

Running head: RAPID DAMAGE ASSESSMENT GUIDELINE

Developing a Rapid Damage Assessment Guideline for the City of Mentor

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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.

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Abstract

The problem is that the City of Mentor along with the balance of the Fire Departments in Lake County does not have a procedure or guideline for rapidly assessing damages after man-made or natural disasters. This failure to recognize, request, and receive appropriate resources can lead to the possibility of additional loss of life or property. The purpose of this action research method was to produce a draft procedure for rapid damage assessment. The research investigated the following questions: 1) What information or criteria needs to be included in a rapid damage assessment procedure? 2) In what format should the procedure be written? 3) What procedures are being used by other fire departments or public agencies? The methods utilized included literature review, personal communications, and a survey of the Fire Departments of Lake County. The results lead to a procedure that will provide the communities in the County of Lake a guide for conducting a systematic triage of their community during a rapid damage assessment. It is recommended that the procedure be presented to all stakeholders (fire, police, mayors & city managers) in Lake County for adoption, training and periodic reviews.

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Introduction

The City of Mentor is located in Lake County, the smallest county in Ohio. The City of Mentor, along with Lake County, has been subject to flooding, “Lake Effect” snow, wildland fires, tornados, straight line winds, major hazardous material incidents, earthquakes and possible radiation hazards due to a nuclear power plant located in the county. These natural and man-made disasters have quickly overwhelmed the local resources. The National Fire Academy’s Executive Analysis of Fire Service Operations in Emergency Management (EAFSOEM) states that a rapid damage assessment is vital in obtaining the proper amount and type of resources to reduce the impact on life and property in the disaster area (EAFSOEM, 2009).

The problem is that the City of Mentor along with the balance of the Fire Departments in Lake County does not have a procedure or guideline for rapidly assessing damages after man-made or natural disasters. The City of Mentor’s current Emergency Operations Plan simply states that there should be a consideration given to the area to be searched, number of persons affected, and the only mention of damage assessment is one completed by the building inspectors to determine structural damage to buildings (Emergency Operations Plan, 1995).

The purpose of this research will be to produce a draft procedure for conducting a rapid or immediate damage assessment. An action research method will be used to answer the following questions: 1) What information or criteria needs to be included in a rapid damage assessment procedure? 2) In what format should the procedure be written? 3) What procedures are being used by other fire departments or public agencies?

Background and Significance

The Mentor Fire Department (MFD) is a suburban fire department serving approximately 52,000 people in an area of 27 square miles. The City of Mentor is located in Lake County, which is adjacent to Cuyahoga County and is part of the Cleveland metropolitan area. The MFD has 140 employees comprised of 76 full-time firefighters, 55 part-time firefighters, and 5 civilian employees. The department is comprised of the Fire Chief, 3 Deputy Chiefs (Operations, Administration, and Support Services), 3 Battalion Chiefs, 16 Lieutenants, 117 full and part-time firefighters, 3 office personnel, and 2 part-time civilians in Fire Prevention. There are a minimum of 23 firefighters on duty every day to maintain coverage in 5 fire stations and staff 5 Paramedic Engines, 5 Paramedic Ambulances, 1 Paramedic Aerial, and the Battalion Chief.

In 2009 the Mentor Fire Department responded to over 6,400 incidents. Seventy-four percent of these incidents were for Emergency Medical Services (EMS). The remaining balance was divided between service and fire incidents. The department serves the residents of Mentor and Lake County by providing a Hazardous Material Team, Technical Rescue Team (Rope, Confined Space, Trench, Urban Search and Rescue), Water Rescue (Swift water, Dive, Ice Rescue), Fire Investigation Unit, Public Education (Safety House, CPR, First Aid, Fire Extinguishers, Juvenile Fire Setter Intervention Program), and a Fire Prevention Bureau (Plan review, Fire Prevention).

Economically, Mentor is sixth for retail sales and tenth in the State for manufacturing jobs. Mentor's economy is supported by Interstate 90, State Route 2, CSX, and Norfolk Southern railroads. Interstate 90 (100,000 vehicles daily) and CSX (80 trains daily) are major transportation links between the east and west coast. These transportation arteries move vast amounts of goods and services through Mentor and Lake County daily.

The City of Mentor and Lake County has experienced several natural and man-made disasters. Since 1960 the National Climatic Data Center (NCDC) reports that Lake County has had 421 incidents of severe weather resulting in 38 deaths, 266 injuries and 626.5 million dollars in property damage (NCDC, 2009). On July 28, 2006 the City of Mentor and Lake County had a state of emergency due to flooding. This was a record 1000 year recurrence for rainfall intensity in a 48 hour period resulted in a flood of a 500 year recurrence (Astifam, B., Ebner, A., Lombardy, K., & Sherwood, J., 2007). A record 48 inches of snow fell November 9th to 14th, 1996, resulting in 21.0 million dollars in property damage (NCDC, 2009). The Mentor area tornado activity is 13% greater than the national average while earthquake activity is 35% smaller. There have been 6 earthquakes with a magnitude of 3.6 or stronger since 1986 (City-Data, 2009). On October 10, 2007 a train derailed on the City of Mentor's border, resulting in a half mile evacuation (Newsinferno, 2009). On April 23rd, 2003, the Mentor Marsh State Nature Preserve experienced a fast moving marsh fire that engulfed 300 to 400 acres coming to within 50 feet of homes adjacent the marsh (Enquirer, 2003).

