RAPID SITUATIONAL/DAMAGE ASSESSMENT PROCESS FOR MAJOR EMERGENCIES AND DISASTERS OCCURING IN NASHUA NH

Executive Analysis of Fire Service Operations in Emergency Management

By:

Investigator Richard W. Wood Fire Marshal's Office Nashua Fire Rescue Nashua NH 03062

An applied research project submitted to the National Fire Academy as part of the Executive Fire Officer Program

October 2003

Appendices C through F 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.

ABSTRACT

The Nashua Emergency Operations Plan (NEOP) identified several agencies as having responsibility for "situational assessment". It further identified one of the immediate stabilization actions as conducting initial damage surveys. The problem was, a formalized process for situational/damage assessment in Nashua, NH had not been developed. The purpose of this research was to develop a formalized rapid (initial) situational/damage assessment process for Nashua, New Hampshire. The author used an action research methodology to answer the following research questions. Are agencies currently responsible for collection, collation, or dissemination of situational/damage assessment data in Nashua NH appropriate? What phases of assessment are needed? What and how data should be collected, collated, and disseminated.

The author reviewed governmental publications, recognized training manuals, and journal articles. In addition, a survey (Appendix B) of 80 organizations was conducted to gather information about other organization's structure, population served, operation, and effectiveness regarding their damage assessment efforts. Interviews were conducted of key figures in the City of Nashua and State of New Hampshire Offices of Emergency Management.

The results of this research indicate in addition to current agencies, the Building Safety, Information Technology, and Code Enforcement Departments should play a role in the damage assessment process. Research further indicates there are three phases of the damage assessment process; Initial, Interim, and Final . Data must be collected relating to life safety, lifelines, essential facilities, access routes, imminent hazards, major

problems, and resources. Systemization of data collection, collation, and dissemination are needed to create consistency and efficiency.

Based on the results of this Research the following are recommended:

- Nashua adopts the draft proposal (Appendix A), Rapid Damage Intelligence Form (Appendix C), Situation Report Form (Appendix D), and changes to ESF-5 of the Nashua EOP titled Disaster Planning & Intelligence. (Appendix F)
- 2. Nashua Fire Rescue Administration adopts the draft Standard Operating Guideline titled Disaster Damage Intelligence.(Appendix E)

TABLE OF CONTENTS

ABSTRACT	ii
INTRODUCTION	1
BACKGROUND AND SIGNIFICANCE	1
LITERATURE REVIEW	3
PROCEEDURES	
RESULTS	
DISCUSSION	
RECOMMENDATIONS	
REFERENCES	
Appendix A (Proposal)	
Appendix B (Survey)	
Appendix C (Rapid Damage Intelligence Form)	
Appendix D (Nashua Situation Report Form)	
Appendix E (Draft SOG)	
Appendix F (NEOP ESF-5 Update)	

TABLE OF FIGURES

FIGURE 1 (Survey Results)	
---------------------------	--

INTRODUCTION

The City of Nashua Emergency Operations Plan identifies several agencies as having responsibility for "situational assessment" during a major emergency or disaster. It further identifies one of the immediate stabilization actions to be conducting initial damage surveys. The problem is, a formalized process for situational/damage assessment during major emergency and disaster incidents in Nashua, NH has not been developed. The purpose of this research is to develop a formalized rapid (initial) situational/damage assessment process in Nashua, New Hampshire. An action research methodology will be utilized to answer the following research questions:

- Are the agencies currently responsible for collection, collation, or dissemination of local situational/damage assessment data in Nashua NH appropriate?
- 2. What phases of situational/damage assessment are needed to effectively manage major emergencies or disasters?
- 3. What data should be collected during situational/damage assessment?
- 4. How should collection, collation, and dissemination of all local situational/damage assessment data during major emergencies and disasters in Nashua NH occur?

BACKGROUND AND SIGNIFICANCE

The background of the problem for this applied research project originates from the lack of a formalized process of rapid/initial situational/damage assessment for use during major emergencies and disasters within the City of Nashua, NH. In the past, situational/damage assessment was not thought of as part of an overall response protocol for major emergencies and disasters in the City of Nashua. When multiple agencies responded, there was often an unorganized effort that centered on the independent needs for each organization, instead of the overall needs of the city. Each agency handled only their normal areas of responsibility, which lead to unorganized and inefficient utilization of resources, inconsistent techniques and terminology, and a duplication of effort. It often would take twice the resources to accomplish the mission of damage assessment often with inaccurate data. All of this leads to a delay in acquiring needed resources to aid in the mitigation and recovery of large-scale incidents.

Currently, leadership of Nashua's Emergency Preparedness organization is shared between the Assistant Fire Chief and a Police Sergeant. This has created greater understanding and cooperation between the two organizations, which has increased efficiency and decreased duplication. The Emergency Operations Plan updated in January 2003 identifies Nashua Fire Rescue and several other agencies as having responsibility for obtaining "situational assessment". Unfortunately, it does not provide a system by which consistent results can be obtained in collection, collation, and dissemination of this data.

The future impact of this research will be an identification of areas of vulnerability in the situational/damage assessment process. Additionally, development of a systemized approach will increase efficiency and add credibility to the results of situational/damage assessments conducted in the City of Nashua. Ultimately, the creation of a multi-jurisdictional data collection process will enhance the communication and

relationship between all agencies and yield a more comprehensive and accurate assessment of impact and needs.

This research project addresses many of the units of the National Fire Academy Executive Fire Service Operations in Emergency Management course. Specifically, this research will develop a process "to obtain and use damage assessment information both during the active phase of an incident and for post incident activities." (NFA 2001, SM 8-3) Current capabilities regarding damage assessment will be evaluated and capability shortfalls identified (NFA 2001, SM 6-1).

A thorough and competent situational/damage assessment is one component used to identify hazards, risk, and needs during a major emergency or disaster incident response. Without this data, it is virtually impossible for any fire service organization to assign resources in the most efficient manner, which promotes comprehensive risk reduction during major emergency or disaster incidents. This research project applies directly to the United States Fire Administration objective "To promote within communities a comprehensive, multi-hazard risk-reduction plan led by the fire service organization" (NFA 2001, p. II-2).

