked how other departments selected non-emergency call-types (Appendix D). The greatest number of respondents (82%) said they use common knowledge to select calls such as alarms and dumpster fires. This was followed by the use of a commercially available Medical Priority Dispatch and common knowledge of the results of alarm soundings and dumpster fires (64%); an in-house protocol system for medical calls (36%); utilize a commercially available Fire Priority Dispatch program (18%); review of patient care needs (9%) and ISO requirements (9%). In an additional section of the survey, the respondents gave examples of fire calls that they have decided warrant a non-emergency or split (emergency/non-emergency response). Among the respondents, automatic alarms was reported four times. A split (emergency/non-emergency response) to alarms was reported two times. The following call types were reported one time: (a) residential alarms; (b) vehicle accident – no injury/fire; (c) reduced responses during severe weather; (d) leaves/debris; (e) check detectors; (f) small fuel spills; (g) carbon monoxide alarms; (h) continuous false alarms; (i) contractors working on alarm system; (j) service calls; (k) coverage to another station; (l) 2nd due truck to commercial structures; (m) 2nd due truck to multi-family occupancies; and (n) wires down. Respondents also provided examples of medical calls that they have decided warrant a non-emergency response. They included: (a) check welfare, (b) units requiring staging, (c) when police is on scene, (d) non-threatening calls to hospital, (e) facility to facility, (f) pick up someone who has fallen, (g) man down, (h) “A”calls in EMD, (i) “A-C” calls in EMD, (j) “regular customers”, and (k) EMS screening (non response/no code), life assists.

The third research question asked what are the appropriate steps for implementing a non-emergency response policy that addresses the issues identified? Research in this area was limited to a survey of departments in the United States, a visit to a neighboring department that already has a non-emergency response policy and additional literature review. The fire department survey identified 31 issues to be addressed during the implementation of a non-emergency response policy. These were discussed when explaining the results of question #2. A review of literature revealed a report by the National Association of EMS Physicians and the National Association of State EMS Directors (1994) entitled "Use of Warning Lights and Sirens in Emergency Response and Patient Transport." It identified several issues and guidelines to be considered when implementing a non-emergency response policy.

The last research question asked what monitoring, feedback, and control mechanisms are required to measure the effectiveness of such a policy and maintain it for the future?
The procedure used to help address this research question was a questionnaire sent to various departments across the nation and a visit to a neighboring department already having a non-emergency responses policy. The results of the fire department survey which appear in Appendix D indicate that only 40% of the departments with non-emergency response policy have a method of monitoring, feedback and control mechanisms to measure the effectiveness of their program. The responses included: (a) monitor responses, (b) use quality control reviews, feedback from personnel and (c) analyze response data. Chief Robbie Blackiston, from the Queen Anne County, MD dispatch center, said that they utilize a quality control system that was purchased with their emergency medical and fire department dispatch protocols from Priority Dispatch Corporation. This, in conjunction with other data including vehicle collisions and

response data helps them measure the effectiveness of their program (R. Blackiston, personal communications, September 28, 2005).

## Discussion

The literature review contained information including current events from several months ago to articles written more than 20 years ago. Unfortunately, while many supported the need for a non-emergency response policy, few provided information with regard to the issues that should be addressed to help a department establish a reasonable and responsible policy. As reported by Clawson and Dernocoeur (2004), the idea of prioritized emergency medical dispatching systems was discussed 29 years ago. And, as recently as March 10th and 11th, 2004, the National Fallen Firefighters Foundation hosted a National Firefighter Life Safety Summit that included an initiative that recommended the development of response policies that establish when an emergency response is, and is not appropriate. Unfortunately, the fire department survey conducted during this research showed that 35% of the departments surveyed respond under emergency conditions to every call. Cady, and Lindberg (2001) reported on a 200 city survey conducted by the Journal of Emergency Medical Services (JEMS) that found 32% of the 200 largest cities in the United States still respond to all calls with lights and siren. This may relate to another initiative identified by attendees at the National Firefighters Life Safety Summit which is to define and advocate the need for a cultural change within the fire service relating to safety. Albert Einstein's quote "We can't solve problems by using the same kind of thinking we used when we created them" (Stanford University) seems to describe the need to think about new, non-traditional methods to reduce firefighter deaths and injuries. The implementation of a well researched non-emergency response plan appears to have the potential to be a tremendous risk reduction strategy for any emergency service organization. Clawson and Denocoeur (2004)

indicate that Salt Lake City, Utah experienced a 78% decrease after full implementation of their program. Schaper (1997) reported that the St. Louis Fire Department experienced a 35% reduction in vehicle collisions. The fire department survey implemented during this research found only 18% believe their policy may not be effective (Appendix D). Clearly, research into the frequency of civilian and firefighter deaths in vehicle collisions on a national basis and within Anne Arundel County as well as the successes enjoyed by many departments suggests a non-emergency response policy may be valid risk reduction strategy.

One of the most prevalent issues found within the literature review was the impact of response time during a non-emergency responses. Hunt, et al. (1995) studied responses in Greenville, North Carolina and found lights and siren resulted in a 43.5 seconds mean time savings. Ho and Lindqist (2000) studied response times in Becker County, Minnesota and found lights and siren resulted in an average time savings of 3.63 minutes. Brown, Whitney, Hunt, Addario and Hogue (2000) conducted a study in Syracuse, New York and found lights and siren reduced ambulance response times by an average of 1 minute and 46 seconds. Patterson (2003) makes reference to another study in St Petersburg, FL that studied nearly 700 consecutive calls. The average difference between a hot and cold response was 33 seconds. An analysis of responses in Anne Arundel County Fire Department over a 12 month period indicated an extremely small difference in travel time between an emergency and a non-emergency response. Research indicated that the median travel time to 10,701 emergency calls for structure fires and cardiac calls was 4 minutes and 54 seconds. Of 2,466 non-emergency fire service calls and non-emergency medical service calls, the median travel time was 4 minutes and 51 seconds. Ironically, the travel time was 3 seconds less than a non-emergency response. It should be noted that these times are collected from status message encoders that are mounted on the department

radios. They are activated when buttons are depressed to indicate a unit is responding and has arrived on location. Operators sometimes forget to depress the on-scene button, which one would think would have the effect of increasing travel time. The research also included an analysis of response and travel times to 49 emergency medical calls. Three units were selected to represent urban, suburban and rural responses. When combining the data for all three units, the results indicated the median distance to the scene was 2.8 miles, and 6.0 miles to the hospital. The median difference in travel time between an emergency and non-emergency response was 2 minutes and 11 seconds to the scene and 2 minutes and 21 seconds to the hospital. The largest difference between the individual units was noted with the one located in the rural area. There, the median distance to the hospital was 19.0 miles and the difference in travel time between an emergency and non-emergency response was 10 minutes and 11 seconds. These results show a greater difference than was shown in other studies. Ho and Lindqist (2000) reported the largest difference of 3.63 minutes in their study. Like Anne Arundel County, their study was done in a rural area where the travel distances ranged from .2 miles to 8.0 miles. The rural unit in this research ranged from 2.1 miles to 12.1. Ho and Lindqist (2000) concluded that longer distances equate to a larger difference between an emergency response and a non-emergency response. The results of this research seem to confirm their findings. Regardless of the time difference a question remains as to whether it is clinically significant. Previous research is reluctant to make conclusions. It would seem that this determination should be done on a local level by a medical director approved by the authority having jurisdiction. When considering travel time and its significance, this author believes the degree to which response times are already within a generally accepted standard should be considered. For instance, if within a given station's response area, there are areas already outside of an accepted response time, special care should

be given to dispatching a non-emergency response to those areas. Conversely, if an area is within accepted responses times, more flexibility may be warranted and choosing a non-emergency response. To assist with generally accepted standards, it would be helpful if response time data was collected on a national basis. The availability of that data would have been helpful to this author and perhaps others contemplating a non-emergency response policy.