The potential for a disaster, either natural or man-made, makes it imperative that the City of Mentor has a formalized rapid damage assessment procedure. The rapid damage assessment procedure will allow the incident commander to get a handle on the event and will assist in determining and managing the kind and amount of resources and making executive decisions to mitigate the event, which will in turn aid in the reduction of life and property loss. This directly relates to the United State Fire Administration goals of responding to emergency situations appropriately and in a timely manner.

Literature Review

The Executive Leadership (2005) manual states that "Leadership is a process through

which an individual influences others toward the accomplishment of common goals” (p. 3-3). A common goal for the Fire Chiefs’ of Lake County is to protect life and preserve property. The National Fire Academy’s Executive Analysis of Fire Service Operations in Emergency Management (EAFSOEM) states that a rapid damage assessment is vital for incident commanders in obtaining the proper amount and type of resources to reduce the impact on life and property in the disaster area (EAFSOEM, 2009). The literature review was initiated to find answers on developing a rapid damage assessment procedure as they relate to these research questions: 1) What information or criteria needs to be included in a rapid damage assessment procedure? 2) In what format should the procedure be written? 3) What procedures are being used by other fire departments or public agencies?

The first question researched in the literature review was “What information or criteria needs to be included in a rapid damage assessment procedure?” The EAFSOEM (2009) manual states that a damage assessment is the “gathering of information related to the impact of an event, or series of events, on life and property within a defined area” (p. 6-3). The immediate or rapid damage assessment has criteria of being site or area specific, rapidly obtained and the information gathered used for various reasons in the beginning or active phase of an event. The information gathered is vital to determine the impact on property and life from the event (EAFSOEM, 2009). FEMA (2009), in their *Wide Area Search* program, state that intel gathering helps “determine size and scope of the incident and may involve multiple agencies and jurisdictions” (p. 41). This intel can be gathered thru recon, interviews, news media and reports from the public. Ohio’s Emergency Management Agency (EMA), *EMA Preliminary Damage Assessment Field Guide* (2006) states that damage assessment will allow local officials to

ascertain the gravity and extent of the event, put a figure with the number of homes and businesses impacted, and whether local resources are adequate for rescue and recovery.

In the draft *Tactical Guidelines, Rapid Damage Assessment Procedures* for the Hialeah Fire Department, Drozd, (2005) began with a Purpose section, where he gave the basis for the rapid damage assessment; to be conducted within a few hours, identify life threatening situations, imminent hazards, prioritize responses, allocate resources, and to determine when to request assistance from other sources. The Purpose section is followed with situation or background and assumptions. Assumption that the community is capable of handling most large scale events until a rapid damage assessment is conducted and impact to the community is determined. That normal fire department operation will need to be suspended and will probably be hampered by the event. The event will increase the probability of loss of infrastructure, utilities, transportation and communications. The rapid damage assessment will size-up the impact of the event, and will be used later for reporting to the various county, state, and federal agencies. Defined are the operations of the different agencies, Fire Department, Police Department, Public Works, Emergency Operations Center (EOC), and Rapid Damage Assessment Task Force (RDAT) who will assist in mitigating the event. Also defined is the activation and priorities which are broken down into two phases. Phase one is a rapid damage assessment of each station and critical city facilities (e.g., Police Station) where repair needs are determined to keep them in service. These are considered priority items that need to be communicated to Command. Phase two is the size-up of each section or sector of the city, and must continue until all sectors are evaluated. Only life threatening and easily mitigated hazards posing threats to large number of persons is cause for stopping the rapid damage assessment. Each RDAT will have specific forms that list the

critical facilities and infrastructure for their sector. The draft concludes with the rapid damage procedure have yearly training and evaluation.

According to the article on eHow.com written by Sarah Wilson (n.d.) a standard operation procedure will describe “how the work will be performed, who will perform the work, and how often the job should be done.”(see section 1.1) It also notes that a standard operating procedure is a general overview of a task that needs to be completed and who should be responsible to ensure completion.

