

Running head: DEVELOPING A MASS GATHERING EVENT PLAN

Developing a Mass Gathering Event Planning Process for the Iowa City Fire Department

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Appendix Not Included. Please visit the Learning Resource Center on the Web at <http://www.lrc.dhs.gov/> to learn how to obtain this report in its entirety through Interlibrary Loan.

CERTIFICATION STATEMENT

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Abstract

The problem is that the Iowa City Fire Department doesn't have a planning process to direct its response to incidents at specific events involving known mass gatherings that take place within the community. This is a problem because events take place within the community that draw many people into confined areas, restrict roadways, alter traffic patterns, and temporarily store hazardous materials on the streets. The purpose of this applied research project is to develop a mass gathering event response plan process for the community. Action research was accomplished through literature reviews, personal communications, existing departmental planning processes and a developed action plan. Results identified the mass gathering events that take place throughout the community, threats that need consideration during events, resources and considerations needed to combat the threats, planning processes that other agencies are using and techniques to evaluate and exercise the plan. Recommendations include determining a communication element to coordinate existing and future events, determine a planning committee, utilization of an established planning system, procedural and interagency response plan modification, and the development of a means of evaluating and exercising the plan.

Table of Contents

Abstract3

Table of Contents4

Introduction5

Background and Significance6

Literature Review12

Procedures22

Results25

Discussion29

Recommendations33

References35

Appendix – ICFD NIMS Based Event Plan.....37

Introduction

The mission of the Iowa City Fire Department (ICFD) is that of being dedicated to providing the community progressive, high quality emergency and preventive services. The department is also committed to continued improvement in order to meet its mission as evident by its successful attainment of accreditation through the Commission on Fire Accreditation International (CFAI). The ability to respond quickly and mitigate emergencies is of primary importance. The department places a priority on providing a quality response service and protecting those who live, visit & work within the community.

A significant benefit to providing an efficient response is the ability to first plan. The normal preplanning practice of the department has been to look at commercial occupancies within the community and gather basic information in an effort to give the first due company officers an initial response advantage. The department has not taken a focused look at actual events that occur throughout the community in which masses of people gather. Events within the community take place throughout the year but the specifics about many of them are unknown to the department.

The department has the current potential to respond to mass gathering events for a variety of emergencies to include fires, medical incidents, accidents and hazardous materials releases. Anecdotal evidence exists which indicates that the fire department has historically responded to a variety of incidents at mass gathering events. The department currently relies on standard operating guidelines for direction during these responses. Because many of these events repeat themselves on an annual basis, a detailed plan could provide for greater efficiencies and effectiveness related to emergency response.

Both the University of Iowa and many groups associated with the City of Iowa City hold community events throughout the year. Some of these events affect traffic patterns, close streets, impact pedestrian walkways, and incorporate hazardous materials storage in public areas. If the department could determine an appropriate way or process to prepare for incidents during these events a more organized response could be conducted. Being informed, efficient and effective related to emergency response is of the utmost importance to the department. This is a problem as the department doesn't have a planning process to direct its response to incidents at specific events involving known mass gatherings that take place within the community.

The purpose of this applied research project is to develop a mass gathering event response plan for the community. Based on research results, recommendations can be made to implement a planning process that would best fit the needs of the community. Through action research this project will investigate: (a) what mass gathering events take place within the community; (b) what are the potential threats; (c) what are the needs and resources related to the potential threats; (d) what planning processes are being used by other fire service organizations; and (e) how can the plan be exercised and evaluated?

Background and Significance

The ICFD is the oldest fire department in the state of Iowa. Its inception dates back to 1842 which is four years prior to Iowa's statehood. Council file 109 of the Fourth Legislative Assembly of the Territory of Iowa was the bill that authorized the Iowa City Fire Engine Company in February of 1842. This was done for the protection of the then new state capitol building (Brown, 1993).

Since then, several notable fires in the city brought about additional equipment and volunteer fire companies to protect the citizens. The year 1912 saw some significant changes within the city's fire protection measures. Most notably were motorized fire apparatus and the institution of a paid department. Various volunteer companies complimented the paid department until the year 1929 when the department became fully paid. Over the years continued population growth and increased service demands required the department to expand to where it is today.

The ICFD is currently made up of 63 dedicated, full time personnel. Of this total number, six personnel are assigned to a 40 hour administrative detail. These positions include the Fire Chief, Deputy Chief, Fire Marshal, Inspection Captain, Training Officer and the Administrative Clerk/Typist. The remaining 57 personnel are assigned to three response shifts to include a Battalion Chief, Shift Captain, three Lieutenants, and 13 Firefighters.