LITERATURE REVIEW

"Of all the functions performed after a disaster, there are perhaps none more important than damage assessment" (McEntire 2002, p.9). The ability to perform "local situational (rapid) assessment accurately" and early in a large-scale emergency is critical to providing an adequate response to protect life and mitigate hazards (EMI 1995, p. FGiii). The Incident Commander and those involved in the EOC need a clear understanding of the extent of damage and the number of people and buildings affected in order to anticipate community needs. "Property damage may be a lot worse than it appears-or nowhere near as bad. In the immediate aftermath, the verdict hinges on proper assessment" (Moore 1996, p.17). According to the facilitators guide to *Rapid Assessment Planning Workshop in Emergency Management (WEM)*, "Correct and effective assessments permit local governments to prioritize response activities, allocate scarce resources, and request mutual aid and specific State and Federal assistance quickly" (EMI 1995, FG-I-2).

The City of Nashua Emergency Operations Plan (NEOP) is adopted under authority of Chapter 107 of the NH Revised Statues Annotated (Nashua 2003, Part I, 1.0, p. 2). The NEOP purpose states that the plan is "designed to coordinate all local government and community resources to ensure an effective, rapid, and sustained emergency management response (Nashua 2003, Part I, 1.0, p. 1)."

The NEOP outlines a centralized command, control, direction, and coordination philosophy. The Management Element, part II of the NEOP, outlines the Planning Section of the Directional and Control Function of the City Emergency Operations Center (City EOC) as having responsibility to "collect, assess, track, plot, and brief emergency management staff on situational data/status" (Nashua 2003, Part II, ESF-1-7). The NEOP further assigns these tasks related to damage assessment to the Situation Analysis Unit (SAU) within the planning section (Nashua 2003, Part II, ESF-5-2).

FIRESCOPE in its publication *Fire Service Field Operations Guide ICS420-1* assigns the Situation Unit as a subsection of the Planning Section. It further states the situation unit is responsible for "the collection, processing and organization of all

incident information. The situation unit may prepare future projections of incident growth, maps and intelligence information" (FIRESCOPE 2001, p. 7-7)

The Nashua EOP Response Operations Element, part III outlines the following agencies as having responsibility to "obtain situational assessment" (Nashua 2003, Part III):

- Nashua Police Department
- Nashua Fire Rescue Department
- Nashua Public Health
- Nashua Environmental Health
- American Red Cross-Nashua Chapter
- Nashua Welfare Department
- Nashua Public Works
- Nashua Office of Emergency Management

The Facilitator's Guide to *Rapid Assessment Planning Workshop in Emergency Management (WEB)*, further corroborates both the participation and centralization outlined in the EOP. "Depending on the time of the incident and the amount of warning, it (rapid assessment) may initially include personnel from law enforcement, Fire, and Public Works." "Rapid assessment must have a leader...assigned to manage and report the data and prepare documentation necessary for continuing response operations" (EMI 1995, FG-I-4).

According to the student manual for Executive Analysis of Fire Service Operations in Emergency Management, "An immediate damage assessment is started by the first unit on the scene making a rapid visual assessment of conditions" (NFA 2001, p. SM8-5) "Immediate damage assessment for large areas...can be done by fire companies on the basis of the company response area or district" (NFA 2001, p. SM 8-7)

The *Damage Assessment Annex* of the City of Los Angeles Emergency Operations Master Plan and Procedures (LA EOP) states, "the police department, along with the fire department are the first responders in a disaster and are the primary source of initial disaster intelligence information" (Los Angeles 1998, p. 8). It further outlines "the Planning and Intelligence Section of the EOC as responsible for capturing all disaster-related information, including damage assessment information (Los Angeles 1998, p. 8).

In summary, many organizations within City government are responsible to "obtain situational assessment" information. The planning section of the City EOC is responsible for the centralized collation, to analyze, and disseminate situational/damage assessment data in the City of Nashua.

Any operation goes through phases/stages, which are interrelated yet separate and distinct. The NEOP identifies "four distinct yet interrelated phases", Preparedness, Response, Recovery, and Mitigation as "universally recognized…as the primary stages of managing emergency management activities" (Nashua 2003, Part I, 2.0, p. 3).

The Asian Disaster Preparedness Center (ADPC) in it's publication *Post-Disaster Damage Assessment & Needs Analysis* states "relief operations are, in essence, the management of information and resources, based on assessments and report" (ADPC 2000, p 2). Baseline data such as maps, population statistics, etc. must be accessible to compare situational/damage assessment data. ADPC sates there are essentially two types of assessment: Situational/damage assessment is "a description of what has happened; and Needs assessment is a "statement of what needs to be done" (ADPC 2000, p 2).

ADPC uses four types of reports to provide information (ADPC 2000, p 2-3):

- <u>Flash Reports</u> are (immediate) confirmatory reports that a disaster/largescale incident has occurred and what steps are being taken;
- <u>Initial Reports</u> are to relate the severity and coping capacities related to the incident;
- <u>Interim Reports</u> provides additional and more precise information including potential problems, changes/patterns/trends, and special concerns. These reports are submitted at least every 24 hours;
- <u>Final Reports</u> are a summary of what happened, how the response was managed, and lessons learned.

"With Flash and Initial Assessments, speed of reporting is more important than precise figures" (ADPC 2000, p.5).

According to *Understanding and Improving Damage Assessment* there are three phases or types of damage assessment. The first phase is a rapid or initial damage assessment. This phase is "undertaken to quickly comprehend the scope of the devastation. This usually involves the collection of data regarding deaths and injuries as well as the number of buildings destroyed or partially damaged" (McEntire 2002, p. 9). The second type of assessment is a preliminary damage assessment. This phase is complete with "state and federal emergency management officials for the purpose of obtaining a presidential disaster declaration. This assessment examines the extent of losses and determines the status of property in terms of safety, sanitation and security concerns" (McEntire 2002, p.9). The last type is a technical damage assessment. This report is a continuation of the second report only more in-depth. This type of assessment "is performed on structures and infrastructure to view engineering issues in an in-depth manner. It is conducted to estimate or verify the costs of the disaster and recommend the best approach for repairs, demolition and reconstruction" (McEntire 2002, p. 9).

The Los Angeles *Emergency Operations Master Plan and Procedures: Damage Assessment Annex* "recognizes the need for four overlapping phases or elements of damage assessment: Disaster Intelligence, Damage Safety Survey, Detailed Safety Survey, and Recovery Assessment" (Los Angeles 1998, p. 3). It further defines these phases as:

- "Disaster Intelligence Quick assessment of Critical Facilities and General Area Survey, or Where do we have problems?
- Damage Safety Survey Windshield survey to develop an estimate of the numbers, types and degree of damage and an initial estimate of the dollar loss.
- Detailed Safety Assessment Detailed safety survey of damaged structures and facades by qualified inspectors.
- Recovery Assessment Coordinate the reconstruction of damaged and destroyed facilities" (Los Angeles 1998, p 6).