This then leads to the question of “In what format should the procedure be written?” Richard Stup (2001) wrote a guide for standard operating procedures where he broke down the formats into four basic types; simple steps, hierarchical steps, graphic format, or flowchart. He states two factors are used to determine what type one should use. “First, how many decisions will the user need to make during the procedure? Second, how many steps and substeps are in the procedure?” (p. 3) Routine procedures, short and with few decisions will use the simple format. Procedures with more than ten steps and need few decisions should use the hierarchical or graphic format. Lastly a procedure that requires numerous decisions should be in the flowchart style. Wilson (n.d.) feels that the format depends on the person writing them, but a department or company should have a standard template. The template should include these sections: “Heading, Approval or Effective Date, Version Control, Introduction, Scope, Purpose, Procedure Description, Approval Signature, Document History” (see section 3.3). Walsh (2010) also recommends having a standardized template that is easy to use. Further procedures are instructions and should be written from the user’s perspective. Procedures need to be written in the present tense, written to avoid ambiguity, concise, short and to the point, logical, with highlighted exceptions and warnings.

The literature review on the research question “What rapid damage procedures are being used by other fire departments or public agencies?” led to several fire department procedures being examined. Knoff (2009) refers to the rapid damage assessment under the purpose section of his procedure as allowing “...the Emergency Operations Center the ability to prioritize emergency responses, determine resources capable to respond, allocate resources, determine needs and request mutual aid, State and Federal aid” (p. 40). This was echoed by Drozd (2005) while Armstrong (2009), Kellen (2008) and Colantonio (2006) kept their purpose section much simpler. All three agree that the procedure is a guideline on how to perform the rapid damage assessment in their respective communities. The Hialeah Fire Department procedure has a “Situation and Assumptions” section (Drozd, 2005). In the situation section they state that Hialeah can experience disasters or hazardous events which can cause loss of life and property. The use of a rapid damage procedure will allow them to determine a prioritized response, which will assist in mitigating the impact of these events. Under the assumption section it explains that the city has the obligation to handle an event until it is determined to be beyond their capability. The rapid damage assessment will allow them to measure the impact of the event and allow a knowledgeable request for further assistance.

The Hialeah procedure includes a section called the *Concept of Operations* (Drozd, 2005). Here they have the duties of each community stakeholder, fire, police, public works, emergency operations center, and the rapid damage assessment task force. This is followed by the *Activation and Priorities* section, which states that the Fire Chief or his designee can activate the procedure, with a pre-staging of the task force when possible. Then the priorities are broken down into two phases. Phase I is a damage assessment of each station and facility as soon as the event allows. The assessment of personnel, equipment and facilities is considered a top priority

by Clay County Fire Rescue, Iowa City Fire Department, Larkspur Fire Department, Warwick Fire Department, Roanoke Fire –EMS Department and the Addison Fire Department (Armstrong, 2009; Colantonio, 2006; Grier, 2004; Kellen, 2008; Knoff, 2009; Sinnott, 2007).

Phase II for the Hialeah Fire Department is when the rapid damage assessment task forces are deployed to conduct a systematic assessment of their assigned sector. When Phase II completed the response unit will return to normal emergency operations (Drozd, 2005). All the other procedures reviewed, Clay County Fire, Roanoke Fire, Iowa City, Larkspur Fire, Warwick Fire, and Addison Fire, specify that they also follow pre-established routes when conducting their rapid damage assessments (Armstrong, 2009; Colantonio, 2006; Grier, 2004; Kellen, 2008; Knoff, 2009; Sinnott, 2007). Hialeah Fire, Clay County Fire, and Addison Fire have specific situations that would necessitate discontinuing the rapid damage survey. One is life threatening injuries or hazards that would affect large numbers of people and can be easily mitigated (Drozd, 2005; Kellen, 2008; Knoff, 2009).

Five of the procedures reviewed had specific forms that had to be completed by those conducting the rapid damage assessment, with a variety of titles. Hialeah uses *Damage Assessment Form*, Roanoke simply calls them an assessment worksheet form, Larkspur call theirs *Assessment Procedures and Reporting Documents*, Warwick and Iowa City use a *Rapid Damage Assessment Form*, and Addison calls theirs a *Windshield Survey Form* (Armstrong, 2009; Colantonio, 2006; Drozd, 2005; Grier, 2004; Kellen, 2008; Sinnott, 2007). Hialeah Fire and Clay County Fire were the only two procedures that required annual training and evaluation of their procedure (Drozd, 2005, Knoff, 2009).

Procedures

The purpose of this research was to develop a rapid or immediate damage assessment

procedure which will be presented to the Lake County Chief's Association for adoption by the county fire departments. This was accomplished primarily through the literature review, personal communications and surveys. This research began at the National Fire Academy (NFA) during the Executive Leadership course. Material was gathered at the Learning Resource Center (LRC) while on campus and later through on-line access. The search focused on keywords such as damage assessment procedure, mitigation, and rapid assessment. This resulted in numerous Executive Fire Officer (EFO) Applied Research Projects (ARPs) which were reviewed for relevant information. Other references were found through a search of the World Wide Web, including information from the FEMA, Ohio EMA, and the City of Los Angeles. The student manual from the EAFSOEM was another source of information. A personal conversation with Mel House, Operations Director for the Ohio EMA, (contacted January 21, 2010) provided information on the some of Ohio's capabilities for rapid damage assessment. The information in the Background and Significance portion of this research was found from a variety of sources including the National Climate Data Center, United States Geological Survey, City-data, Cincinnati Enquirer, and the Newsinferno.