The ICFD responds to over 4,400 calls annually out of three fire stations. The main station, which is attached to City Hall, is located in the downtown area and is the location of the administrative offices. This station's response units include a front line engine company, command vehicle, a truck/rescue company, a reserve engine, two rescue boats and an ATV for trail rescue. The truck/rescue company operates both a heavy rescue and a platform aerial. The crew utilizes the appropriate apparatus depending on the type of call for service. The department also operates a west side station (station 2) and an east side station (station 3). Station 2 is the hazardous materials specialty station and is equipped with a front line engine, a reserve engine, and a county owned hazardous materials response apparatus. Station 3 is the public education specialty station equipped

with a front line engine and a reserve engine. All three front line engines are staffed with a minimum of three personnel and the truck/rescue company is staffed with a minimum of four personnel. These counts include the officer. The department is in the process of building a north side station (station 4) which will be operational in July of 2011. The specialty of this station will be technical rescue and EMS.

The department also operates a training facility which is primarily overseen by the department's training officer. The training grounds are located in the middle of the community and shares property with one of the city's wastewater treatment facilities. The training facility has a very large metal pole building that is 7,200 square feet in size which contains two classrooms, restrooms with showers, a large parking area for department utility vehicles & trailers, a large SCBA confidence maze, and a compressor with cascade system. Also on the property is a pad that is used for auto extrication training, a three story drill tower for hose and ladder evolutions and a burn structure for live fire training.

The ICFD serves a diverse community of 69,086 within the incorporated 27.9 square miles of city limits of Iowa City. The City of Iowa City, the sixth largest city in the state, is also home to the University of Iowa and the University of Iowa Hospitals and Clinics. The university is a Big Ten university and is populated by over 34,000 students. Along with a growing residential population, the city is home to various commercial and industrial companies to include Proctor & Gamble, ACT, Oral B, and International Automotive Components. The university coupled with resident industries can cause the daily population to swell to over 100,000 people. Bordering the north side of the response district is Interstate 80 which is a very heavily traveled divided highway thoroughfare.

The Iowa River runs directly through the city and is the drinking water source for the populace.

The ICFD responds to a large variety of incident types. Aside from fire response and a first responder medical response service, the department supplements the Johnson County Hazardous Materials Response Team (JCHMRT). This team is staffed with those assigned to station 2 as well as volunteer firefighters throughout the county and individuals that work for various companies with an interest in hazmat response.

The ICFD also responds to rescue incidents that have a technical nature. These include auto & machinery extrication, trench rescue, water & ice rescue, and rope/confined space rescue. These areas of response are a new capability to the department that was initiated within the last ten years. The department trains a core group of personnel to the technician level with the remainder of the department supplementing this group. This group is labeled the Special Operations Rescue Team (SORT).

The Johnson County Ambulance Service provides emergency medical transport with all the fire departments in the county supplementing them as first responders. The ICFD performs this first responder service by training all of its personnel to the EMT-B level.

The ICFD has mutual aid agreements with all the departments that have jurisdiction within the limits of Johnson County. The agreement extends to include any type of emergency incident, is updated every ten years and is used quite often. The ICFD requested and received mutual aid over 20 times in 2010. The department personnel work well with agencies outside of its jurisdiction and to that end is heavily involved with an association of fire departments located throughout the county, entitled the Johnson

County Mutual Aid Association. This is done to maintain cooperative involvement in all areas to improve service delivery throughout the county. A good example of this is the current Mutual Aid Box Alarm System (MABAS) that each department in the county subscribes to.

The current fire department staff has put a considerable effort towards continual improvement in all areas of service delivery. Paramount to this effort was the attainment of agency accreditation by the CFAI in the fall of 2008. This process has caused the department to take a look at current abilities, establish a baseline, and then start to look at a variety of areas within the organization for areas of improvement. One particular area was that of district coverage and response times. An example of this is the initiative to open the fourth station on the north side of the city. This will have a direct affect on response times as well as increase the staffing shortages that confront the department when responding to certain types of incidents.

The fire prevention bureau of the fire department is made up of two distinct divisions – code enforcement and public education. Within the code enforcement division the only dedicated personnel are the fire marshal, who holds the rank of battalion chief, and the captain of inspections. These individuals coordinate all fire safety inspections that take place throughout the jurisdictional boundaries to include private business and university buildings. On duty crews are then utilized to conduct routine fire safety inspections which are assigned during specific periods throughout the year. The only time that any preplan work is completed is while these inspections are carried out via on duty personnel. The preplans are limited to a quick access format to include limited

information to assist with size up of a potential emergency. No current program exists to preplan events within the community.

The organizations, governing bodies, educational institutions, business entities and diverse neighborhoods throughout the city are active and sponsor many events throughout the year. These events range from small neighborhood gatherings to division one university sporting events. They take place in the downtown area, on university property and in various locations within the corporate city limits. It is unknown how many of these events exist.

The fire department has responded on numerous occasions for various emergencies with little direction or organization related to the event. The lack of direction or organization doesn't preclude the department from meeting its mission but positive change in an environment of continual improvement is sought.