The National Fire Academy in the student manual for *Executive Analysis of Fire Service Operations in Emergency Management* (EAFSOEM) states there are only two types of damage assessments: immediate and post incident. "Immediate damage assessment is a rapid estimate of damage", made on initial arrival, "at a specific incident site or within an incident area." "Post incident damage assessment is a detailed examination and analysis of the total damage at a specific incident or within an incident area" (NFA 2001, SM 8-3).

In summary, "if officials responsible for organizing post-disaster relief operations are to make effective decisions...it is essential that they be properly informed" (ADPC 2000, p 2). It is further evident that there are multiple phases to any incident and information needed for each phase varies from phase to phase.

Damage/situational assessment data can easily become overwhelming. This begs of the question, what data should be collected at what time during the incident? The *Rapid Assessment Planning Workshop in Emergency Management (WEM) Facilitators Guide* identifies seven major categories of information that must be included in a rapid assessment (EMI 1995, FG-III-2);

- Life safety information
- Status of lifelines
- Status of essential facilities
- Access routes
- Status of imminent hazards
- Descriptions of major problems
- Status of resource utilization and request for assistance

Each major category is further defined into the sub categories outlined below, according to *The Rapid Assessment Planning Workshop in Emergency Management* (WEM) Facilitators Guide : Life safety information includes (EMI 1995, A-1);

- Number of people potentially affected, by location
- Number dead
- Number injured
- Rough estimates of displaced persons
- Collapses requiring search and rescue
- Evacuation concerns (ie, food, water, shelter)

Status of lifelines includes (EMI 1995, A-1);

- Status of transportation systems
 - Access points to the disaster area
 - Mass transit systems
 - Railroad
 - Airport
 - Bridges
 - Roadways
 - State
 - Local
 - Designated evacuation routes
- Status of communication system
 - Local phone systems
 - Long distance phone service
 - Cellular phone system
 - Cable television system

- Radio
- Status of other systems
 - Gas
 - Electric
 - Water
 - Sewer

Status of Facilities (EMI 1995, A-2);

- Status of operating facilities
 - Fire stations
 - Police stations
 - City hall
 - EOC
 - Public works/utility yards
 - Dispatch centers
- Status of television and radio stations
- Status of hospitals and other major medical facilities
- status of mass care facilities
- Status of schools

Status of imminent hazards (EMI 1995, A-2);

- Local weather conditions affecting operations
- Current or potential long-term health hazards
- Areas within the impacted area that can support response efforts
- Refinery/bulk storage/pipeline facilities

- Dams and levees
- Hazardous material facilities

Description of major problems by sector (EMI 1995, A-3);

- Hazard specific information
- Uncontrolled fires

Resource utilization and requests for assistance (EMI 1995, A-3);

- Resource shortfalls (government)
- Status of local personnel and equipment
- Mutual aid resource availability

According to the *Post-Disaster Damage Assessment and Needs Analysis* by the Asia Disaster Preparedness Center, the following nine areas may need to be reported on (ADPC 2000, 5):

- Search and Rescue
- Evacuation
- Protection
- Medical and Health
- Shelter and Clothing
- Food
- Water
- Sanitation
- Lifeline systems

According to the National Fire Academy in the student manual for *Executive* Analysis of Fire Service Operations in Emergency Management (EAFSOEM), "immediate damage assessment should answer the following questions:

- Have deaths or injuries occurred?
- Does the potential for loss of life or injury exist?
- Have unsafe conditions been created?
- Is there a need for emergency services?
 - What type?
 - What amount?" (NFA 2001, SM8-5)

The New Hampshire State Emergency Operations Plan utilizes a one page Emergency Situation Report. This report includes information about casualties, shelter status, dams/river conditions, and roads/bridges. It further transmits damage information regarding residential, business, municipal buildings, water supply, sewer plant, debris, electricity and phone outages (New Hampshire 2001, Form 2).

The Los Angeles *Emergency Operations Master Plan and Procedures: Damage Assessment Annex* states the disaster intelligence phase requires three basic reports to gain an understanding of the initial damage and response needs. These reports are, a reconnaissance report, general area survey report, and city status report. The reconnaissance report is a "one time only" report designed to provide and indicator of where potential problems exist. A general area survey report is a "windshield assessment" designed to give a damage overview. The city status report is designed to give details on the status of governmental services (Los Angeles 1998, p. 10-11). The General area survey report recognizes six general categories of information needed to complete a general survey report:

- 1. "A quick summary impression of the status of the area.
- 2. Does the road and bridge network show signs of damage that will hinder movement?
- 3. Does the area show structures with visual signs of damage, partial collapse, or total collapse?
- 4. Is there a need for Urban Search and Rescue?
- 5. Is there a need for medical evacuations?
- Are there large numbers of people made homeless who require temporary shelter?" (Los Angeles 1998,p. 10)

In summary, a large amount of data is needed during situational/damage assessment. Data must be collected about people, systems, and structures in a methodical and systemized manner to assist in assigning resources where most needed.

According to the *Rapid Assessment Planning Workshop in Emergency Management (WEM) Facilitators Guide*, "the ability of local governments to perform a local situational (rapid) assessment accurately" and early in a large-scale emergency is critical to providing an adequate response to protect life and mitigate hazards (EMI 1995, FG-iii). The collection, collation and dissemination of all situational/damage assessment data during major emergencies and disasters is a vital component of a rapid assessment. The *WEM Facilitators Guide* states the development of checklists are critical to overall rapid assessment operations because it will ensure that all collectors evaluate areas as assigned, will gather the same types of information, and report in the same way (EMI 1995, FG-III-2).

ADPC in *Post-disaster Damage Assessment & Needs Analysis* states that "good assessments and reporting require forethought; the assessment and reporting system should be established in the preparedness planning" (ADPC 200, p. 2). "Passing on information is every bit as important as receiving it" (ADPC 2000, p. 2).

"Given that reports will be received from many sources, it is essential that their formats are standard as to facilitate the process of analysis and collation" (ADPC 2000, p. 4). Additionally, report formats "should be as simple as possible and should, like checklists, guide the reporter...through the sequence of stating the problem, identifying the current status of response, identifying unmet needs, and decision-making" (ADPC 2000, p. 2000, p.4).