Information available for this research was abundant, with numerous ARPs on rapid damage assessments. While many discussed creating a rapid damage assessment procedure and why one was needed, there was little evidence suggesting that the rapid damage assessments procedures were effective. Drozd (2005) and Knoff (2009), however, did mention in their research that other communities had experienced success with their rapid damage assessment because of prior planning and training.

In November 2010 a survey consisting of 10 questions (Appendix B) was developed using *Survey Monkey* to obtain demographics, rapid damage assessment procedures, and rapid

damage assessment knowledge of the 16 Public and 1 Private Fire Departments in Lake County. The survey was sent to all 17 departments and had 14 responses for a return rate of 82.35%. A second survey (Appendix C) of 7 questions was sent out in December of 2010 to get additional direction from the area departments for a rapid damage assessment procedure. This was sent to the 17 departments and received 13 responses for a return rate of 76.47 %. The questions were based on information found in the rapid damage procedures during the literature review. The responses were used as a basis for developing a rapid damage procedure that could be used both in the City of Mentor and regionally.

There were several limitations in this research project. First the survey was only to Lake County fire departments, and the procedure is for the local departments. With the Emergency Management Assistance Compact (EMAC) one would think that there would be a nationwide basic standard procedure for rapid damage assessment. Second, the survey results indicated that area fire departments would prefer a task force comprised of fire, emergency medical services (ems), police, and public works for conducting a rapid damage assessment. Because the surveys were limited to Fire Departments, there needs to be more involvement and input from Law Enforcement and Public Works.

Definitions:

“Lake Effect” snow – the result of cold, dry arctic air picking up moisture from Lake Erie and deposits the moisture, in the form of snow, over land. This may produce a heavy snowfall, of 6” per hour (Mitchell, S., 2008).

Snowbelt – an area in northeast Ohio that runs east from the eastern suburbs of Cleveland to the Pennsylvania line affected by “Lake Effect” snows (Mitchell, S., 2008).

Recon – an abbreviation of reconnaissance.

Results

The research for this project consisted of a literature review, personal communications and 2 surveys (Appendix C & D) sent to Lake County fire departments. The surveys were sent to 17 Lake County departments. Fourteen departments responded in the first survey, which is a return rate of 82.35%. The second survey had 13 responses for a return rate of 76.47%. The surveys produced information that was used to answer the research questions.

The first survey question was: What information or criteria needs to be included in a rapid damage assessment procedure? Several sources, EAFSOEM, Emergency Management Institute (EMI), and Applied Research Projects, have contributed to create a comprehensive list of criteria. The procedure needs to have who, what, when, and where. The EMI (1995) determined the following should be included: Development of a community profile, Division of the community into sectors, Risk assessment by each sector, A communication plan, Personnel and resources required, Training and evaluation of the procedure.

The results of survey questions #4, #5, and #7 from Survey 2 (Appendix D) show that the departments in Lake County would like a task force deployed for conducting a rapid damage assessment, with annual countywide training. The results from questions #8 and #9 in Survey 1 (Appendix C) indicates that there is a need for training on developing the community profile and risk assessment criteria for these communities.

The second survey question was: In what format should the procedure be written? The literature review found there are 4 basic types of procedures: Simple steps, Hierarchical Steps, Graphic Format, and Flowchart. Which type one uses is dependent on 2 factors; 1) What type of decisions, 2) How many steps and sub-steps. A procedure with few decisions and short will be Simple Steps, one with 10 or more steps could use either the Hierarchical or Graphic format,

while those with numerous decisions should be in the Flowchart format (Stup, 2001).. Wilson (n.d.) recommends that each department use a standard easy to use template for writing your procedure. The procedure should be short, written in plain English, logical, with highlighted exceptions and warnings (Walsh, 2010).

The third research question: What procedures are being used by other fire departments or public agencies? These ranged from long in depth procedures such as the one for Hialeah Fire Department (Drozd, 2005) to a simple 1 page procedure used by Roanoke Fire Department (Armstrong, 2009). No procedures were identical to another. They all have the same basic criteria and there is a definite need to have a standardized form for reporting data from the rapid damage assessment. The City of Los Angeles (1998) starts with a report from each department on the extent of damage to facilities, ability to respond, welfare of the personnel, and if assistance is required. The EAFSOEM (2009) manual also recommended obtaining condition of fire stations, the condition of personnel and apparatus, and the same for police and public works.