This initiative corresponds with goals one, two and three of the United States Fire Administrations Strategic Plan in that it reduces risk via mitigation, improves local planning and preparedness, and it improves the fire services capability for response to all hazards. It is also tied to the 3rd initiative of the 16 Firefighter Life Safety Initiatives. Specifically, this effort will focus attention on the integration of risk management with incident management related to planning responsibilities.

Furthermore this project correlates with the Executive Analysis of Community Risk Reduction course of the Executive Fire Officer Program (EFOP) by specifically researching best practices within the fire service and preparing to respond to all hazards in an effort to reduce severity of potential threats or emergencies within the community.

Literature Review

As the world continues to evolve, fire service delivery expectations and fire service demands increase on a daily basis. Planning, in the general sense, in a traditionally reactive service sometimes fails to get the needed attention it deserves. “The elected and appointed leaders in each jurisdiction are responsible for ensuring that necessary and appropriate actions are taken to protect people and property from any threat or hazard” (Federal Emergency Management Agency [FEMA], 2010, p. 1-1). Planning to appropriately respond to known events within the jurisdiction is something that each fire response agency should incorporate into their repertoire. In times when staffing is stretched to the limit, what is the best approach to plan for the events that take place within response jurisdictions?

To first set a course to plan, one must identify what events to plan for. FEMA (2010) charges that planning must be based on the community and representing the whole population and its needs. While many communities have similarities, many have specific populations that gather in various ways.

There are different perspectives on what constitutes an event of mass gathering. FEMA defines public functions and mass gathering events that are non-routine activities that bring together a large number of people and result in extraordinary demands on public safety services and the community’s infrastructure (Delagi, 2006). To take this a step further, Meredith (2002) has determined that mass gathering events are those with a collection of people over 1000 who are crowded into a limited area.

Many events that take place within the Iowa City community could potentially be classified as those where masses gather. An organization known as the Summer of the

Arts, coordinates many annual events that take place in the downtown area. The organizations executive director, Lisa Barnes (personal communication, January 10, 2011) lists the events as well as the amount of people that are drawn. The Iowa Arts Festival is held each June and draws 30,000 people and the Jazz Festival is held in July and draws 40,000 – 45,000 people. These two events realize multiple street closures in the downtown area along with very large stage setups. The Sand in the City event takes place in August and brings in 10,000 – 15,000 and takes place on the downtown pedestrian mall. The summer events that take place on a weekly basis include the Friday Night Concert Series which draws 1,000 – 2,000 per week. The Saturday Free Movie Series brings 250 – 350 per event and the Downtown Saturday Night event which draws 500 – 750 each week. Each of these events is also located on the downtown pedestrian mall.

The city is just one entity within the community that coordinates public events. The University of Iowa is also a significant driver of events that typically draws large numbers of people. Material provided by the Director of Student Life, Dr. Bill Nelson, PhD (personal communication, February 8, 2011) yielded information detailing the specific events that the university sponsors. The annual events typically take place next to the Iowa Memorial Union in the green space referred to as Hubbard Park.

These annual events typically draw from 5,000 to 10,000 people and it can fluctuate from year to year. At the beginning of the academic year, an end cap event entitled Welcome Week is conducted. Within this week many events are held including the Taste of Iowa City. This event provides students and citizens the opportunity to taste test local restaurants in the downtown area. Streets are often closed as the event is quite

large. The next event in the academic season is Hawkapalooza which takes place on the Thursday prior to the first home football game. Hawkapalooza is the annual kick off event to hawkeye athletics.

October is typically the month in which homecoming events for the University of Iowa take place. Structured events related to homecoming are held in the downtown area as well as at Hubbard Park. This particular week is also a time in which many unofficial parties and events take place throughout the university community. Finally, the other end cap event, to signal an end to the academic year, is entitled River Fest and typically takes place in May. This event takes place at Hubbard Park with many student activities. Connected to this event is a fun run which precipitates street closures.

Knowing the threats related to specific events will assist with response planning. Meredith (2002) has determined that any threat analysis should include the number of participants along with an understanding of a particular event. In other words, a football game should be looked at differently than a political rally related to threat preparation. He further states that the number of people involved, type of people involved, and the duration of the event often correlates with the volume of patients seen in the emergency room. Specific events bring about specific hazards. Caruso (2009) expounds on this related to alcohol. At events where alcohol is served, you might expect to encounter injuries from fights, falls and acute intoxication.

“Hazards to be evaluated shall include natural hazards, human caused events, and technologically caused events” (National Fire Protection Association [NFPA] 1600 standard on disaster/emergency management and business continuity programs, 2010, p. 7). NFPA 1600 (2010) further breaks down hazards for each of these categories. Natural

hazards can be broken down as geological, meteorological and biological. Geological would include wind, rain, snow, earthquake, tornado, extreme temps, lightning, plague, pandemic, and insect infestation. Human caused events would include hazardous materials release, fire, transportation accident, power failure, building collapse, terrorism, riot, and criminal activity. Lastly, technological events could include computer viruses, telecommunication failures, and energy hazards.