The Emergency Situation Report for the NH Office of Emergency Management outlines specific data needed and provides a method for disseminating assessment information from the local Emergency Operations Center (EOC) to the State EOC (NH 2001, Form 2).

In summary, rapid damage assessment is a vital part of a disaster response. A variety of information needs to be reported in order to prioritize the most efficient and effective response activities, the deployment of resources, and request for state and federal assistance (EMI 1995, FG-iii). Systemization of the information, format, and transmittal process is imperative to facilitate the collection, analysis, and collation process.

PROCEEDURES

Study Population

The population for this study include agencies outlined in the Nashua Emergency Response Plan, the State of NH Office of Emergency Management, City of Los Angeles, and a survey of the participants of the March 24-April 4, 2003 Community Risk Reduction, Executive Analysis of Fire Service Operations in Emergency Management, and Executive Development Classes at the National Fire Academy and one course at the Emergency Management Institute.

Process

A ten-step process was used to conduct this action research project.

First, the problem statement, purpose, and research questions were rechecked for clarity and to assure they meet the broad goal of this research.

Second, a survey (Appendix B) was developed to gather information about other organization's, structure, population served, operation, and effectiveness regarding their damage assessment efforts. This survey was distributed to the participants of the March 24-April 4, 2003 Community Risk Reduction, Executive Analysis of Fire Service Operations in Emergency Management, and Executive Development Classes at the National Fire Academy and one course at the Emergency Management Institute.

Third, was to select a set of journal articles, reports, and publications. A convenience sample was selected based on availability of publications and materials in the Nashua Fire Rescue Library and the Learning Resource Center (LRC) at the National Fire Academy. The list of journals, publications, reports and resources included:

Rapid Assessment Planning Workshop in Emergency Management-Facilitator's Guide

Rapid Assessment Planning Workshop in Emergency Management-Resource Guide

Post-Disaster Damage Assessment and Needs Analysis

Damage Assessment Annex, Los Angeles EOP

Nashua Emergency Operations Plan

New Hampshire State Emergency Operations Plan

Understanding and Improving Damage Assessment

Fire Service Field Operations Guide ICS 420-1

Snapshot Damage Assessment Form, Palm Beach County FL

Snapshot Damage Assessment Form, Dayton OH

Fourth, conducted a personal interview with Assistant Chief Roger Hatfield of Nashua Fire Rescue. Assistant Chief Hatfield was selected because of his current position as Co-director of Emergency Management for the City of Nashua. Chief Hatfield is a 20-year veteran of Nashua Fire Rescue including 14 years of experience in Emergency Management in the City of Nashua. He is a graduate of the National Fire Academy's Executive Fire Officer Program and earned a Bachelor of Science Degree in Fire Service Education and Administration.

Fifth, a telephone interview of Gregg Champlin, Natural Hazards Program Specialist with the NH Office of Emergency Management was conducted to gain understanding and input regarding damage assessment data needs, tools, and needs available at the state level. Champlin was selected because of his current position within the State Office of Emergency Management, and his extensive education and experience in managing and responding to earth quake disasters.

Sixth, the researcher created a rapid damage assessment proposal (Appendix A) to be evaluated for adoption by the Nashua Office of Emergency Management.

Seventh, the researcher created a draft update to ESF-5 of the Nashua EOP (Appendix F). The Nashua Office of Emergency Management will evaluate this draft for adoption.

Eighth, the researcher created a draft Nashua Rapid Damage Intelligence Form (Appendix C) for use during major emergencies and disasters within the City of Nashua. The Nashua Office of Emergency Management will evaluate this draft for adoption.

Ninth, the researcher created a Nashua Situation Report Data Collation Form (Appendix D).

Tenth, the researcher created a draft Standard Operating Guideline for damage assessment conducted by Nashua Fire Rescue (Appendix E). This draft will be submitted through the chain of command to Deputy Michael Mansfield who is responsible for development and adoption of Standard Operating Guidelines for Nashua Fire Rescue.

Definitions

Damage Assessment: "gathering of information related to the impact of an event, or series of events, on life and property within a defined area" (NFA 2001, SM 8-3).

Emergency Operations Center (EOC): Centralized command and control center utilized during major emergencies and disasters to provide centralized command, coordination, and operational support (Nashua 2003, ESF1-1).

Emergency Operations Plan (EOP): A planned response to a real or potential major emergency or disaster situation that directly impacts or threatens public health and safety, and the general well being of the community (NEPO 2003, 1-1)

Flash Report: "Purpose is simply to confirm that the disaster has actually occurred, that steps area being taken to cope with it, to give first indication of the sort of external relief that might be required" (ADPC 2000, 3).

Immediate Damage Assessment: "a rapid estimate of damage at a specific incident site or within an incident area" (NFA 2001, SM 8-3).

Rapid (initial) Damage Assessment: Same as Immediate Damage Assessment. (EMI 1995, I-6)

Situation Assessment: Same Damage Assessment (ADPC 2000, 2).

Limitations

The literature review conducted was limited by the author to a convenience sample of publications and materials available at the Learning Resource Center at the National Fire Academy during the period of March 24, 2003 to April 4, 2003, the Emergency Operations Plan for the State of New Hampshire and the City of Nashua.

The scope of this research was limited to development of a rapid damage assessment process to provide initial information regarding extent of damage and immediate mitigation needs. This process was limited to utilization of current city personnel and resources to complete an initial rapid assessment. Specific procedures for completion of a rapid damage assessment were limited in scope to procedures for employees of Nashua Fire Rescue Department. The people selected for interview were selected based on their current position and experience in emergency management and access or proximity to the author.

RESULTS

The results of the survey instrument (Appendix C) outlined in table 1 below indicate in Question 3 that forty-three or 54 % of the organizations responding report having a formal damage assessment process for large-scale disasters or emergencies. In Question 4, Forty-seven or 59% of the respondents report the fire department is responsible for "Immediate" damage assessment. Fire Service involvement in the damage assessment process dwindles as the incident progresses with only seventeen or 21% of respondents reporting fire service involvement in Post Incident damage assessment. Building Department involvement in the damage assessment to 46% involvement in Post Incident damage assessment. Twenty-eight out of the eighty respondents (36%) report having a formal damage assessment team for large-scale disasters or emergencies.