As for Lake County departments 50.00% of the respondents' state they use a rapid damage assessment. A follow up email was sent out asking if any department had a written rapid damage procedure of which there were zero responses. This verifies the verbal informal survey conducted during a meeting of the Lake County Chiefs of Fire in January 2010. When asked what are the components of a rapid damage assessment 85.7% answered assessment of life safety threats to the general public and utilities, 78.6% felt assessment of buildings structural stability and assessment of roads were components, 64.3% stated assessment of special facilities (nursing home, schools), 57.1% choose assessment of fire department infrastructure (stations, personnel, apparatus) a component, and 42.9% felt assessment of police infrastructure and assessment of hazardous materials were components. In the responses on how they would conduct a rapid

damage assessment, 92.9% indicated they would use a windshield survey, 57.1% would assess damage by foot patrol, 21.4% would utilize media or government agencies aircraft, 14.3% would use private sector aircraft, and 7.1% would utilize the media.

When asked who would conduct a rapid damage assessment in their community 92.9% responded that it would be fire department personnel, 57.1% included building department and public works personnel, 42.9% police department personnel, 14.3% had an urban search and rescue team, and 7.1% used private citizens. The survey question; does their department have the resources, personnel and training to properly conduct a rapid damage assessment within 3 hours, 23.1% said yes with on duty, call-back personnel, and mutual aid, 23.1% said no because of not enough personnel, resources, or training, 15.4% felt they could handle it with on duty and call-back personnel, 7.7% stated they could conduct the assessment with on duty personnel and mutual aid. When asked if they could conduct the assessment when many of the major roads are impassable 84.6% stated no, while 15.4% stated they could. They were surveyed as to what other resources and personnel would be able to assist in their community, 91.7% indicated public works, 75.0% stated the police department, 66.7% include the building department, 25.0% stated they could have parks and recreation, and 16.7% had indicated other.

When presented with the statement; a rapid damage assessment is to be completed prior to responding to calls for service with few exceptions i.e. life threatening injuries and hazards posing danger to large number of persons and can be immediately mitigated. The survey group was asked if this should be the standard for the Lake County procedure. Forty-six point two percent said yes, 38.5% were not sure, and 15.4% answered no, it should not be part of the procedure.

A draft copy of a standard operating procedure for conducting a rapid damage assessment

(Appendix A) was produced using the information from this research. Appendix B is a draft tactical worksheet that could be used for gathering the data from a rapid damage assessment. Appendix C is the first survey questionnaire and Appendix D is the second survey questionnaire used for this research.

Discussion

The City of Mentor and the County of Lake is located on the shores of Lake Erie, in the Snowbelt, dissected by two major highways, two transcontinental railroads, has a active harbor/port area, and in the greater Cleveland area, and has already experienced several natural and man made disasters.

It is apparent that a rapid damage assessment procedure is needed to provide the community leaders the information to determine the scope and most effective course of action for mitigation of the disaster event. Most of the sources recommend the first responder, fire, police, and public works to perform this rapid damage assessment as soon as possible (FEMA, 2009; City of Los Angeles, 1998; Collins, 2003). The rapid damage assessment procedure needs to provide for a systematic triage of the community. This is to ensure all areas of the community are covered as determined by the community profile, and risk assessment of each response area (EMI, 1995). This may be accomplished by driving, walking, or flying to a designated geographical area (FEMA, 2009). The procedure should also include a communication plan, in a large scale event normal communication systems could be compromised and the dispatch center would likely be overwhelmed by the calls for assistance (EMI, 1995).

The first units or responders will be doing recon or a triage of the area and must not engage in rescue operations (FEMA, 2009). While two sources stated this, it may be difficult to

perform a rapid damage assessment because of the need to engage in tactical operations (EAFSOEM, 2009, Collins, 2003). This should not have been an issue for the City of Mentor and the rest of the fire departments in Lake County, since they use a County SOP for a mass casualty incident. All departments have their own emergency medical service and it is standard practice to triage for mass casualty incidents. In the first survey (Appendix C) it appeared that departments in Lake County realized that a rapid damage assessment is a triage of the community. While in the second survey (Appendix D) only 46.2 % agreed that the assessment is completed prior to responding to calls for service with few exceptions. The need for training is apparent from the surveys and triage would be a new skill that other first responders (police, public works) would need to learn. If a rapid damage procedure was adopted by the county, communities that are not affected by the event would be able to assist, much like the Mutual Aid Box Alarm System (MABAS). This assistance could be as additional recon or as responders for rescue operations.

The procedure for a rapid damage assessment needs to be formatted or written in a manner that it is in plain English, logical, short, to the point, with highlighted exceptions and warnings (Walsh, 2010). The procedure should be formatted using the current template used by the Lake County Fire Departments for their county-wide procedures. A form or tactical worksheet could be used to obtain information on the general populous (life safety threat), critical facilities (fire, police stations, shelters), utilities, special facilities (nursing homes, schools), roads, and hazardous materials (EAFSOEM, 2009, EMI, 1995).