FEMA (2010) has produced a preparedness guide to assist agencies with developing emergency operational plans. This document contains a list of various special hazards. This list is also broken down into subcategories to include natural hazards, technological hazards and human caused hazards. To take this a step further, FEMA (2008) encourages authorities to identify and describe the hazards likely to affect the planning area. Being practical must play a role in this process as it takes time and effort to conduct the planning effort.

Weather is a constant concern and is out of any planner's control. The Iowa City Fire Department Standards of Response Coverage (2007) indicates that lightning will injure over 300 and kill at least 80 people each year. Kramer (2009) contends that each year about 22 million lightning strikes touch ground within the U.S. The Midwest portion of the county has the potential to realize hail stones ranging from pea sized to baseballs.

Tornado season starts in February and extends into the summer. Tornadoes occur in all 50 states but those most prone to these storms lie in the eastern plains and the Mississippi River and Ohio River valleys. Half of U.S. tornadoes occur during the months of April, May & June. Tornadoes typically happen in the afternoon and travel to the northeast. Kramer (2009) further discusses weather type threats related to flash

flooding, earthquakes and winter storms. Earthquakes are fairly limited to fault areas. The New Madrid Seismic Zone is the closest area to Iowa. Iowa City realizes a low probability of an earthquake (SORC, 2007). Winter storms are somewhat predictable, and flash flooding can occur at any location within the U.S.

The NOAA Satellite and Information Service (2011) reports on all weather events for specific counties. Over the past ten years the Johnson County area was subject to many different types of events to include 20 flood situations, 27 hail storms, 34 significant wind/thunderstorms, and seven tornado events.

As we continue to establish potential threats its important to note that the United States is a country where there are numerous places with large concentrations of people and freedoms that are envied by many but despised by some. Kramer (2009) speaks about a Harris Poll that took place in 2006 related to threats to the United States. The results of this poll indicate that a large percentage of people believe that threats include illegal immigrants, a natural disaster to destroy a large area of a major city, terrorists launching a number of attacks against airplanes, the county is attacked with biological weapons, major riots by groups within the U.S., a city is attacked by a nuclear weapon, and a large scale avian flu epidemic.

The Iowa City Police Department (2010) produces an annual report which includes crime statistics. The Iowa City area has seen significant increases in different categories over the past five years. These categories include aggravated assaults, larceny, vandalism of property, narcotic violations, motor vehicle theft, robbery, shoplifting, simple assault, theft from building, theft from motor vehicle, and wire fraud.

Potential and practicality are two very different things. FEMA (2010) provides that some approaches involve the consideration of only two categories, frequency and consequences and then treat them as equally important. In other approaches potential consequences receive more weight than frequency. FEMA has also developed HAZ US which is nationally standardized geographic information system software that can be used to assess vulnerability by estimating losses from floods, earthquakes, and hurricane wind events.

“Planning for all threats and hazards ensures that, when addressing emergency functions, planners identify common tasks and those responsible for accomplishing the tasks” (FEMA, 2010, pg. 4). Resources needed to address a threat or hazard are jurisdiction specific. Delagi (2006) instructs us to rely on rules and regulations, SOP’s, and medical protocols. Also important is the ability to depend on ingenuity, talent and experience to overcome anything outside those boundaries. Perry and Lindell (2007) shared this concept. They feel that the local response usually centers on using the local emergency services under an agreed upon response plan. ICFD Standard Operating Guidelines (2010) clearly indicate which units are dispatched for specific types of emergencies. Once an event grows beyond the resources of the ICFD, the mutual aid box alarm system (MABAS) will be utilized. MABAS includes all departments within Johnson County along with the addition of some boarding departments. Johnson County also relies on established medical protocols. These protocols detail mass casualty incident response and which resources can be utilized.

Prediction of patient load is complex. Planners should focus on ten key areas to include crowd size, personnel, communications, triage, access to medical care, egress

from site, medical care protocols and facilities, public information, mutual aid, and record keeping (Delugi, 2006). He further indicates that command staff should prepare some type of incident action plan, which documents the incident command system's organizational assignments on a form that can be distributed throughout the command structure. Meredith (2002) further illustrates this by detailing an organizational plan that is agreed upon prior to any mass gathering event. A way to ensure that this plan is well understood is to have a thought out organizational flow chart with associated contact information available to everyone involved in the response.

“Tactical plans focus on managing personnel, equipment and resources that play a direct role in an incident response” (FEMA, 2010, pg. 6). The national incident management system (NIMS) protocol provides a consistent framework for incident management regardless of the cause, size, or complexity of the incident. This is consistent across the nation for incident management for all hazards. Plans need to identify personnel, equipment, facilities, supplies and other resources available within the jurisdiction. Reardon (2005) further provides that planning resources will likely fall within three different areas: personnel, apparatus, and equipment.