Another issue that warrants discussion relates to a patient's condition and whether an emergency response from the scene to the hospital is required. Snooks, et al. (2002) reported that 40% of ambulance responses in the United Kingdom do not require lights and siren. According to Quinlavin (1993), only 20% of emergency ambulance requests result in an actual medical emergency. While one could argue over the definition of an actual medical emergency, this author's research indicated that caregivers only transported patients to the hospital 16 times (32%) out of the 49 emergency medical calls studied within Anne Arundel County (Appendix F). Like response data, the collection of similar data on a national basis would be extremely helpful to departments contemplating a non-emergency response policy.

The issue of citizen input provided interesting results. The results of the fire department survey indicated that only 27% considered citizen input an issue (Appendix D). The author thought a significant number of citizens would be opposed to a non-emergency response policy, however, phone surveys to citizens throughout Anne Arundel County indicated that 85% said would not be opposed to a non-emergency response policy for medical calls. 96% were not opposed to one for fire calls. Regardless of the failure of other departments to consider this and the apparent support for a policy by the citizens of Anne Arundel County, this author believes the citizens should be considered. At a minimum, the results of the survey may help tailor the degree of public education required.

Another issue related to the selection of fire calls that warranted a non-emergency response, and unfortunately, there was little information on this topic. Schaper (1997) reported on 19 different situations where the St Louis Fire Department chose to respond non-emergency. Examples provided were automatic alarms, wires down, calls for manpower, lock outs, manual pull stations, assisting police, etc. Research by Kemp (1997) provided a similar list of calls based upon a survey he had done to 100 departments across the country. The fire department questionnaire included in this author's research provided similar results (Appendix D). 82% of respondents said they selected calls based upon common knowledge of the outcome of calls (alarm soundings, etc.). This author believes a more detailed and objective analysis of data as was done during this research is necessary to help select calls that may warrant a non-emergency or split response. The research was based upon sound risk management principles as outlined in the National Fire Protection Association's Standard 1250 Recommended Practice in Emergency Service Organization Risk Management (2000). This resource indicated that a risk should be evaluated based upon its potential frequency and severity. For each call-taker nature code, this research studied the number of instances (frequencies) when the situation found was a non-emergency. It also studied two issues that related to the severity of the incident including the number of units dispatched, verses the number of units the arrived on the scene, and the time on the scene. It was interesting to review the percentage of units canceled prior to arrival. Not only could this provide information to support a non-emergency or split response, it may also support the need to evaluate how many units are being dispatched in the first place. Calls can also be selected by using techniques similar to those found in The National Academy EFD Protocol, Fire priority Dispatch System and the EMD, Medical Priority Dispatch System. In these systems, questions to callers help identify issues that serve as cues that warrant a given response. For

instance, medical questions help determine the degree that a person is alert. Someone who is alert might warrant one type of response, while one who is not alert would warrant another. The results of the fire department survey indicated that 64% of respondents in the author's fire department survey use a commercially available medical priority dispatch system, while 36% use an in-house protocol system for medical and fire calls (Appendix D). This author believes the combination of a study similar to that conducted for Anne Arundel County as well as a legally sound commercially available dispatch system may be the best approach to help identify calls for a non-emergency response.

It was interesting to learn from the fire department survey that respondents identified the need to explain the policy to firefighters and getting them to slow down as one of their greatest challenges. It is interesting because this research tended to become focused on the external forces including response times, citizen input, legal concerns, etc. As discussed in Leadership on the Line, Heifetz and Linsky (2002) it is critically important to distinguish between technical problems and adaptive challenges. Clearly, a non-emergency response policy is an adaptive challenge and represents a major change in the mind-set of the firefighter. A department considering a non-emergency policy must recognize this and manage the concept of change appropriately.

Another issue described by a number of respondents in the fire department questionnaire is the legal duty to respond and the Insurance Services Office. It was interesting to learn from a conversation with the Insurance Services Office that they do not have a policy that requires an emergency response to selected call types. In fact, Mr. Brower (personal communications, September 27, 2005) indicates that they take no position with regard go emergency or non-emergency response. They believe that should be determined by the local jurisdiction.

Information regarding the need for funding and funding resources required for the implementation of a non-emergency policy were surprisingly absent within current research. As was learned during a field visit one system cost $13,000.00 which included all materials and training. Without assistance, this is may be out of the range for many departments. Clearly additional research is required regarding the availability of funding sources such as the FireAct and other applicable grant programs.

It was disappointing to learn that of the departments that have some form of a non-emergency response program, only 40% have a mechanism to monitor its effectiveness and keep it current.

The implications of the results of this research clearly seem to indicate the need for the Anne Arundel County Fire Department to consider a non-emergency response policy that addresses all issues identified including a mechanism to measure the effectiveness of the program to maintain it for the future. The process should be addressed in a logical manner including those that will effectively help the department manage this adaptive challenge. The result should be the achievement of the goal to reducing the risk of injuries and deaths to its citizens and firefighters from vehicle collisions.

## Recommendations

Based upon the findings of this research paper, it is recommended that the Anne Arundel County Fire Department pursue the establishment of a non-emergency response policy with a goal of reducing the risks to its citizens and firefighters during an emergency response. The information provided should provide the administrators of the department with an understanding of the issues related to a non-emergency response policy, an objective method to select calls that warrant a non-emergency response, and the components to monitor the system to measure its

effectiveness and maintain it for the future. History has shown that the Anne Arundel County Fire Department has experienced vehicle collisions resulting in civilian fatalities. While they have implemented other very proactive measures to reduce this risk, they recognize that the establishment of a non-emergency response policy will further reduce the inherent risks to their citizens and firefighters during an emergency response. The following specific recommendations are offered.

In May 2004, the Firefighter Life Safety Summit (2004), sponsored by the National Fallen Firefighters Foundation identified 16 initiatives to reduce the number of firefighter deaths by 25% within five years and 50% within 10 years. One of the initiatives recommended was a national protocol for emergency response, part of which would specifically determine when an emergency response is and is not necessary. These efforts should be closely monitored so that the Anne Arundel County Fire Department can remain in the forefront of this national campaign. If feasible, representation on national workgroups should be sought to help champion this important effort.

Respondents to the fire department questionnaire indicated that their greatest challenge while implementing their non-emergency response policy was the firefighter. Chief Robbie Robinson echoed this concern (personal conversation, September 28, 2005). Wilbur (1997) reported on one department where a member quit because they adopted a non-emergency response policy. It is clear to this author that a non-emergency response presents not only technical problems, but more importantly, adaptive challenges. Heifetz and Linsky (2002) provide significant insight into the methods to help manage this type of change. A departmental administrator with this knowledge is essential to oversee the entire process of implementing this new procedure.

"Hot" (emergency), "Warm" (split responses), and "Cold" (non-emergency responses) as recommended by the Anne Arundel County Fire Department's Occupational Health and Safety Workgroup, Volunteer Chiefs Council and Senior Staff should be an integral part of the new departmental policy. The research included in this project which related to the frequency and severity of the risk involved in responding to each call-type helped form the basis for their decisions.