Total Surveys: 80 Question < 20,00020,001-40,001-60,001-80,001-Greater than 100,000 1 40,000 60,000 000.08 100,000 11 25 25 7 10 2 Ouestion Career Combination Volunteer 2 55 23 2 **69**% 29% 2% Yes O[/]Question 3 43 37 54% 46%

Figure 1 Survey Results

Question	Fire	Police	Pub. Works	Bldg Dept.	Other	(Notes)
4	47	20	13	19	16	
	5 9 %	25%	16%	(24%)	20%	
Question	Fire	Police	Pub. Works	Building	Other	(Notes)
5	24	9	15	Dept.	28	
	30%	11%	19%	32 (40%)	35%	
Question	Fire	Police	Pub. Works	Building	Other	(Notes)
6	17	7	19	Dept.	29	
	21%	9%	24%	37 (46%)	36%	
Question	Yes	[/[0				
7	28	50				
	36%	64%				

1. Are the agencies currently responsible for collection, collation, or dissemination of local situational/damage assessment data in Nashua NH appropriate?

Many agencies are required participants in the damage assessment process. Currently, the Nashua Emergency Operation Plan (NEOP) places responsibility for collection, collation, and dissemination of situational and damage assessment information within the Planning Section (PLNSEC) of the Emergency Operations Center (EOC). This function specifically is assigned to the Situation Analysis Unit of the Planning Section.

There are a variety of agencies within the City of Nashua that have responsibility for obtaining situational assessment, the only agency that is identified as being assigned "field damage assessment" is the City Assessor's Office. All agencies listed have a role in the damage assessment process. City agencies, which are not identified as having a role in damage assessment in the NEOP, are the Department of Building Safety, the Information Technology Department, and the Code Enforcement Department. 2. What phases of situational/damage assessment are needed to effectively managed disasters or major emergencies?

Generally there are three main phases of damage assessment.

First, is that which is conducted immediately following the incident. The purpose of this initial rapid assessment is to confirm what has happened, where it has happened, and the severity. Speed of this assessment after the incident is more important than precise figures. This assessment is the basis for prioritization of need for and efficient and effective utilization of resources.

Second, is a preliminary or Interim Report. The focus of this assessment is to provide additional, more precise information, and detailed safety survey's of damaged structures by qualified assessors. This is an ongoing assessment to provide greater information on the scope, cost, and safety of damaged structures or systems.

Third, is a final or recovery assessment. These assessments are focused on providing a complete summary of what happened, how it was managed, reconstruction and demolition, and lessons learned. This assessment is essentially the recovery and termination phase of the process.

3. What data should be collected during situational/damage assessment?

Situational/Damage Assessment data must be collected starting prior to a major emergency or disaster and does not conclude until the recovery operation is complete. Pre-incident data provides a baseline for evaluating damage and identifying critical facilities. This data may include tax records, building records, maps, and a variety of other governmental records. During a major emergency or disaster there are seven major categories of information that must be included in a rapid situational/damage assessment:

Life Safety Information Status of Lifelines Status of essential facilities Access routes Imminent hazards Major problems

Status of resources and requests for assistance.

The amount and quality of data needed increases as the incident progresses. Initial data is focused on providing confirmation of what damage has occurred, where it has occurred, and the severity to which it has occurred. Speed of obtaining this information is paramount to providing the most efficient and effective life safety response. Generally the information provided is largely qualitative in nature at this point as opposed to quantitative.

As incident progresses, the need for quantitative data grows, thus requiring a more detailed and thorough assessment. This leads to a more detailed and accurate assessment of the impact of the damage, the value of the damage, and the cost to mitigate and recover from the damage.

4. How should collection, collation, and dissemination of all local situational/damage assessment data during major emergencies and disasters in Nashua, NH occur? The key to collection, collation, and dissemination of local damage assessment data during major emergencies and disasters in Nashua NH is the systemization of this process in emergency planning prior to the incident.

All of this data eventually is centrally collected in the Planning Section (PLNSEC) of the Emergency Operations Center. Specifically, this data is collected from the Emergency Operations Section Chief, collated, and analyzed by the Situational Analysis Unit (SAU) of the PLNSEC. The PLNSEC Chief then uses this data to plan for further needs and to provide operation briefings within the NEOC.

A variety of different people with different training and experience will be required to provide this data. Prior planning reduces duplication of resources by providing for specific assignments of personnel evaluating specific geographical areas. Checklist assist in systemizing the quantity and quality of the data in such a way as to guide the user to collect only the data needed at any one point during the incident.

This standardization and systemization further aid in the collation as those responsible in the SAU receive information in the same format regardless of which individual or agency provides the information. Properly designed forms also provide for systemized collation and dissemination to other agencies or government entities.

DISCUSSION

Currently, there is no formalized situational/damage assessment process for use during major emergencies and disasters occurring in Nashua, New Hampshire. The purpose of this research was to develop a formalized rapid (initial) situational/damage assessment process in Nashua, New Hampshire. In the past, the magnitude of major emergencies and disasters in the city has been of minor to moderate nature. This has allowed functioning without a formalized process.

Planning for major emergencies and disasters will allow the City to function more effectively during these larger impact incidents. "Of all the functions performed after a disaster, there are perhaps none more important than damage assessment" (McEntire 2002, p.9). According to the Facilitators Guide for *Rapid Assessment Planning Workshop in Emergency Management (WEM)*, the ability to perform "local situational (rapid) assessment accurately" and early in a large-scale emergency is critical to providing an adequate response to protect life and mitigate hazards (EMI 1995, FG-iii). The author agrees with both McEntire and EMI that there is no task more important than a rapid initial assessment immediately following an emergency. Damage assessment is essentially the equivalent to the fire services size-up. We would not think of entering a building fire without first conducting a size-up.

"Rapid assessment must have a leader...assigned to manage and report the data and prepare documentation necessary for continuing response operations" (EMI 1995, FG-I-4). Centralization within the Planning Section of the ECO is the appropriate location for the collection, collation, and dissemination of situational/damage assessment data. The City of Los Angeles has experienced many major emergencies and disasters. In it's *Emergency Operations Master Plan and Procedures; Damage Assessment Annex*, Los Angeles centralizes "capturing all disaster related information, including damage assessment information" in the Planning and Intelligence Section of the EOC (Los Angeles 1998, P. 8). The State of New Hampshire's EPO also places responsibility for centralized collection, collation, and dissemination of situational/damage assessment data with the Information and Planning Section of the State EOC (New Hampshire 2001, ESF 5-2). The *Fire Service Field Operations Guide ICS420-1* assigns the Situation Unit as a subsection of the Planning Section. It further states the situation unit is responsible for "the collection, processing and organization of all incident information. The situation unit may prepare future projections of incident growth, maps and intelligence information" (FIRESCOPE 2001, p. 7-7).