For the procedure to work each department will need to profile the potential risks of these criteria in the community so when an event occurs they will know specific areas and target they need to recon (EAFSOEM, 2009). They will have to be trained on how to evaluate damages

depended on which system the City of Mentor adopts. This should be consistent with what is adopted by the county and by the state. The State of Ohio currently recommends using a 4 category rating system (Ohio EMA, 2006). All possible first responders who may be tasked with doing a rapid damage assessment should be involved in disaster exercises; this will allow them to use the skills necessary for when the real event occurs (FEMA, 2006).

The information obtained from personal observance and the EAFSOEM course indicates that the City of Mentor needs a rapid damage assessment procedure. This procedure will be a valuable asset to the whole county. When a rapid damage assessment is conducted by trained responders, looking at the same criteria, it will provide valuable information. This information will allow community leaders to make informed and timely requests for resources and be able to allocate the existing resources to lessen the loss of life and property (EAFSOEM, 2009).

Recommendations

Based on the results of this Applied Research Project, the following recommendations are for producing a rapid damage assessment procedure for the City of Mentor and all the Lake County communities.

The rapid damage procedure must have criteria that allow the personnel, a rapid damage task force, to perform a systematic triage of their designated area. This triage will be based on a community profile, which includes the criteria presented by the EMI in 1995. Prior to the triage the Incident Command needs to be updated on the status of the personnel, apparatus, and facilities. This needs to occur immediately, as soon it is safe, as after an event this information will allow the Incident Command to make educated decisions on additional resources that may be required to perform the rapid damage assessment. The procedure will need direction on how to communicate information back to Incident Command, as normal communication means will

likely be disrupted, and dispatch will be overwhelmed with calls for assistance.

The procedure will be written in the current format of county wide procedures being used by the Lake County Fire Departments. It will also include a form or tactical worksheet where the data from the rapid damage assessment is recorded. The procedure is to be written short and to the point, in plain English, logical, with highlighted exceptions and warnings.

The draft procedure (Appendix A) produced by this research will be evaluated by the Mentor Fire Department. After this evaluation it will be presented to the City of Mentor's EOC group for adoption. It will also be presented to the Lake County Chiefs of Fire, the Lake County Police Chiefs Association, the Lake County Sheriff's Department, The Lake County Commissioners and the Lake County City Managers and Mayors Association. Once the final draft is approved it will be tasked to the Lake County Fire Training Officers Group, who will oversee the procedure implementation, and initial field training. They will also be tasked with setting up the annual training and evaluation of the rapid damage assessment.

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Appendix A

**LAKE COUNTY FIRE DEPARTMENTS
Standard Operating Guidelines**

<p>RAPID DAMAGE ASSESSMENT (Draft)</p>	<p>SOG: Draft Effective: December 16, 2010 Supersedes: Approved: _____ President, LCACF Page: 1 OF 5</p>
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.10 PURPOSE:

.11 To establish a guideline for conducting a rapid damage assessment following a major incident or disaster.

.20 DIVISIONS AFFECTED:

.21 All Fire Department personnel.

.22 All Police Department personnel.

.23 All Public Works personnel.

.24 Communications personnel

.30 RESPONSIBILITY:

.31 All officers are responsible to comply with and ensure that personnel under their command are adequately trained, fully understand and comply with the procedures outlined within this policy.

.32 All members have a responsibility to adequately learn and comply with this policy.

.33 The Communications Coordinator is responsible to ensure that all dispatchers are adequately trained in and conform to this Guideline.

.34 It will be the responsibility of the highest ranking Fire Department Officer on duty to make the determination, when the need for implementation of this Guideline. The basic procedure outlined in this Guideline is applicable to all major incidents or disasters and will be routinely used in such incidents.

.40 PROCEDURE:

.41 Response during the event:

- A) **During period of eminent danger, (i.e. funnel clouds, sustained winds > 50 mph) all personnel are to shelter in place of their respective facilities until the immediate danger is past.**
- B) **If personnel are caught out “on the air”, exercise sound judgment to avoid danger, seek appropriate shelter. When safe return to quarters and assess for damage.**
- C) Maintain communications and update status with dispatch.
- D) The Emergency Operations Center (EOC) shall be activated.