Research indicated that the Emergency Medical Dispatch and the Emergency Fire Dispatch programs are the predominant programs today to help screen calls, provide pre-arrival instructions and help provide the basis for emergency or non-emergency responses. Allen (1994) compared the various systems on the market and concluded that these offer the best options. The Anne Arundel County Fire Department should purchase this or similar programs which should include training and a quality assurance program. All options including the use of grants should be explored to fund the purchase of these items.

The fire department surveys as well as the National Association of EMS Physicians and the National Association of State EMS (1994) recommended that EMS directors should participate directly in the development of policies. Dr. Myers, Medical Director for the Anne Arundel County Fire Department should fulfill this role.

Research regarding the difference in travel time between an emergency and non-emergency response seemed minimal, yet it varied among several past research studies. Hunt, et al. (1995) studied responses in Greenville, North Carolina and found lights and siren resulted in a 43.5 seconds mean time savings. Ho and Lindqist (2000) studied response times in Becker County, Minnesota and found lights and siren resulted in an average time savings of 3.63 minutes. Brown, Whitney, Hunt, Addario and Hogue (2000) conducted a study in Syracuse,

New York and found lights and siren reduced ambulance response times by an average of 1 minute and 46 seconds. Patterson (2003) makes reference to another study in St Petersburg, FL that studied nearly 700 consecutive calls. The average difference between a hot and cold response was 33 seconds. Studies within Anne Arundel County found the median difference in travel time to the scene was 2 minutes and 11 seconds and 2 minutes and 21 seconds to the hospital. However, the median difference in travel time to the hospital for the rural unit was 10 minutes and 11 seconds. The department's medical director should consider this research when selecting call types where time is clinically significant.

Based upon recommendations of the Medical Director, the current policy of allowing on-scene care givers to determine whether an emergency transport to the hospital is required should continue. However, the medical director should establish a protocol that defines when this should occur. This is based upon a study by Silvestri (2002) that found paramedics could not reliably predict which patients do and do not require emergency department care.

The results of the citizen survey indicate a clear majority of citizens in Anne Arundel County would not be opposed to a non-emergency response policy. The fire department survey as shown in Appendix E indicated that only 27% felt it was an issue. Regardless, citizen surveys and awareness programs should continue. At a minimum, they will help monitor the degree of effort that is required to adequately keep the public informed of the operation of their fire department. A follow-up questionnaire may be warranted after the program has been in place for a given time period.

Other issues and concerns as discovered in the fire department survey should be addressed including the involvement of the local governmental law office, local political officials

and mutual aid companies. And, while not required, it may be best to provide a copy of the policy to the Insurance Services Office.

The Change Management unit within the National Fire Academy's Executive Development class emphasizes the importance of monitoring the effectiveness of a change. Recommended methods to complete this as well as maintain it for the future include: (a) "black" boxes as recommended by Clawson (2002) to help monitor emergency responses; (b) use of the quality assurance module provided by the Priority Dispatch Corporation; (c) annual review of fire response data completed in a similar method as was done for this research project; (d) as laws will allow, monitor the outcome of patients who are transported under non-emergency conditions; (e) monitor data on the frequency and severity of vehicle collisions and whether they occur during emergency or non-emergency responses; (f) monitor data regarding the number of emergency and non-emergency responses to the scene and to the hospital; (g) monitor maintenance cost of vehicles; (h) monitor fuel use; (i) monitor false alarm reduction; (j) monitor dumpster fire frequency and other nuisance fires. Many of these recommendations were recommended by respondents of the fire department survey or were reported as benefits by the St Louis, MI department following the implementation of their non-emergency response policy. (Schafer 1997).

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Appendix A
Blank Fire Department Survey

# RESPONSE POLICY SURVEY

---

DEPARTMENT NAME: _____

TYPE: □ Career □ Combination □ Volunteer

POPULATION: _____ # STATIONS: _____ # PERSONNEL: _____

RESPONSE AREA (*check all that apply*): □ Urban □ Suburban □ Rural

SERVICES PROVIDED (*check all that apply*): □ Fire □ EMS □ Transport EMS

---

1) Do you have policies which prohibit an emergency response or require a split (emergency/non-emergency) response on certain types of incidents:
   □ Yes
   □ No

| If no, please go the end of the survey. Thank you very much! |
|---|

2) If yes, which general types of services do you prohibit an emergency response or require a split (emergency/non-emergency) response?
   □ Fire
   □ EMS
   □ Both

3) What were the main factors driving the decision to implement your response policy? (*check all that apply*)
   □ Reduce risk of collisions during emergency responses?
   □ Excessive busy-times for units (unavailability)?
   □ Wear and tear on apparatus?
   □ Fuel Use?
   □ Other: _____

4) How did you determine what calls warrant a non-emergency or split (emergency/non-emergency) response? (*check all that apply*)
   □ Use of a commercially available Medical Priority Dispatch Program (EMS Calls)
   □ Use of an in-house Medical Protocol (EMS Calls)
   □ Use of a commercially available Fire Priority Dispatch Program (Fire Calls)

□ Use of an in-house Fire Priority Protocol
□ Common Knowledge (Alarms, dumpsters, etc..)
□ Analysis of Response Data
□ Other: _____

5) Please list those calls covered by your policy that receive a non-emergency or split (emergency/non-emergency) response.

| Fire | Medical |
|---|---|
| | |
| | |

6) Please check the effects/issues explored prior to implementing the policy (*check all that apply*):

□ Impact on response time
□ Citizen concerns
□ Local government officials
□ Legal concerns
□ Dispatcher training issues
□ Mutual Aid agreements
□ Insurance Services Office
□ Medical Director Approval
□ Other: _____
□ Other: _____

7) Was there one effect/issue that presented the greatest challenge?
□ Yes □ No If yes, what was it? _____

8) Do you have monitoring, feedback or control mechanisms to measure the effectiveness of your program?
□ Yes □ No

9) If yes, what are they?

_____

_____

10) Have they determined that the program is effective?
□ Yes □ No

11) Do you have any other suggestions/comments for another department considering classifying certain calls for non-emergency responses? (*If yes, please explain*)

_____

_____

NAME: _____

ADDRESS: _____

PHONE: _____

□ Please send me the results of this survey. **THANK YOU VERY MUCH!**

Appendix B
Blank Telephone Survey

# RESPONSE POLICY SURVEY
## Citizen

---

Community: _____

---

Madam/Sir – My name is _____ and I am with the Anne Arundel County Fire Department. We are conducting a citizen survey to help identify new ways to provide a more efficient and safer service to you. Do you have about 60 seconds to take part in this phone survey?

Thank you very much. Here is the first question.

1) Some fire departments are providing their dispatchers with specialized medical training to screen 911 calls more thoroughly. As a result, ambulances sometimes respond to an incident without red lights and siren. This decreases the risk of vehicle collisions and enhances safety to everyone on the highway. Would you be opposed to such a policy?
   - □ Yes
   - □ No

Additional comments by citizen:

---

2) Additionally, upon the arrival and evaluation by our medical personnel, they may decide it is in your best interest to proceed to the hospital without red lights and siren. Would you be opposed to this?
   - □ Yes
   - □ No

Additional comments by citizen:

---

3) Certain fire calls could receive the same non-emergency response such as isolated dumpster fires, reports of an outside odor. Would you be opposed to selected fire responses being handled without lights and sirens?
   - □ Yes
   - □ No

Additional comments by citizen:

---

Madam/Sir, this completes the survey. Your input will be very helpful. Thank you very much for your time.