This consistency in centralizing the collection, collation, and dissemination of situational/damage assessment data with the Planning Section creates a clearly understood line of responsibility, terminology, and information flow regardless of who fills the various positions. It will also allow the City and State governments to work collectively in a common system.

The Nashua EOP Response Operations Element, part III outlines the following agencies as having responsibility to "obtain situational assessment" (Nashua 2003, Part III):

- Nashua Police Department
- Nashua Fire Rescue Department
- Nashua Public Health
- Nashua Environmental Health
- American Red Cross-Nashua Chapter
- Nashua Welfare Department
- Nashua Public Works
- Nashua Office of Emergency Management

The Facilitator's Guide to *Rapid Assessment Planning Workshop in Emergency Management (WEB)*, further corroborates both the participation and centralization outlined in the EOP. "Depending on the time of the incident and the amount of warning, it (rapid assessment) may initially include personnel from law enforcement, Fire, and Public Works." "Rapid assessment must have a leader...assigned to manage and report the data and prepare documentation necessary for continuing response operations" (EMI, 1995, FG-I-4).

According to the student manual for Executive Analysis of Fire Service Operations in Emergency Management, "An immediate damage assessment is started by the first unit on the scene making a rapid visual assessment of conditions" (NFA 2001, p. SM8-5). "Immediate damage assessment for large areas...can be done by fire companies on the basis of the company response area or district" (NFA 2001, p. SM 8-7).

The early participation of Fire Rescue and Police resources for damage assessment is consistent with Survey Results in Figure 1. Fifty-nine percent of survey respondents indicated the fire service and twenty percent indicated the police had responsibility for "immediate" damage assessment. The survey further indicates the building department responsibility increased from 24% for "immediate" damage assessment to 46% for "Post Incident" damage assessment (Wood 2003). This initial participation of the emergency services is further corroborated in the City of Los Angeles *Damage Assessment Annex* (Los Angeles 1998, p. 8).

The author feels the Information Technology Department, Code Enforcement Department, and Building Safety Department should be included in the damage assessment process. Information technology is responsible for the city network, hardware, and phone system. This includes maintenance of the City GIS system, all servers, and programming to support the Computer Aided Dispatch system used by Nashua Fire Rescue. The Department of Building Safety is responsible for the building and demolition permit process for the city as well as inspection of all new construction for code compliance. The Code Enforcement Department has vast experience at inspecting structures and would be a valuable resource in conducting damage surveys of dwelling structures. Participation of these agencies is further corroborated in the City of Los Angeles *Damage Assessment Annex* (Los Angeles 1998, p. 9).

Research indicates there are generally three main phases of the damage assessment process. Each phase is separate and distinct yet interrelated to one another. Different information is needed at different points during the incident. The survey results in Figure 1 further support this three phase concept as the respondents clearly indicate a shift from primarily emergency services conducting the "Immediate" damage assessment to primarily the building department and other agencies responsible for "Post Incident" damage assessment (Wood 2003). Identifying what information is needed and when, permits the creation of a system to allow for collection of information in phases. These phases and make up a continuum of the damage assessment process.

The first phase of damage assessment is an immediate evaluation designed to provide confirmatory information about what has happened, where it has happened, and the severity. This assessment is the basis for prioritization of need and for the efficient and effective utilization of resources. This is clear in the results of the survey (Figure 1) where the fire service (59%) is identified as the primary agency for conducting "immediate" damage assessment (Wood 2003). The ADPC in *Post-Disaster Damage*

Assessment and Needs Analysis separates this phase into two reports; Flash Report and Initial Report (ADPC 2000, p. 3). The City of Los Angeles in its *Damage Assessment* Annex "recognizes the need for four overlapping phases or elements of damage assessment" (Los Angeles 1998, p. 3). "Disaster Intelligence is a quick assessment of critical facilities and general area survey. A Damage Safety Survey is a windshield survey to develop an estimate of the numbers, types, and degree of damage" (Los Angeles 1998, p. 6).

According to *Understanding and Improving Damage Assessment*, this phase is "undertaken quickly to comprehend the scope of the devastation" (McEntire 2002, p. 9). In an interview with Assistant Fire Chief Roger Hatfield the Co-director of Emergency Management for Nashua, stated the first phase of damage assessment is designed to give a quick picture of the scope of the damage (Hatfield 2003).

The second phase of damage assessment is designed to provide additional, more precise information, and detailed safety surveys of damaged structures. This information is designed to stabilize imminent hazards such as determining what structures are unsafe and providing cost estimates on the damage done. Initially emphasis in this phase will focus on needs for relief, but will shift toward a focus of needs for rehabilitation and reconstruction as time progresses (ADPC 2000, p. 3). This phase often is completed with the assistance of state and/or federal emergency management officials. It examines the extent of losses and determines the status of property in terms of safety, sanitation, and security concerns (McEntire 2002, p. 9). This is further supported by the survey results (Figure 1) indicating a shift from the fire service (59%) as the primary agency for

conducting the "immediate" assessment to the building department (40%) primarily responsible this "on-going" phase of damage assessment (Wood 2003).

The third phase of the damage assessment process is focused on providing a complete summary of what happened to provide for the coordination and reconstruction of damaged or destroyed facilities or systems. It is essentially the recovery and termination phase of the incident providing a clear picture of not only what happened, but also how it was managed. This allows for evaluation of the response to improve areas needing improvement.

According to *Understanding and Improving Damage Assessment*, this phase is a continuation of the second phase only more in-depth. It is performed on structures and infrastructure "to verify the costs of the disaster and recommend the best approach for repairs, demolition, and reconstruction" (McEntire 2002, p. 9). This phase of damage assessment is the basis for recovery operations. Activities associated with the Recovery Phase of the City EOP lists "extensive and detailed damage surveys and assessment" as the first activity associated with this phase of the response (Nashua 2003, Basic 2-4). This phase usually involves not only State emergency management officials, but officials from the Federal Emergency Management Agency, according Assistant Chief Hatfield (Hatfield 2003). This recovery phase is further supported by the survey results (Figure 1) identifying the building department (46%) and other agencies including local, state, and federal OEM (36%) as having primary responsibility for "post-incident" damage assessment (Wood 2003).