FEMA (2008) identifies various mitigation actions that can be put into play to assist with planning for events. These actions detail prevention, property protection, public education and awareness, natural resource protection and structural projects. Techniques include regulatory action, open space preservation, modification of existing buildings, outreach projects, real estate disclosure, watershed management, construction projects, and culverts. FEMA (2010) further identifies traditional functional components of emergency operations. They include providing direction, control & coordination,

communications, transportation, warning, medical services, population protection, damage assessment, firefighting, search and rescue, and security. The objective is to identify the resources needed to accomplish tasks with regard to resource availability in order to make the operation work.

The appropriate deployment of forces for triage, staging, and escape routes will be of the utmost importance (Kramer, 2009). He further states that resources in the form of mutual aid, auto aid, regional, statewide or national aid should be considered or planned for. One drawback to mutual aid is widespread disasters will cause communities throughout the surrounding area to be hard at work on their own events. Other considerations need to be in the form of IMT's, DMAT's, US&R teams, DMORT's, CST's & the FBI.

One of the missions of almost any response agency is to be prepared for practical events that are likely to occur within their jurisdiction. Response agencies throughout the nation use various processes to ensure they are ready for such a response related to mass gathering events.

The Mount Pleasant, South Carolina Fire Department utilizes action planning to ensure they are ready for various events within their community. A guideline drives this process and was last reviewed in December of 2010. Their plans contain the activity name, location, date, time, attendance estimate, units required, type of function, operation, contact person, explanation of time, miscellaneous information, and the person completing the plan. Their guideline also requires that plans are posted to the computer server and after action reports be completed no later than two weeks after the event (H. Williams, personal communication, January 2, 2010).

Mass Gathering Medical Care (2005) is the name of the process that is currently being utilized by Sioux Falls, South Dakota Fire Rescue. This plan is specific to medical care and includes physician medical oversight, medical reconnaissance, negotiations for event medical services, level of care, human resources, medical equipment, treatment facilities, transportation resources, public health elements, access to care, emergency medical operations, communications, command and control, documentation, and CQI.

The Spartanburg, South Carolina Public Safety Department doesn't utilize a formal planning process. A fire department representative will meet with the city special events committee and review applications for event activities. Anything of any specific interest will be forwarded to the shift that would be on duty the day of the event (B. Hall, personal communication, January 11, 2011).

The West Metro Fire Protection District in Wildwood, Missouri is utilizing NIMS driven plans with NIMS related forms. This includes ICS 202, ICS 203, ICS 204, ICS 205, and ICS 207 forms to facilitate their action plans. These forms incorporate the incident name, date, time prepared, operational period, general control objectives, weather forecast, general safety message, IC & staff, agency representatives, planning information, logistics, support branch, operations section, various divisions/groups, and an organizational chart (E. Beirne, personal communication, January 3, 2011).

The DeKalb, Illinois Fire Department also uses the NIMS ICS 202, ICS 203, ICS 204, ICS 205, and ICS 207 forms to ensure that they are prepared for community events (E. Hicks, personal communication, January 7, 2011).

Once plans are designed and documented, a determination of their effectiveness comes into question. Discharge of the plan begins with a detailed assessment of

jurisdictional capacity. Perry and Lindell (2007) found that this measures the functions that are required in the plan for threat mitigation, preparedness, emergency response, recovery and determines whether the system of departments, agencies, & mutual aid agreements can execute these functions. Agencies must show that they can comply with the plan. If one doesn't test the plan its success will be unknown until an actual event.

FEMA (2007) details a cycle of preparedness with both an exercise and evaluation portion as cycle elements. It is further indicated that training and exercises will allow for capabilities based preparedness. Two areas of importance related to this would include the development of a multi year training and exercise plan that uses a building-block cycle of escalating exercise complexity. Kramer (2009) stresses that the key to ensuring continuous planning is to test the plans in both tabletop and full scale exercises during nonevent times.

There are three basic types of exercise: tabletop, functional and full-scale exercise. Perry et al. (2007) insists that meaningful disaster exercises test personnel, protocol, and equipment. An exercise needs a scenario designed to be like a potential threat. Furthermore, NFPA (2010) suggests that plan testing and exercising shall be conducted on the frequency needed to establish and maintain required capabilities. Exercises shall be designed to evaluate the program, identify planning and procedural deficiencies, test recently changed procedures, clarify roles and responsibilities, obtain participant feedback and recommendations for program improvement, measure improvement compared to performance objectives, improve coordination between internal and external teams, organizations, and entities, validate training and education, increase awareness and understanding of hazards and the potential impacts of hazards on

the entity, and identify additional resources and assess the capabilities of existing resources, including personnel and equipment needed for effective response and recovery.

Procedures

This applied research project used the action research methodology by gathering information to develop a planning process for the ICFD. The procedures utilized to address this research project consisted of multiple steps. The first step was to investigate the different events that take place within the response district. This involved personal visits, emails and telephone calls with executives from various organizations. Telephone requests from some organizations were not returned.