Appendix C

Blank Response Time Survey Form

| **SECTION 1**: EMERGENCY RESPONSE DATA (*Collected by Responders*) | |
|---|---|
| Date: | |
| Unit #: | |
| Incident #: | |
| Drivers: | To Incident: |
| | To Hospital: |
| Type of Call: | |
| Time of Day: | |
| Day of Week: | |
| Response Route: | Starting Point: |
| | Route (Be specific): |
| | Destination: |
| * Response Time to Scene: | |
| Visibility: | □ Excellent □ Fair □ Poor |
| Traffic Conditions: | □ Light □ Moderate □ Heavy |
| Road Conditions: | □ Dry □ Wet □ Slippery |
| Response Route to Hospital: | Route (Be specific): |
| | Destination: |
| Priority of Transport: | □ Priority 1 □ Priority 2 □ Priority 3 □ Priority 4 |
| Type of Transport: | □ Emergency □ Non Emergency □ No Transport |
| * Response Time to Hospital: | |

| **SECTION 2 -** NON-EMERGENCY RESPONSE DATA (*Collected by Administrative Personnel*) | |
|---|---|
| Time of Day Evaluated: | |
| Day of Week Evaluated: | |
| Distance to Scene: | |
| * Travel Time to Scene: | |
| Visibility: | □ Excellent □ Fair □ Poor |
| Traffic Conditions: | □ Light □ Moderate □ Heavy |
| Road Conditions: | □ Dry □ Wet □ Slippery |
| Distance to Hospital: | |
| * Travel Time to Hospital: | |
| Evaluator's Name: | |

Appendix D
Fire Department Survey Results

# Departments Responding to Survey = 17

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

#1 - Do you have policies that prohibit an emergency response or require a split (emergency/non-emergency) response on certain types of incidents?

Yes = 11 (65% )

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

No = 6 (35%)

| | | | | | |
|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 |

#2 - If yes, which general types of services to you prohibit an emergency response or require a split (emergency/non-emergency) response?

Fire = 2 (18%)

| | |
|---|---|
| 1 | 1 |

EMS = 2 (18%)

| | |
|---|---|
| 1 | 1 |

Both = 7 (64%)

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 |

#3 - What were the main factors driving the decision to implement your response policy? (check all that apply)
Reduce risk of collisions during emergency response

Total = 11 (100%)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Excessive busy-times for units (unavailability)?
Total = 2 (18%)

| | |
|---|---|
| 1 | 1 |

Wear and tear on apparatus?
Total = 3 (27%)

| | | |
|---|---|---|
| 1 | 1 | 1 |

Fuel Use?
Total = 2 (18%)

| | |
|---|---|
| 1 | 1 |

False Alarm Reduction
Total = 1 (9%)

| |
|---|
| 1 |

Christmas time - increased population due to shopping
Total = 1 ( 9%)

| |
|---|
| 1 |

#4 How did you determine what calls warrant a non-emergency or split (emergency/non-emergency) response? (check all that apply)

Use of a commercially available Medical Priority Dispatch Program (EMS calls)
Total = 7 (64%)

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Use of an in-house Medical Protocol (EMS calls)
Total = 4 (36%)

| | | | |
|---|---|---|---|
| 1 | 1 | 1 | 1 |

Use of a commercially available Fire Priority Dispatch Program (Fire calls)
Total = 2 (18%)

| | |
|---|---|
| 1 | 1 |

Use of an in-house Fire Priority Protocol (Fire calls)
Total = 4 (36%)

| | | | |
|---|---|---|---|
| 1 | 1 | 1 | 1 |

Common Knowledge (Alarms, dumpsters, etc.)
Total = 9 (82%)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Analysis of response data
Total = 7 (64%)

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Review of Patient Care Needs
Total = 1 (9%)

| |
|---|
| 1 |

ISO Requirements
Total = 1(9%)

| |
|---|
| 1 |

#5. Please list those calls covered by your policy that receive a non-emergency or split (emergency/non-emergency) response

Fire

| | | | | | | |
|---|---|---|---|---|---|---|
| Automatic Alarms | 1 | 1 | 1 | 1 | 1 | |
| Automatic Alarms (Split) | 1 | 1 | | | | |
| Alarms w/no report of smoke | 1 | | | | | |
| Residential Alarms | 1 | | | | | |
| Vehicle Accident (No Injury/fire) | 1 | | | | | |
| Periods of Severe Weather | 1 | | | | | |
| Leaves burning in the street | 1 | | | | | |
| Checking detector batteries | 1 | | | | | |
| Small fuel spills | 1 | | | | | |
| CO alarms w/out symptoms | 1 | | | | | |
| Continuing false alarms w/no follow-up phone. | 1 | | | | | |
| Contractors working on fire alarm systems | 1 | | | | | |

| | |
|---|---|
| Service calls | 1 |
| Coverage (Station relocation) | 1 |
| Commercial Structure (2nd truck) | 1 |
| Mult-family (2nd truck) | 1 |
| Wires down | 1 |

Medical

| | |
|---|---|
| Check welfare | 1 |
| Any medical requiring staging | 1 |
| When advised, PD on scene | 1 |
| Non-threatening calls to hospital | 1 |
| Facility to facility transports | 1 |
| Pick up someone fallen | 1 |
| Man down calls | 1 |
| Calls dispatched as "A" by EMD | 1 |
| Rescue Truck (2nd out) A-C by EMD | 1 |
| Non-threatening calls (regular customers) | 1 |
| EMS Screening (non-response & no code) | 1 |
| Life Assists | 1 |

#6. Please check the effects/issues explored prior to implementing the policy (check all that apply)

Impact on response time. Total = 9 (82%)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Citizen concerns
Total = 3 (27%)

| | | |
|---|---|---|
| 1 | 1 | 1 |

Local government officials
Total = 2 (18%)

| | |
|---|---|
| 1 | 1 |

Legal concerns
Total = 7 (64%)

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Dispatcher training issues
Total = 3 (27%)

| | | |
|---|---|---|
| 1 | 1 | 1 |

Mutual Aid agreements
Total = 1 (9%)

| |
|---|
| 1 |

Insurance Services Office
Total = 3 (27%)

| | | |
|---|---|---|
| 1 | 1 | 1 |

Medical Director Approval
Total = 2 (18%)

| | |
|---|---|
| 1 | 1 |

Police and County Medical Services
Total = 1 (9%)

| |
|---|
| 1 |

#7. Was there one effect/issue that presented the greatest challenge?

Yes = 6 (55%)

| | | | | | |
|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 |

No = 5 (45%)

| | | | | |
|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 |

If yes, what was it?
Getting firefighters to slow down.
Personnel
Explaining it to firefighters
ISO rating - ambulance availability
The unknown
The legal duty to respond

#8. Do you have a monitoring, feedback or control mechanisms to measure the effectiveness of your program?
Yes =4 (40%)

| | | | |
|---|---|---|---|
| 1 | 1 | 1 | 1 |

No = 6 (60%)

| | | | | | |
|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 |

#9. If yes, what are they?