.42 Immediately after the event:

- A) Report status of all personnel (injuries or fatalities), and any damage to apparatus, equipment and facilities that will hinder response capabilities to the on-duty Battalion Chief.
- B) All emergency calls for service will be assigned by the on-duty Battalion Chief until the EOC is operational. Once the EOC is staffed, the fire department representative will be responsible for assigning responding units.
- C) Each of the city’s fire stations will deploy a Rapid Damage Assessment Task Force (RDAT). When possible, RDAT’s will be positioned prior to the event. RDAT’s should comprise of the following minimum units and personnel:
 1. 1-Fire Engine w/ 2 persons minimum
 2. 1-Ambulance w/ 2 persons minimum
 3. 1-Police unit w/1 person minimum
 4. 1-Front end loader w/ 1 operator
- D) RDAT’s will be deployed to clear emergency response corridors and perform a preplanned systematic assessment of their assigned response area. The assessment will be completed before resuming normal emergency response operations.
Exceptions are only life threatening hazards posing danger to a large number of persons, which can be immediately mitigated.
- E) All Information will be reported on the Rapid Damage Assessment Form.
- F) Upon completion of the assessment of their assigned area, each RDAT will forward the information to the EOC.

Standard Operating Guideline (Draft)

Rapid Damage Assessment

Rapid Damage Assessment Form

Date/Time: _____
 Location: _____

Station/Unit: _____
 Officer: _____

Assessment of personnel, equipment, and facilities (circle/note as indicated)
This information must be relayed to Incident Command prior to deploying for the rapid damage assessment

- 1) Personnel
 - a) No Injuries
 - b) Minor Injuries # _____
 - c) Major Injuries # _____
 - d) Fatalities # _____

- 2) Primary Apparatus
 - a) In service and available
 - b) In service with slight delay due to blockage and/or damage
 - c) Out of service but repairable
 - d) Out of service not repairable

- 3) Fire Station
 - a) No Damage
 - b) Utilities functioning / not functioning (circle one)
 - c) Minor damage but habitable
 - d) Major damage not habitable

- 4) Overall status
 - a) Available and initiating the rapid damage assessment
 - b) Tending to personnel injuries with delay in assessment
 - c) Significant delay expected due to station or apparatus damage
 - d) Out of service/unable to respond

Notes/additional resources required/general observations:

Standard Operating Guideline (Draft)

Rapid Damage Assessment

Rapid Damage Assessment Form

Date/Time: _____ Station/Unit: _____
 Location: _____ Officer: _____

Rapid Damage Assessment of primary response area (check and note as indicated)

Life Safety Operations:	Confirmed #	Reported Not Confirmed	Location
• Trapped	_____	_____	_____
• Dead	_____	_____	_____
• Injured	_____	_____	_____
• Evacuation Need/Status	_____	_____	_____

Status of Lifelines:	Functioning	Not Functioning
• Electricity	<input type="checkbox"/>	<input type="checkbox"/>
• Gas	<input type="checkbox"/>	<input type="checkbox"/>
• Sewer	<input type="checkbox"/>	<input type="checkbox"/>
• Water	<input type="checkbox"/>	<input type="checkbox"/>
• Telephone	<input type="checkbox"/>	<input type="checkbox"/>

Status of Roads: List roads/details

Open	
Blocked w/debris	
Minor Damage Use with caution	
Destroyed Impassable	

Imminent Hazards observed/description: _____

TALLY WORKSHEET
 (Follow the Ohio EMA Field guidelines)

Destroyed:		Major:	
SF		SF	
MH		MH	
BUS		BUS	
Total:		Total:	
Minor:		Affected:	
SF		SF	
MH		MH	
BUS		BUS	
Total:		Total:	

SF – Single Family

MH – Mobile Home

BUS - Business

Notes:

Appendix B

Rapid Damage Assessment Survey

1) How is your department staffed?	Response Percent	Response Count
Career	14.3%	2
Part-time	14.3%	2
Combination Career/Part-time	64.3%	9
Volunteer	7.1%	1
Combination Career/Volunteer	0.0%	0
Combination Part-time/Volunteer	0.0%	0
Other	0.0%	0
2) Minimum shift manning of your fire department?	Response Percent	Response Count
0 – 4	35.7%	5
5 – 10	42.9%	6
11 – 15	7.1%	1
16 – 20	0	0
Greater than 20	14.3%	2
3) Who in your community is responsible for emergency management?	Response Percent	Response Count
Fire Chief	78.6%	11
Other Fire Officer	0	0
Police Chief/Sheriff	0	0
Other Police Officer	0	0
City Manager/Mayor	21.4%	3
Other	0	0
Not sure	0	0
4) Does your department use a rapid damage assessment following a large scale incident or disaster?	Response Percent	Response Count
Yes	50.0%	7
No	42.9%	6
Not Sure	7.1%	1