As research was conducted on Iowa City community specific events, a limitation of locating sources that were willing to provide information was realized. Both the University of Iowa Department of Public Safety and the University of Iowa Sports Marketing Department failed to respond to multiple requests. The City of Iowa City, Summer of the Arts Organization and the University of Iowa Office of Student Life provided information and showed interest in future planning collaborations.

The next step involved a detailed examination of the literature related to potential threats, needs and resources required to control the threats, and the recommended actions needed to take to exercise or evaluate the completed plan. The National Fire Academy Learning Resource Center was used to gather fire service related publications on the topics. Keyword searches were also done through the Google website which included the scholar research option. Multiple technical resources were purchased that contained

information on the topics. The University of Iowa College Library was used for its extensive collection on materials related to planning and conducting research in general.

When determining weather threats, consideration was given to those threats likely to occur from March to October. The reason for this is that there are no mass gathering events that take place during the winter months. Also, a count for lightning strikes was not evaluated due to the extensive lightning related events that take place during the year in this area.

An extensive look into criminal activity that takes place within the community was done via annual reporting of the Iowa City Police Department. Any significant criminal activity increase was used to gauge the potential criminal concerns related to security at mass gathering events. Any activity that has grown over ten percent in any of the past five years was considered significant growth. Crimes not associated with this list remain a concern, just not as high of a concern.

The final step was to investigate various fire departments in an effort to determine what processes they are using to prepare their agencies for response to community events. In total, a request for information was extended to 13 fire departments. One of the original driving prerequisites for selection for information was that the department had to have previously secured accreditation through the Commission on Fire Accreditation International. Outside of this requirement, two departments that represented the same size and in close proximity (less than 250 miles) to the ICFD were also provided a request for information. These requests bore returns from five departments which were provided electronically. These five departments returned correspondence that provided a variety of information to include program descriptions or actual plan examples.

All 13 departments were contacted via electronic means and it is assumed that all departments received the request for information. It is also assumed that the departments understood the requested information. The information that was returned was at the sender's discretion. The information request was somewhat vague and there might have been benefit in asking specific questions to report on detailed elements of local event plans.

Definition of Terms

CST – Civil Support Team. Teams established to deploy rapidly to assist a local incident commander in determining the nature and extent of an attack or incident; provide expert technical advice on WMD response operations, and help identify and support the arrival of follow-up state and federal military response assets.

DMAT – Disaster Medical Assistance Team. DMAT is a group of professional and para-professional medical personnel (supported by a cadre of logistical and administrative staff) designed to provide medical care during a disaster or other event.

DMORT – Disaster Mortuary Operational Response Teams. Federal level response team designed to provide mortuary assistance in the case of a mass fatality incident or cemetery related incident.

FBI – Federal Bureau of Investigations. Federal organization designed to protect and defend the United States against terrorist and foreign intelligence threats and to enforce the criminal laws of the United States.

IMT – Incident Management Team. An IMT is a cadre of multi-agency, multi-jurisdictional professionals, activated to support incident management at large or complex incidents, disasters or special events.

NIMS – National Incident Management System. The federal system that provides the frame work for planning and response.

US&R – Urban Search & Rescue. US&R teams are comprised of firefighters, engineers, medical professionals, canine/handler teams and emergency managers with special training in urban search-and-rescue environments, serve as a national resource for disaster response.

Results

The first research question set out to determine just what mass gathering events take place throughout the community. The research that was conducted and included within this project did not uncover many sources that delineated an actual population count related to the definition of mass gathering. Mass gatherings will be defined as those events that draw over 1,000 people and those events that are held outdoors.

A list of annual events in chronological order from these organizations include River Fest, Iowa Arts Festival, Iowa City Jazz Festival, Friday Night Concert Series, Sand in the City, Welcome Week to include Taste of Iowa City, Hawkapalooza, and University of Iowa Homecoming.

The University of Iowa also sponsors a concert and lecture series that is all indoors and is held in either the ballroom of the Iowa Memorial Union (IMU) or another venue on the University of Iowa campus depending upon estimated ticket sales. Even though these events don't typically draw more than 1,000 people, they do pose some traffic congestion issues and much of the approach to the IMU can be blocked by large truck traffic.

The next research question is attempting to determine what threat potential exists for the community related to the events. Threats to the Iowa City community take the form of geological, human caused and technological events. Iowa City's geographical position makes spring weather a significant concern. Clearly the community realizes many weather events during the spring and into the summer months, which is when many mass gathering events take place. Wind, hail, and tornadic weather can approach quickly with limited warning. This is most certainly a threat when considering plan components. Because most events take place during the summer months, high heat conditions should also be a consideration. This could have an effect on medical emergency situations.

Iowa City, with the University of Iowa playing such a significant role, has a large population of young, active adults. The various mass gathering events, as well as any organized events that occur have a degree of alcohol involvement. This can attribute to poor judgment and reckless behavior which is clearly an issue that planners need to consider.