Currently monitoring responses to see if we can add other types of calls and to gauge effectiveness
Currently no, at the time we changed response patterns we did.
Quality control reviews and checks for incident reports
Personnel feedback, data review
Response data

#10. Have they determined that the program is effective?
Yes = 7 (64%)

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 |

No = 2 (18%)

| | |
|---|---|
| 1 | 1 |

#11. Do you have any other suggestions/comments for another department considering classifying certain calls for non-emergency response? (If yes, please explain)

Just ask if the outcome going to be changed for the better or worse if response is changed. Explore all options

Appendix E
Citizen Survey Results

Question #1 - Some fire departments are providing their dispatchers with specialized medical training to screen 911 calls more thoroughly. As a result, ambulances sometimes respond to an incident without red lights and sirens. This decreases the risk of vehicle collisions and enhances the safety to everyone on the highway. Would you be opposed to such a policy?

Question #2 - Additionally, upon arrival and evaluation by our medical personnel, they may decide it is in your best interest to proceed to the hospital without red lights and sirens. Would you be opposed to this?

Question #3 - Certain fire calls could receive the same non-emergency response such as isolated dumpster fires, reports of an outside odor. Would you be opposed to selected fire responses being handled without lights and siren?

| Community | Question #1 | | Question #1 | | Question #1 | |
|---|---|---|---|---|---|---|
| | Yes | No | Yes | No | Yes | No |
| Arnold | | 1 | | 1 | | 1 |
| Churchton | | 1 | | 1 | | 1 |
| Crofton | 1 | | | 1 | | 1 |
| Crownsville | | 1 | | 1 | | 1 |
| Davidsonville | | 1 | | 1 | | 1 |
| Deale | | 1 | | 1 | | 1 |
| Edgewater | | 1 | | 1 | | 1 |
| Ferndale | | 1 | | 1 | | 1 |
| Friendship | | 1 | 1 | | | 1 |
| Galesville | | 1 | | 1 | | 1 |
| Gambrills | | 1 | | 1 | | 1 |
| Gibson Island | n/a | n/a | n/a | n/a | n/a | n/a |
| Glen Burnie | 1 | | | 1 | | 1 |
| Hanover | | 1 | 1 | | | 1 |
| Harmans | | 1 | | 1 | | 1 |
| Harwood | 1 | | | 1 | | 1 |
| Jessup | n/a | n/a | n/a | n/a | n/a | n/a |
| Linthicum | | 1 | | 1 | | 1 |
| Lothian | | 1 | 1 | | | 1 |
| Mayo | | 1 | | 1 | | 1 |
| Millersville | | 1 | | 1 | | 1 |
| Odenton | | 1 | | 1 | | 1 |
| Pasadena | | 1 | | 1 | | 1 |

| Community | Question #1 | | Question #1 | | Question #1 | |
|---|---|---|---|---|---|---|
| | Yes | No | Yes | No | Yes | No |
| Riva | | 1 | | 1 | | 1 |
| Severn | 1 | | 1 | | 1 | |
| Severna Park | | 1 | | 1 | | 1 |
| Shadyside | | 1 | | 1 | | 1 |
| Tracys Landing | | 1 | | 1 | | 1 |
| West River | | 1 | | 1 | | 1 |
| Total: | 4 | 23 | 4 | 23 | 1 | 26 |
| Percentage | 15% | 85% | 15% | 85% | 4% | 96% |

**Comments Received Question #1**

Provided 100% positive and adequate
training
Sometimes the dispatcher doesn't get the right info and sometimes the caller might delay the info.
If you cut the sirens you can't get there quick enough
There should always be lights and sirens going to a call to determine its
severity.
As long as they are trained really well.
As long as they are really sure and the people calling aren't minimizing the
situation.

**Comments Received Question #2**

As long as I'm not on my death
bed
I oppose this because a call to 911 is a true
emergency.

**Comments Received Question #3**

As long as its contained
If they screen calls
good
If the dispatchers got specialized training
Thank you for calling
I think it's a worthwhile thing to look into. Calls should be analyzed. It could save someone's life.
The major exception is the odor of gas - always use lights and
siren.
Citizen expressed there is a need for public education about 911 - when to call, traffic rules for the
public and emergency vehicles and overall awareness of fire department.
For these situations, there needs to be more public awareness and
education
You guys on the fire engines and ambulances know what's best.

# Appendix F
## Medical Unit Response Time Survey (All Units)

| To Incident Scene | | | | To Hospital | | | |
|---|---|---|---|---|---|---|---|
| Response Time | Travel Time | Difference | Distance | Response Time | Travel Time | Difference | Distance |
| 0:06:18 | 0:09:20 | 0:03:02 | 6.9 | 0:12:21 | 0:13:46 | 0:01:25 | 7.7 |
| 0:05:50 | 0:07:35 | 0:01:45 | 2.5 | 0:12:38 | 0:14:08 | 0:01:30 | 6.2 |
| 0:05:26 | 0:05:26 | 0:00:00 | 2.8 | 0:21:03 | 0:32:42 | 0:11:39 | 16.8 |
| 0:13:08 | 0:16:40 | 0:03:32 | 12.1 | | | | |
| 0:06:39 | 0:10:14 | 0:03:35 | 6.7 | | | | |
| 0:04:54 | 0:11:28 | 0:06:34 | 4.4 | | | | |
| 0:02:01 | 0:02:40 | 0:00:39 | 0.9 | 0:09:10 | 0:09:41 | 0:00:31 | 4.6 |
| 0:03:54 | 0:04:27 | 0:00:33 | 1.5 | 0:04:25 | 0:05:04 | 0:00:39 | 2.7 |
| 0:10:26 | 0:12:42 | 0:02:16 | 6.9 | | | | |
| 0:06:30 | 0:08:37 | 0:02:07 | 5.0 | | | | |
| 0:03:13 | 0:03:50 | 0:00:37 | 2.1 | | | | |
| 0:09:48 | 0:09:48 | 0:00:00 | 3.1 | | | | |
| 0:09:48 | 0:09:48 | 0:00:00 | 3.1 | 0:09:58 | 0:10:03 | 0:00:05 | 3.3 |
| 0:04:02 | 0:06:51 | 0:02:49 | 3.3 | 0:12:04 | 0:21:13 | 0:09:09 | 8.3 |
| 0:03:16 | 0:03:50 | 0:00:34 | 2.2 | | | | |
| 0:11:06 | 0:12:42 | 0:01:36 | 6.8 | | | | |
| 0:11:14 | 0:12:33 | 0:01:19 | 9.1 | | | | |
| 0:05:43 | 0:06:37 | 0:00:54 | 2.6 | | | | |
| 0:01:10 | 0:03:24 | 0:02:14 | 0.9 | 0:19:15 | 0:27:03 | 0:07:48 | 17.1 |
| 0:05:10 | 0:09:16 | 0:04:06 | 2.6 | | | | |
| 0:04:10 | 0:07:51 | 0:03:41 | 2.5 | 0:06:18 | 0:07:31 | 0:01:13 | 3.5 |
| 0:02:15 | 0:05:39 | 0:03:24 | 1.7 | 0:10:05 | 0:11:41 | 0:01:36 | 5.8 |
| 0:02:34 | 0:04:45 | 0:02:11 | 1.3 | | | | |
| 0:02:19 | 0:02:56 | 0:00:37 | 0.7 | 0:02:48 | 0:04:03 | 0:01:15 | 1.2 |
| 0:02:46 | 0:05:45 | 0:02:59 | 1.2 | | | | |
| 0:04:23 | 0:06:45 | 0:02:22 | 1.9 | | | | |
| 0:02:32 | 0:05:21 | 0:02:49 | 1.1 | | | | |
| 0:02:01 | 0:05:13 | 0:03:12 | 1.1 | | | | |
| 0:03:35 | 0:05:39 | 0:02:04 | 1.8 | | | | |
| 0:06:50 | 0:10:14 | 0:03:24 | 3.5 | 0:06:52 | 0:15:32 | 0:08:40 | 5.0 |
| 0:03:33 | 0:05:00 | 0:01:27 | 2 | | | | |
| 0:04:57 | 0:06:36 | 0:01:39 | 2.2 | | | | |
| 0:09:00 | 0:10:05 | 0:01:05 | 5.3 | 0:27:00 | 0:35:43 | 0:08:43 | 22.5 |
| 0:14:00 | 0:15:17 | 0:01:17 | 11.1 | | | | |
| 0:10:00 | 0:13:59 | 0:03:59 | 8.9 | | | | |
| 0:09:04 | 0:09:06 | 0:00:02 | 4.3 | 0:02:12 | 0:05:18 | 0:03:06 | 1.3 |
| 0:11:00 | 0:14:34 | 0:03:34 | 9.0 | | | | |
| 0:04:21 | 0:04:46 | 0:00:25 | 2.3 | 0:15:50 | 0:38:17 | 0:22:27 | 13.4 |
| 0:11:47 | 0:13:00 | 0:01:13 | 7.1 | 0:28:01 | 0:32:54 | 0:04:53 | 21.1 |
| 0:05:13 | 0:07:21 | 0:02:08 | 3.8 | | | | |
| 0:07:28 | 0:10:41 | 0:03:13 | 4.0 | | | | |
| 0:01:02 | 0:02:06 | 0:01:04 | 1.0 | | | | |