The author agrees there are essentially three phases of damage assessment, an initial phase, and on-going phase, and a post-incident phase. This is necessary to allow

information to be focused for a specific purpose. The type, quantity, and quality of information needed in the Post-incident phase if very different than that needed in the initial phase.

Data collection for situational/damage assessment starts prior to the major emergency or disaster and does not conclude until the recovery operation is complete. Pre-incident data such as tax records, building records, maps and a variety of other records provide a baseline for comparison of damage. It is vital these records are available to assist personnel in accurately assessing damage (ADPC 2000, p. 2).

There are seven major categories of data that are required to adequately assess damage. They include life safety information, lifeline information, essential facility information, access route information, imminent hazard information, major problem information, and resource status information.

The quantity and quality of this information varies depending on which phase of damage assessment. During the first phase for example, damage assessment is designed to provide information for prioritization of response. This requires largely qualitative data to mobilize the initial response rapidly. The third phase of damage assessment generally requires largely quantitative data to provide an accurate picture for recovery. This is supported by the fact the ADPC in *Post Disaster Damage Assessment & Needs Analysis* places an emphasis on speed of reporting over precision with its "flash" and "initial" reports (ADPC 2000, p. 5).

These categories are consistent with needed information as outlined in the *Rapid* Assessment Planning Workshop in Emergency Management (WEM) Facilitator's Guide (EMI 1995, p. FG III-2). The Local Government Situation Report form from the NH Office of Emergency Management requires information in all of these categories (New Hampshire 2001, Form 2). According to Assistant Fire Chief Roger Hatfield, these seven categories provide information needed to gain a clear picture of the incident response and recovery needs (Hatfield 2003).

The City of Los Angeles in its *Damage Assessment Annex* outlines six general categories of information needed for their general area survey report. These include a quick summary impression of the status of the area, status of road and bridge network, structural damage information, urban search and rescue needs, medical evacuation needs and shelter need information (Los Angeles 1998, p. 10). This information, coupled with information required in the City Status report provides substantially similar information to the seven categories listed above (Los Angeles 1998, City Status Report Form).

The key to collection, collation, and dissemination of local damage assessment data during major emergencies and disasters in Nashua NH is the systemization of this process in emergency planning prior to the incident.

All of this data eventually is centrally collected in the Planning Section (PLNSEC) of the Emergency Operations Center. Specifically, this data is collected from the Emergency Operations Section Chief, collated, and analyzed by the Situational Analysis Unit (SAU) of the PLNSEC. The PLNSEC Chief then uses this data to plan for further needs and to provide operation briefings within the NEOC.

FIRESCOPE, a recognized leader in the incident management field has a 32 year history of management of very large incidents using the *Fire Service Field Operations Guide ICS 420-1*. This process of centralization of data collection is well recognized by FIRESCOPE as efficient and effective and has been utilized at incidents ranging from

very large wild fires to the September 11, 2001 terrorist attack on the World Trade Center (FIRESCOPE 2001, p. 7-7).

Prior planning reduces duplication of resources by providing for specific assignments of personnel evaluating specific geographical areas. A variety of different people with different training and experience will be required to provide this data.

The *Rapid Assessment WEM Facilitator's Guide* states the development of checklists area critical to the overall rapid assessment operations (EMI 1995, p. FG III-2). According to the ADPC, "given that reports will be received from many sources, it is essential that their formats are standard as to facilitate the process of analysis and collection" (ADPC 2000, p. 4). ADPC further states, "formats should be as simple as possible, like checklists" (ADPC 2000, p. 4). According to Assistant Chief Hatfield and Gregg Champlin of the NH Office of Emergency Management, standardization of collection and reporting is needed to assure the data collected will provide the information needed when it is needed (Hatfield 2003)(Champlin 2003).

The author agrees with ADPC, EMI and Assistant Chief Hatfield that checklists assist in systemizing the quantity and quality of the data in such a way as to guide the user to collect only the data needed at any one point during the incident. This standardization and systemization further aid in the collation as those responsible in the SAU receive information in the same format regardless of which individual or agency provides the information. Properly designed forms also provide for systemized collation and dissemination to other agencies or government entities.

RECOMMENDATIONS

For over fifteen years the City of Nashua has been a regional leader in Emergency Management. The city established one of the first Local Emergency Planning Committees in the State of New Hampshire, established one of the first regionalized hazardous materials response teams, and is the only local governmental entity in the state to have a Bomb Squad. This type of preparedness and planning has placed Nashua at the forefront of Emergency Management in the region. The creation of a formalized local Rapid Damage Assessment process will provide an additional example of this leadership and commitment by the City of Nashua. It will allow our city to respond more effectively to the public needs during major emergencies and disasters, ultimately providing the highest level of service possible during these very challenging incidents.

Based on the results of this Research the following are recommended:

- 3. Nashua adopts the draft proposal outlined in Appendix A.
- 4. Nashua adopts the draft Rapid Damage Intelligence Form (Appendix C).
- 5. Nashua adopts the draft Nashua Situation Report Form (Appendix D).
- Nashua adopts the draft changes to ESF-5 of the Nashua EOP titled Disaster Planning & Intelligence (Appendix F).
- Nashua Fire Rescue Administration adopts the draft Standard Operating Guideline titled Disaster Damage Intelligence as attached in Appendix E.

REFERENCES

Asian Disaster Preparedness Center. (2000). "Post-disaster Damage Assessment & Needs Analysis-Reporting Second Draft". Klong Luang Pathumthani, Thailand: 15

Champlin, G. (2003). Telephone Interview. R. W. Wood. Concord, NH.

EMI, Ed. (1995). <u>Rapid Assessment Planning Workshop in Emergency</u> <u>Management (WEM)-Facilitator's Guide</u>. Emittsburg, MD, National Emergency Training Center

FIRESCOPE, (2001). Fire Service Field Operations Guide; ICS 421-1. California

Hatfield, R.P. (2003). Interview. R. W. Wood. Nashua NH.

Los Angeles, City o. (1998). Emergency Operations Master Plan and Procedures, <u>Damage Assessment Annex</u>, Los Angeles, CA.

McEntire, D.A. (2002). "Understanding and Improving Damage Assessment." International Association of Emergency Managers Bulletin **19 No 5**(March 2002): 9&12.

Moore, P. (1996). "Damage Done; Assessment to Come" <u>Contingency Planning</u> <u>& Management</u> I No 3(June 1996): 17-21.

Nashua, C. o. (2003). <u>Emergency Operations Plan</u>, Nashua, NH, City of Nashua Office of Emergency Management.