Iowa City is a very liberal community and security from certain types of criminal activity should be considered when planning. All criminal related threats need to be considered with special emphasis to include the list that was provided in the literature review. This list could easily translate applicability to mass gathering events anywhere within the community. Global terrorist activity could also be a potential considering the federal and state institutions found throughout the community.

The Iowa City Fire Department relies on anecdotal evidence that illustrates past responses to these types of events related to medical, rescue and fire events.

Unfortunately the department does not correlate its response data to specific events within the community rather its specific to dates, times, and locations.

It's believed that technological events won't be much of an issue with the types of events that occur within the community. Power loss could be a potential and something that would need to be considered.

Question three is related to the needs and resources specific to the potential threats. Resources are categorized as personnel, apparatus and equipment. The needs and resources will first be those included within the planning committees. Committee members will most certainly involve the parent organization, responding agencies, elected officials, and possibly members of the public.

Response considerations, at least initially, are well established and shared amongst local agencies. Interagency response plans are in line and are driven by individual agency standard operating procedures. This would include initial response assignments, mass casualty incident agreements, and mutual aid box alarm system agreements. All area agencies subscribe to the national incident management system (NIMS) and are trained as such. Policies and guidelines are also in place to utilize city owned heavy equipment resources.

The area agencies have also been educated with regard to state, regional and state response assistance. This will present itself in the form of DMAT's, IMT's, and US&R teams. The Iowa Intrastate Mutual Aid Compact could also be a mechanism to utilize resources outside the community in the time of an emergency. The City of Iowa City is a signer of this compact. Ensuring that all responders know how to initiate such assistance will need to be a portion of any large scale plans.

The local and expanded response resources are in place and are driven by documented and approved response guidelines and interagency agreements. Future planning opportunities could provide renewed explanation and insight into additional resource needs. Plans should be written that clearly indicate authority positions within the command structure should an event occur. A contacts page should also be worthy of the plan so that should a stakeholder need to be notified it can be done so in short order.

The fourth research question seeks to determine what planning processes are being used by other fire service organizations. Unfortunately only five departments responded to requests so a large sampling was not obtained. Of those five, one wasn't using a documented format, two were utilizing department unique processes and forms and the remaining two were using processes that were NIMS compliant with the appropriate forms. The NIMS related process appeared to be very organized, easy to read and sought practical information. The other processes that were used appeared to be all encompassing but they also appeared to be so lengthy that any responder would be reluctant to become familiar with the plan.

It's clear that FEMA has put considerable time and effort into establishing forms which could drive a process to plan for events. Not only does this make planning more organized, clear, and concise, it also provides for a consistent format which can be understood by all involved once they grow accustomed to the process. A final product to this research in the form of a mass gathering event plan is appendix A to this document.

The fifth and final research question made an attempt to seek ways that the plan could be exercised and evaluated. Obviously the plan has to be evaluated in some way shape or form. If not, the accuracy of the plan will be unknown to the planners. The plan

should be tested via table top exercises or full scale practical scenario based exercises. Due to the amount of sponsoring organizations that hold events throughout the community, it would be appropriate to hold at least table top exercises for each event in some type of scheduled format. Full scale scenario's are time intensive and have budget implications. Due to very tight schedules and local budget constraints the table top exercises would be a solid first attempt to evaluate the effectiveness of each plan.

Discussion

Prior to determining what a mass event is, a list of events was first compiled. This list, along with the literature review provided direction related to a definition of mass related to planning. Delagi (2006) and Meredith (2002) provided their interpretation of the term by exploring both a number as well as condition. For the purpose of this ARP, community events that have a gathering of over 1,000 were included. This is coupled with those events that are held outdoors. Those events that occur within a structure must follow permit and code requirements and are therefore taking place in a controlled environment compared to that of an event held outdoors.

Attempting to determine what events take place within the community was an eye opening experience but it was also unfortunate that an all encompassing list of community events could not be compiled. Past response experience indicates that the listed events are certainly events that have a significant impact on the community and are events that response agencies need to consider and plan for. As the department plans for these events additional steps can be taken to again approach the organizations that did not provide event information.

Planning is a responsibility of each response agency and it is well within the mission of the ICFD. Determining the events that are occurring throughout the community was easy or difficult depending on the sponsoring agent. The City of Iowa City, the University of Iowa Office of Student Life, and the Summer of the Arts organization were approachable, easy to work with and were interested in sharing information. Taking a look at existing events and ensuring that future events are considered should be a focus as the department moves forward. The University Sports Marketing Department and the University of Iowa Department of Public Safety were also contacted in an effort to determine related events to their organizations. Information was not provided due to unknown reasons. Multiple telephone calls were initiated with no return information.