| To Incident Scene | | | | To Hospital | | | |
|---|---|---|---|---|---|---|---|
| Response Time | Travel Time | Difference | Distance | Response Time | Travel Time | Difference | Distance |
| 0:02:32 | 0:05:21 | 0:02:49 | 1.8 | | | | |
| 0:04:46 | 0:07:43 | 0:02:57 | 2.5 | | | | |
| 0:08:42 | 0:10:53 | 0:02:11 | 8.6 | | | | |
| 0:05:04 | 0:06:31 | 0:01:27 | 3.2 | | | | |
| 0:03:15 | 0:06:39 | 0:03:24 | 2.6 | | | | |
| 0:06:32 | 0:12:12 | 0:05:40 | 5.4 | | | | |
| 0:05:22 | 0:08:48 | 0:03:26 | 3.8 | | | | |
| | Average | 0:02:12 | 3.9 | 0:12:30 | 0:17:47 | 0:05:17 | 8.8 |
| | Median | 0:02:11 | 2.8 | 0:11:05 | 0:13:57 | 0:02:21 | 6.0 |
| | Maximum | 0:06:34 | 12.1 | 0:28:01 | 0:38:17 | 0:22:27 | 22.5 |
| | Minimum | 0:00:00 | 0.7 | 0:02:12 | 0:04:03 | 0:00:05 | 1.2 |
| | Total Calls | 49 | | 16 | 16 | 16 | 16 |

Appendix G
Response Time Survey (Individual Units)

Medic Unit 4 (Suburban Setting)

| To Incident Scene | | | | To Hospital | | | |
|---|---|---|---|---|---|---|---|
| Response Time | Travel Time | Difference | Distance | Response Time | Travel Time | Difference | Distance |
| 0:06:18 | 0:09:20 | 0:03:02 | 6.9 | 0:12:21 | 0:13:46 | 0:01:25 | 7.7 |
| 0:05:50 | 0:07:35 | 0:01:45 | 2.5 | 0:12:38 | 0:14:08 | 0:01:30 | 6.2 |
| 0:02:01 | 0:02:40 | 0:00:39 | 0.9 | 0:09:10 | 0:09:41 | 0:00:31 | 4.6 |
| 0:09:48 | 0:09:48 | 0:00:00 | 3.1 | | | | |
| 0:09:48 | 0:09:48 | 0:00:00 | 3.1 | 0:09:58 | 0:10:03 | 0:00:05 | 3.3 |
| 0:04:02 | 0:06:51 | 0:02:49 | 3.3 | 0:12:04 | 0:21:13 | 0:09:09 | 8.3 |
| 0:02:15 | 0:05:39 | 0:03:24 | 1.7 | 0:10:05 | 0:11:41 | 0:01:36 | 5.8 |
| 0:09:04 | 0:09:06 | 0:00:02 | 4.3 | 0:02:12 | 0:05:18 | 0:03:06 | 1.3 |
| 0:05:13 | 0:07:21 | 0:02:08 | 3.8 | | | | |
| 0:07:28 | 0:10:41 | 0:03:13 | 4.0 | | | | |
| 0:01:02 | 0:02:06 | 0:01:04 | 1.0 | | | | |
| 0:02:32 | 0:05:21 | 0:02:49 | 1.8 | | | | |
| 0:04:46 | 0:07:43 | 0:02:57 | 2.5 | | | | |
| 0:08:42 | 0:10:53 | 0:02:11 | 8.6 | | | | |
| 0:05:04 | 0:06:31 | 0:01:27 | 3.2 | | | | |
| 0:03:15 | 0:06:39 | 0:03:24 | 2.6 | | | | |
| 0:06:32 | 0:12:12 | 0:05:40 | 5.4 | | | | |
| 0:05:22 | 0:08:48 | 0:03:26 | 3.8 | | | | |
| | Average | 0:02:13 | 3.5 | 0:09:47 | 0:12:16 | 0:02:29 | 5.3 |
| | Median | 0:02:30 | 3.2 | 0:10:05 | 0:11:41 | 0:01:30 | 5.8 |
| | Maximum | 0:05:40 | 8.6 | 0:12:38 | 0:21:13 | 0:09:09 | 8.3 |
| | Minimum | 0:00:00 | 0.9 | 0:02:12 | 0:05:18 | 0:00:05 | 1.3 |
| | Count | 18 | | 7 | 7 | 7 | 7 |