5)	If you answered yes to Question #4, who is responsible that a rapid damage assessment is conducted?	Response Percent	Response Count
	Fire Chief	28.6%	2
	Other Fire Officer	0	0
	Fire Personnel	28.6%	2
	Police Chief/Sheriff	0	0
	Other Police/Sheriff Officer	0	0
	Police/Sheriff Personnel	0	0
	Building Department Officials	14.3%	1
	Other	14.3%	1
	Not Applicable	14.3%	1
6)	When should a Rapid Damage Assessment of an incident be started?	Response Percent	Response Count
	Immediately after the event	100.0%	13
	4 to 8 hours after the event	0	0
	8 to 12 hours after the event	0	0
	12 to 24 hours after the event	0	0
	24 to 72 hours after the event	0	0
	After 72 hours	0	0
	Not sure	0	0
7)	Who in your community would conduct a rapid damage assessment? (Select all that apply)	Response Percent	Response Count
	Fire Department Personnel	92.9%	13
	Police Department Personnel	42.9%	6
	Building Department Personnel	57.1%	8
	Public Works Personnel	57.1%	8
	Red Cross	0	0
	Private Citizens	7.1%	1
	Urban Search and Rescue Team	14.3%	2
	Other	0	0

8) What are the components of a Rapid Damage Assessment? (Select all that apply)	Response Percent	Response Count
Assessment of life safety threats to the general public	85.7%	12
Assessment of Fire Department Infrastructure (stations, personnel, apparatus)	57.1%	8
Assessment of Police Infrastructure	42.9%	6
Assessment of Special facilities (Nursing homes, schools)	64.3%	9
Assessment of utilities	85.7%	12
Assessment of roads	78.6%	11
Assessment of hazardous materials	42.9%	6
Assessment of building structural stability	78.6%	11
Other	7.1%	1
9) How would your community conduct a rapid damage assessment? (Select all that apply)	Response Percent	Response Count
Windshield Survey	92.9%	13
Assess damage by foot patrol	57.1%	8
Utilize private sector aircraft	14.3%	2
Utilize media aircraft	21.4%	3
Utilize media (TV, Radio)	7.1%	1
Utilize government agencies aircraft	21.4%	3
Other	0	0
10) What are the primary benefits of a rapid damage assessment? (Select all that apply)	Response Percent	Response Count
Allows an Incident Commander to make informed decisions	85.7%	12
Helps determine what resources are needed	92.9%	13
Is a triage of the community	92.9%	13
Give information on the degree of damage for area homes and businesses	78.6%	11
Other	21.4%	3

Appendix C

Rapid Damage Assessment Survey Part 2

1) In the first survey 93% of the respondents stated that Fire Department Personnel will conduct the rapid damage assessment.			
Does your department have the resources, personnel and training to properly conduct a rapid damage assessment within 3 hours		Response Percent	Response Count
With on duty personnel		0	0
With on duty and call-back personnel		15.4%	2
With on duty personnel and mutual aid		7.7%	1
With on duty, call-back personnel, and mutual aid		23.1%	3
Not enough personnel		0	0
Not enough resources		7.7%	1
Not enough training		23.1%	3
Not enough personnel, resources, or training		23.1%	3
2) If a large scale incident or disaster occurred today, which resulted in Interstate 90, State Route 615, 91, 306, 283 (Lakeshore Blvd.), 44, 2, 20, 86, and 84 to be impassable does your department have the adequate personnel, resources and training to perform a rapid damage assessment in 3 hours?			
		Response Percent	Response Count
Yes		15.4%	2
No		84.6%	11
3) What other resources or personnel would be able to assist in conducting a rapid damage assessment in your community?			
		Response Percent	Response Count
Police Department		75.0%	9
Public Works		91.7%	11
Parks and Recreation		25.0%	3
Building Department		66.7%	8
Other		16.7%	2

4) There are various thoughts on who should perform the rapid damage assessment. One is it will be performed by fire department personnel, two it will be performed by public safety forces, third a task force (Fire & EMS, Police, Public Works) is deployed to each sector who then performs the assessment. Who do you think should be the standard in Lake county for conducting a rapid damage assessment?	Response Percent	Response Count
Fire Department Personnel	15.4%	2
Public Safety Forces	23.1%	3
Task Force consisting of Fire, EMS, Police, and Public Works	61.5%	8
Other	0	0
5) Once a procedure for a rapid damage assessment has been established, how often should training and a review of the procedure be conducted?	Response Percent	Response Count
Every 6 months	0	09
Annually	100.0%	13
Every 18 months	0	0
Other	0	0
6) When conducting a rapid damage assessment it is recommended that the assessment be completed prior to responding to calls for service with few exceptions i.e. life threatening injuries and hazards posing danger to large number of persons that can be immediately mitigated. Should this be the standard for a Lake County procedure for conducting a rapid damage assessment?	Response Percent	Response Count
Yes	46.2%	6
No	15.4%	2
Not Sure	38.5%	5
7) How would you like to see training on a rapid damage procedure?	Response Percent	Response Count
Your Department Only	0	0
Your Department plus immediate neighbors	0	0
County wide training	92.3%	12
Some combination of the previous choices	7.7%	1