The literature review provided a comprehensive in depth look at the topic of potential threats that need to be considered when planning for an event. The various documents considered were all encompassing and detailed threats and hazards that could be appropriate for any department no matter its location or type of event. FEMA (2010) and Kramer (2009) provide exhausting lists of possibilities but this comes down to location, specific event attendees, past data trends, and likely or practical possibilities. Caruso (2009) discussed the potential of those under the influence to be of concern when planning for events. This is certainly problematic for the planners as substance abuse curtailment has been somewhat of a policy driver in recent years for both the University of Iowa and the City of Iowa City.

For the type of events held within the Iowa City community, the planning committee will need to prepare for weather events, alcohol or drug influenced behavior,

certain criminal activity, routine medical/rescue/fire situations, and navigating or knowing traffic flows related to response. Natural and human caused events appear to be the most practical related to possible threats. Technological threats, although important, don't appear to be drastic or probable during the mass gathering events listed.

Meredith (2002) and Caruso (2009) both indicated that a look at the individual attending the event was of special importance. They felt that who an event attendee was as a person has an effect on how they might react to a situation as well as what resources it might take to help them. This idea is appropriate however; community wide events will most likely incorporate walks of all ages, backgrounds and abilities. The ICFD and many of its partnering response agencies have detailed response guidelines that drive response assignments. This will more likely dictate resource allotment versus that of the event attendee. It will be interesting to witness if any changes are made with respect to the current response guideline once a routine event planning process is underway.

The ICFD has worked diligently for many years to put multi-agency response agreements in place. NIMS related training has also benefited the response community by ensuring that larger incident mitigation techniques are instilled amongst responders. Delagi (2006) and Perry et al. (2007) both indicate that strong local policies and guidelines are the foundation for successful response. Because not every situation can be planned for, a strong, structured set of response guidelines is very important.

Reardon (2005) and FEMA (2010) speak directly as to what type of resources should be typed to certain events. This provides an appropriate general framework for response agencies even though it could be speculated that most local response agencies will look at this as a starting point and then manipulate this typing to best fit their

locality. At the very least, positions within the organizational structure should be clearly identified with all parties understanding their roles. Both Meredith (2002) and Delugi (2006) agree on this point. Ensuring that those responding understand the players and the positions will be the key to organization and efficiency.

Various authors including FEMA (2008) indicate that there are potential preventative measures that may be identified during the planning process that local officials could explore. For the purpose of this project, response and mitigation is the priority. Outreach, prevention, & public education situations may be identified during the planning processes, however such notions could potentially be expensive, unattractive to the promoters, and very time consuming.

It appears that more and more fire response agencies are utilizing a planning process to not only ensure that they are prepared to fulfill their mission, but to also remind the public that they are there to serve. Unfortunately only five fire response agencies responded to the request for information related to this project.

One of the responding departments utilizes a simple low key approach with minimal paperwork and minimal time investment. 40% of the responding departments utilized their own planning documents and it appeared that one of these departments had a long history of using their planning method. The remaining 40% of the responding departments are using FEMA authored NIMS documents. These documents were very organized and easy to locate information. The NIMS is the direction provided by our federal governing agencies.

Plans and personnel need to be exercised for effectiveness and efficiency. Perry et al. (2007) and NFPA (2010) share the importance of varying levels of exercise. They

could be in the form of a tabletop, functional, or full-scale exercises. Table top exercises are a solid approach to testing plan development whereas full-scale exercises are a good technique for responder training. It's important to remember that once a plan is in place it can't be left in a drawer and forgotten. Kramer (2009) reminds us that continued evaluation needs to be scheduled so that plans are up to date and responders are well trained.

Recommendations

The following recommendations were made from the information gathered. These recommendations should be first considered by the administrative staff of the ICFD for further review or approval. Because many of the mass gathering events indicated will be taking place in the months to come, the department should consider the recommendations within the next 90 days.

The purpose of this project was to develop a mass gathering event response plan for the community. After determining what events take place throughout the community, comparing various works within the literature review related to emergency planning, and soliciting planning processes used by other departments, it appears that the ICFD could clearly benefit from using a planning process for mass gathering events. A few recommendations can be offered to strengthen the Iowa City Fire Department.

- Continue to reach out to the University of Iowa Department of Public Safety and the University of Iowa Sports Marketing Department to determine additional mass gathering events that take place throughout the community.
- Determine a method of communication or notification regarding the establishment of new or existing events.

- Determine a planning committee representative of response agencies, the sponsor organization, elected or government officials, and the community.
- Research additional NIMS courses for further direction on event planning.
Courses to include IS 300 – Exercise Evaluation & Improvement Planning and IS 235 – Emergency Planning.
- Utilize a planning process that is compliant with the Federal Emergency Management Agency’s National Incident Management System.
- Utilize a planning software program that is using the most up to date NIMS forms.
- Utilize a planning software program that appropriately fills multiple forms as they are filled in an effort to maintain consistency and ease of use.
- Adjust or refine departmental standard operating guidelines and interagency agreements related to response once the planning process is approved and instituted.
- Develop a means to exercise and evaluate the plans either by table top or full-scale exercises or a combination of the two.

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