Paramedic 9 – Rural Setting

| To Incident Scene | | | | To Hospital | | | |
|---|---|---|---|---|---|---|---|
| Response Time | Travel Time | Difference | Distance | Response Time | Travel Time | Difference | Distance |
| 0:05:26 | 0:05:26 | 0:00:00 | 2.8 | 0:21:03 | 0:32:42 | 0:11:39 | 16.8 |
| 0:13:08 | 0:16:40 | 0:03:32 | 12.1 | | | | |
| 0:06:39 | 0:10:14 | 0:03:35 | 6.7 | | | | |
| 0:10:26 | 0:12:42 | 0:02:16 | 6.9 | | | | |
| 0:06:30 | 0:08:37 | 0:02:07 | 5.0 | | | | |
| 0:03:13 | 0:03:50 | 0:00:37 | 2.1 | | | | |
| 0:03:16 | 0:03:50 | 0:00:34 | 2.2 | | | | |
| 0:11:06 | 0:12:42 | 0:01:36 | 6.8 | | | | |
| 0:09:00 | 0:10:05 | 0:01:05 | 5.3 | 0:27:00 | 0:35:43 | 0:08:43 | 22.5 |
| 0:14:00 | 0:15:17 | 0:01:17 | 11.1 | | | | |
| 0:10:00 | 0:13:59 | 0:03:59 | 8.9 | | | | |
| 0:11:00 | 0:14:34 | 0:03:34 | 9.0 | | | | |
| 0:04:21 | 0:04:46 | 0:00:25 | 2.3 | 0:15:50 | 0:38:17 | 0:22:27 | 13.4 |
| 0:11:47 | 0:13:00 | 0:01:13 | 7.1 | 0:28:01 | 0:32:54 | 0:04:53 | 21.1 |
| | Average | 0:01:51 | 6.3 | 0:22:58 | 0:34:54 | 0:11:56 | 18.5 |
| | Median | 0:01:27 | 6.8 | 0:24:01 | 0:34:19 | 0:10:11 | 19.0 |
| | Maximum | 0:03:59 | 12.1 | 0:28:01 | 0:38:17 | 0:22:27 | 22.5 |
| | Minimum | 0:00:00 | 2.1 | 0:15:50 | 0:32:42 | 0:04:53 | 13.4 |
| | Count | 14 | | 4 | 4 | 4 | 4 |

Paramedic 26 – Urban Setting

| To Incident Scene | | | | To Hospital | | | |
|---|---|---|---|---|---|---|---|
| Response Time | Travel Time | Difference | Distance | Response Time | Travel Time | Difference | Distance |
| 0:04:54 | 0:11:28 | 0:06:34 | 4.4 | | | | |
| 0:03:54 | 0:04:27 | 0:00:33 | 1.5 | 0:04:25 | 0:05:04 | 0:00:39 | 2.7 |
| 0:11:14 | 0:12:33 | 0:01:19 | 9.1 | | | | |
| 0:05:43 | 0:06:37 | 0:00:54 | 2.6 | | | | |
| 0:01:10 | 0:03:24 | 0:02:14 | 0.9 | 0:19:15 | 0:27:03 | 0:07:48 | 17.1 |
| 0:05:10 | 0:09:16 | 0:04:06 | 2.6 | | | | |
| 0:04:10 | 0:07:51 | 0:03:41 | 2.5 | 0:06:18 | 0:07:31 | 0:01:13 | 3.5 |
| 0:02:34 | 0:04:45 | 0:02:11 | 1.3 | | | | |
| 0:02:19 | 0:02:56 | 0:00:37 | 0.7 | 0:02:48 | 0:04:03 | 0:01:15 | 1.2 |
| 0:02:46 | 0:05:45 | 0:02:59 | 1.2 | | | | |
| 0:04:23 | 0:06:45 | 0:02:22 | 1.9 | | | | |
| 0:02:32 | 0:05:21 | 0:02:49 | 1.1 | | | | |
| 0:02:01 | 0:05:13 | 0:03:12 | 1.1 | | | | |
| 0:03:35 | 0:05:39 | 0:02:04 | 1.8 | | | | |
| 0:06:50 | 0:10:14 | 0:03:24 | 3.5 | 0:06:52 | 0:15:32 | 0:08:40 | 5.0 |
| 0:03:33 | 0:05:00 | 0:01:27 | 2 | | | | |
| 0:04:57 | 0:06:36 | 0:01:39 | 2.2 | | | | |
| | Average | 0:02:29 | 2.4 | 0:07:56 | 0:11:51 | 0:03:55 | 5.9 |
| | Median | 0:02:14 | 1.9 | 0:06:18 | 0:07:31 | 0:01:15 | 3.5 |
| | Maximum | 0:06:34 | 9.1 | 0:19:15 | 0:27:03 | 0:08:40 | 17.1 |
| | Minimum | 0:00:33 | 0.7 | 0:02:48 | 0:04:03 | 0:00:39 | 1.2 |
| | Count | 17 | | 5 | 5 | 5 | 5 |

Appendix H
Summary of All Fire Call Data

| | Severity | | | | Frequency | |
|---|---|---|---|---|---|---|
| Nature Code | Non Emergencies | % Non Emergencies | Time on Scene | % Not on Scene | Total # Calls | No Sit Found Code |
| F84C-Poss Contaminated Article | 6 | 30% | 0:32:14 | 71% | 20 | 25% |
| F84B-Sus Letter Not Contaminated | 1 | 50% | 0:21:52 | 50% | 2 | 50% |
| F84-Assist with Evacuation | 2 | 13% | 0:32:11 | 69% | 15 | 13% |
| F84A-Assist with Suspicious Package | 22 | 42% | 0:20:33 | 76% | 53 | 23% |
| F82-Helo. Landing Site | 0 | 0% | 0:24:49 | 16% | 300 | 74% |
| F80-Vehicle Fire - Auto | 168 | 23% | 0:20:23 | 37% | 720 | 24% |
| F65S-Structure/Barn/Garage | 5 | 16% | 0:59:40 | 47% | 31 | 10% |
| F65D- Dwelling Fire | 60 | 13% | 0:53:28 | 41% | 473 | 15% |
| F65C- Commercial/Industrial | 30 | 16% | 0:40:53 | 42% | 187 | 19% |
| F65A- Apartment/Condo Fire | 8 | 11% | 0:33:00 | 41% | 74 | 12% |
| F60-Service Call | 449 | 23% | 0:17:39 | 19% | 1914 | 25% |
| F50S- Odor Gas-In Struct | 78 | 30% | 0:24:35 | 35% | 264 | 12% |
| F50-Odor of Smoke - Inside | 89 | 29% | 0:18:23 | 18% | 302 | 16% |
| F50G-Natural Gas Line Struck | 3 | 3% | 1:00:50 | 46% | 114 | 24% |
| F50A- Odor Sm/Gas-In Area | 119 | 42% | 0:11:29 | 23% | 286 | 19% |
| F42-Miscellaneous Fire | 74 | 26% | 0:15:43 | 20% | 289 | 20% |
| F35U- Unknown Material | 0 | 0% | 0:54:14 | 39% | 9 | 33% |
| F35S- Spill-hydro -100gal | 26 | 10% | 0:17:53 | 12% | 248 | 19% |
| F35L- Spill Hydro +100gal | 1 | 11% | 0:45:37 | 31% | 9 | 22% |
| F35C- Chem Odor-Structure | 11 | 30% | 0:34:59 | 32% | 37 | 8% |
| F35B- Chemical Leak/Spill | 2 | 17% | 0:54:50 | 28% | 12 | 8% |
| F35A-HM-Chlorine Alarm | 3 | 33% | 1:06:10 | 16% | 2 | 22% |
| F25-Elec Wires - Outside | 121 | 10% | 0:20:50 | 19% | 1261 | 28% |
| F23-Dumpster - Standing Alone | 7 | 9% | 0:13:23 | 6% | 74 | 8% |
| F23B- Dumpster-Attach/bld | 0 | 0% | 0:18:52 | 18% | 2 | 50% |
| F20B-Chimney Fire | 3 | 4% | 0:28:11 | 33% | 69 | 13% |
| F15C-Controlled Burning | 114 | 46% | 0:07:34 | 12% | 247 | 17% |
| F15-Brush/Woods/Trash Fire | 136 | 17% | 0:12:49 | 26% | 789 | 21% |
| F15B- Brush-Near Structure | 1 | 20% | 0:08:12 | 13% | 5 | 0% |
| F13B-Boat Fire - Marina | 1 | 20% | 0:24:37 | 2% | 5 | 0% |
| F10-Appliance | 39 | 19% | 0:15:10 | 29% | 203 | 14% |
| F05W- Alarm - Water Flow | 172 | 75% | 7:51:46 | 33% | 229 | 17% |
| F05H-HI LIFE/Detector/Waterflow | 61 | 70% | 0:14:35 | 58% | 87 | 18% |
| F05D- Smoke Det | 492 | 72% | 0:08:04 | 43% | 683 | 20% |
| F05-Alarms Sounding | 2095 | 78% | 0:11:26 | 38% | 2701 | 18% |
| F05A- CO Detector / No Injuries | 125 | 41% | 0:16:43 | 18% | 307 | 20% |