New Hampshire, S. o. (2001). <u>State Emergency Response Plan</u>. Concord, NH, NH Office of Emergency Management.

NFA, Ed. (2001). <u>Executive Analysis of Fire Service Operations in Emergency</u> <u>Management Student Manual</u>. Emittsburg, MD, US Fire Administration.

NFA (2001). Executive Fire Office Program Operational Policies and Procedures. Emmitsburg, MD: 21.

Wood, R. W. (2002). Survey. Nashua NH.

Appendix A (Proposal)

City of Nashua, New Hampshire Formalized Damage/Situational Assessment Process

Initial Report - Rapid Damage Intelligence Survey (< 1 Hour)

Initial Report shall be completed in the following manner within the first hour after the disaster:

- 1) Nashua Fire Rescue will provide the following assessment Information
 - a. Windshield Survey of Each District by Fire Companies
 - ii. Residential complexes
 - 1. Apartments
 - 2. Hotels
 - 3. Residential Board & Care
 - 4. Assisted living/nursing homes
 - iii. Commercial complexes
 - 1. Chemical Manufacture/storage
 - 2. Malls and Large Retail
 - 3. Large Assembly
 - 4. Manufacturing
 - iv. Transportation
 - b. City Communication Systems
 - ii. Radio
 - iii. Data Transmission
 - iv. Dispatch systems
 - v. Fire Alarm Plant
- 2) Nashua Police will provide intelligence information on the following Critical Facilities:
 - a. Nashua Police Station
 - b. City Hall
 - c. Hillsborough County Superior Court
 - d. Nashua District Court
 - e. Southern NH Regional Medical Center-Prospect Street
 - f. Southern NH Regional Medical Center-West Campus
 - g. St Joseph Hospital
- 3) Nashua School System will provide assessment information on it's facilities

- 4) Public Works will provide the following assessment Information
 - a. Public Works Garage and Equipment
 - b. City Fuel Depot
 - c. Water system information from Pennichuck
 - d. PSNH System status
 - e. Gas System status from Key Span
 - f. Waste Water treatment
 - g. Solid Waste
 - h. Public Access Cable system
 - i. Transportation Systems
 - ii. Roads and bridges
 - iii. Nashua Airport
 - iv. Nashua Rail Yard

Intermediate Report - Ongoing Assessment (4-8 Hours, then every 12 hours)

- 1) NFR Responsibilities
 - a. Update Info regarding status of each Fire District
 - b. City Communication Systems
 - v. Radio
 - vi. Data Transmission
 - vii. Dispatch systems
 - i. Fire Alarm Plant
- 2) NPD Responsibilities
 - a. Provide Update on security by sector
 - b. Provide update on material reported on Interim Report
- 3) Nashua School System will provide assessment information on it's facilities
- 4) NPW Responsibilities
 - a. Provide info on City Buildings
 - b. Provide info on Parks Rec. Facilities
 - c. Update Info regarding
 - i. Transportation Systems
 - 1. Roads and bridges
 - 2. Nashua Airport
 - 3. Nashua Rail Yard
 - ii. Water system information from Pennichuck
 - iii. Gas System status from Key Span
 - iv. Waste Water treatment

Final Report – After Emergency response terminated

- 1) Conducted by NH OEM and FEMA
- 2) Assisted by Nashua Assessors Office
- 3) Assisted by Nashua OEM
- 4) Assisted by Nashua Fire Marshal's Office
- 5) Assisted by Nashua Public Works
- 6) Assisted by NH Department of Transportation
- 7) Assisted by Nashua Department of Building Safety

Evaluation

- 1) Upon implementation, an exercise will be conducted to allow each company a chance to complete a damage intelligence form based on photos or video and to submit information to Battalion.
- 2) An exercise is to be conducted at least annually allowing for practice of Rapid Damage Intelligence gathering.
- 3) A critique will follow each exercise with recommendations reviewed by the Local Emergency Planning Committee for implementation.

Appendix B (Survey)

NASHUA FIRE RESCUE Fire Marshal's Office 2 Conant Road Nashua, NH 03062 603-589-3465

March 31, 2003

Dear Fellow Emergency Service Professional:

I am conducting research on the damage assessment process during and after large-scale emergencies. The purpose of this research is two fold. First, it will satisfy the requirements of the Executive Fire Officer Program I am currently enrolled in at the National Fire Academy. Second, it will provide a framework for the creation of a process for conducting damage assessment at large-scale emergencies and disasters in my community.

Part of this project requires that I look at what others have already done or are currently doing in the area of large-scale damage assessment. Please take a moment to complete the attached survey and feel free to make additional comment you feel pertinent on the reverse side. If your organization has a damage assessment protocol, process, tool, or other pertinent documentation, please feel free to forward those items as well.

Please complete the enclosed survey and the author will collect the surveys at each classroom Wednesday, by noon. Anyone interested in the results of the survey may request a copy by contacting the researcher at the above phone number or email <u>woodr@ci.nashua.nh.us</u>.

Thank you for your assistance!

Sincerely,

Richard W. Wood Inspector/Investigator

Research Questionnaire

y:					
	y: State Zip:				
nta	ntact Name & Title:				
ail	nail & Phone:				
	Population:				
	\Box Less than 20,000 \Box	60,001 - 80,000			
	□ 20,001 - 40,000 □	80,001 - 100,000			
	□ 40,001 - 60,000 □	Greater than 100,000 Approx #:			
	Fire Department Type & Size	number of Demonstral			
	\Box Career \Box Combination \Box volumeer Approx	number of Personnei			
	Do you have a formal damage assessment process for emergencies in your community? \Box Yes \Box N	or large-scale disasters or 0			
	Who is responsible for <u>IMMEDIATE</u> damage assess emergencies in your community? □ Fire □ Police □ Pub. Works □ Building	sment at large-scale disasters or ng Dept □ Other(specify)			
	Who is responsible for <u>ON GOING</u> damage assessme emergencies in your community?	<pre>nent at large-scale disasters or ng Dept □ Other(specify)</pre>			
	Who is responsible for <u>POST INCIDENT</u> damage assessment at large-scale disasters or emergencies in your community?				
	Do you have a damage assessment Team for large-se your community? \Box Yes \Box No	cale disasters or emergencies in			
	If yes, who makes up the membership of the team? (Police, Public Works)	ie , Engineer, Assessor, Fire,			

Please indicate areas of concern, problems, or experiences your jurisdiction had regarding damage assessment for large-scale disasters or emergencies?