Appendix I
Fire Call Analysis (Alarm Sounding Example)

| NATURE | # Units Dispatched | # Units Arriving on Location | % Not Reaching Scene | Time Spent on Location | Situation Found | Total | Percentage |
|---|---|---|---|---|---|---|---|
| F05-Alarms Sounding | 1.0 | 0.0 | 100% | 0:00:00 | Unknown | 1 | 0.0% |
| F05-Alarms Sounding | 6.1 | 3.6 | 25% | 1:12:18 | Structure Fire | 8 | 0.3% |
| F05-Alarms Sounding | 2.2 | 1.8 | 17% | 0:09:01 | EMS Call | 5 | 0.2% |
| F05-Alarms Sounding | 6.0 | 5.5 | 5% | 0:38:22 | Unknown Hazardous | 2 | 0.1% |
| F05-Alarms Sounding | 9.3 | 6.7 | 19% | 0:33:20 | Spill or Leak | 3 | 0.1% |
| F05-Alarms Sounding | 3.0 | 2.0 | 25% | 1:30:55 | Excessive Heat | 1 | 0.0% |
| F05-Alarms Sounding | 1.5 | 1.5 | 0% | 0:02:33 | Power Line Down | 2 | 0.1% |
| F05-Alarms Sounding | 3.8 | 3.2 | 6% | 0:25:40 | Arching or Shorted | 6 | 0.2% |
| F05-Alarms Sounding | 5.8 | 3.7 | 40% | 0:37:26 | Unknown Hazardous | 13 | 0.5% |
| F05-Alarms Sounding | 10.0 | 8.0 | 20% | 0:26:11 | Unknown Service | 1 | 0.0% |
| F05-Alarms Sounding | 3.1 | 2.6 | 17% | 0:59:41 | Water Evacuation | 15 | 0.6% |
| F05-Alarms Sounding | 3.0 | 1.8 | 22% | 0:35:00 | Smoke, Odor | 13 | 0.5% |
| F05-Alarms Sounding | 3.2 | 1.6 | 49% | 0:09:33 | Other Service Call | 57 | 2.1% |
| F05-Alarms Sounding | 2.9 | 1.4 | 47% | 0:06:19 | Good Intent | 16 | 0.6% |
| F05-Alarms Sounding | 4.3 | 2.5 | 33% | 0:09:08 | Smoke Scare | 35 | 1.3% |
| F05-Alarms Sounding | 3.0 | 0.0 | 100% | 0:00:00 | Wrong Location | 1 | 0.0% |
| F05-Alarms Sounding | 2.5 | 1.75 | 28% | 0:13:45 | Vicinity Alarm | 12 | 0.4% |
| F05-Alarms Sounding | 2.9 | 1.5 | 44% | 0:07:21 | Other Good Intent | 139 | 5.1% |
| F05-Alarms Sounding | 2.1 | 1.8 | 15% | 0:11:54 | Unknown False | 8 | 0.3% |
| F05-Alarms Sounding | 2.8 | 1.7 | 31% | 0:10:49 | Malicious False | 65 | 2.4% |
| F05-Alarms Sounding | 2.8 | 1.7 | 32% | 0:13:55 | System Malfunction | 1005 | 37.2% |
| F05-Alarms Sounding | 2.9 | 1.5 | 40% | 0:07:52 | Unintentional | 766 | 28.4% |
| F05-Alarms Sounding | 3.7 | 1.6 | 49% | 0:08:06 | Other False Call | 39 | 1.4% |
| F05-Alarms Sounding | 5.3 | 3.6 | 26% | 0:38:12 | Other Situation | 7 | 0.3% |
| F05-Alarms Sounding | 2.9 | 1.4 | 49% | 0:09:03 | | 481 | 17.8% |
| TOTALS: | 2.9 | 1.6 | 38% | 0:11:26 | | 2701 | 100.0% |

| **Recommendations:** | X |
|---|---|
| No Change | |
| Hot Response | |
| Warm Response | X |
| Cold Response | |

| | | | |
|---|---|---|---|
| Severity | Non Emergencies | 2095 | 77.6% |
| Severity | Time on Scene | | 0:11:26 |
| Severity | % Not on Scene | | 38% |
| Frequency | Total # Calls | | 2701 |
| Other | Sit Found N/A | 481 | 17.8% |

**Comments:**

| |
|---|
| A large number are non-emergencies and time on scene is slightly over 10 minutes. It appears that many dispatches are currently still boxes. |

Appendix J
Hot, Warm and Cold Response Recommendations

| Call Taker Nature Code | Hot Response | Warm Response | Cold Response |
|---|---|---|---|
| F05 – Alarm Sounding | | X | |
| F05A – CO Detector/No Injuries | | | X |
| F05D- Smoke Detector (Dwelling) | | | X |
| F05H – Hi Life/Detector/Waterflow | | X | |
| F05W – Alarm – Water flow | | X | |
| F10 – Appliance | X | | |
| F13B – Boat Fire Marina | X | | |
| F15 – Brush/Woods/Trash Fire | | X | |
| F15B – Brush-Near Structure | X | | |
| F15C – Controlled Burning | | | X |
| F20B – Chimney Fire | X | | |
| F22 – Confined Fire Manhole | X | | |
| F22B – Confined Lg Vault | X | | |
| F23 – Dumpster – Standing Alone | | | X |
| F23B – Dumpster – Attach/Bld | X | | |
| F25 – Elec Wires-Outside | | | X |
| F35A – HM – Chlorine Alarm | X | | |
| F35B – Chemical Leak/Spill | X | Type fuel, amt, location | |
| F35C – Chem Odor – Structure | X | | |
| F35L – Spill Hydro +100 gal | Dependant upon fuel, amt, location, etc | | |
| F35S – Spill Hydro – 100 gal | | | X |
| F35U – Unknown Material | Supervisory Discretion | | |
| F42 – Miscellaneous Fire | Supervisory Discretion | | |
| F50 – Odor of Smoke Inside | | X | |
| F50A – Odor Sm/Gas – In Area | | | X |
| F50G – Natural Gas Line Struck | X | | |
| F50S – Odor Gas – In Structure | X | | |
| F60 – Service Call | | | X |
| F65A – Apartment/Condo Fire | X | | |
| F65C – Commercial/Industrial | X | | |
| F65D – Dwelling Fire | X | | |
| F65S – Structure/Barn/Garage | X | | |
| F80 – Vehicle Fire – Auto | | X | |
| F82 – Helo Landing Site | X | | |
| F84 – Assist with Evacuation | | | X |
| F84A – Assist w/Suspicious Pkg. | | | X |
| F84B – Sus Letter Not contaminated | | | X |
| F84C – Poss Contaminated Article | | | X |