Student Manual

G-556

Local Damage Assessment

FEMA

G556

Local Damage Assessment

Student Manual

FEDERAL EMERGENCY MANAGEMENT AGENCY
EMERGENCY MANAGEMENT INSTITUTE

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I Introduction to Local Damage Assessment

Unit Objectives

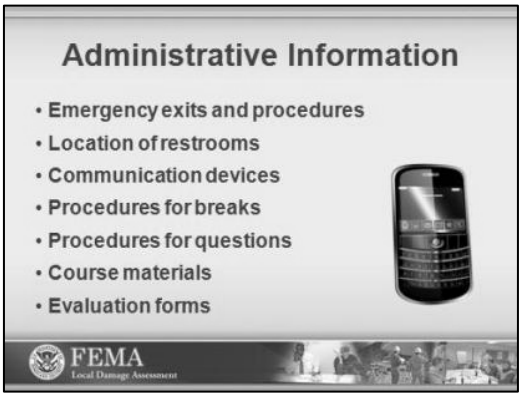
This unit provides an overview of the course and the importance of local damage assessment. Information gathered during damage assessment identifies needs, helps set priorities, and drives response and recovery actions. This snapshot of the extent and location of damage provides information for the public as well as documentation necessary for the pursuit of additional resources from contracts and mutual aid and/or from State and Federal agencies. The thoroughness and efficiency of the damage assessment process sets the tone for the entire response/recovery operation because it provides information about the impact of the event on the entire community.

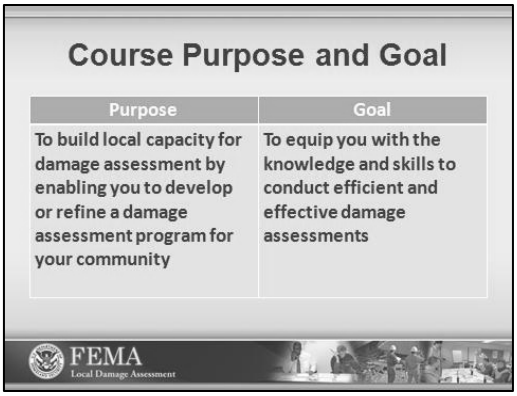
By the end of this unit, you will be able to:

- Define the purpose of damage assessment.
- Define the basic terms related to damage assessment.
- List critical infrastructure and key resources in a community.

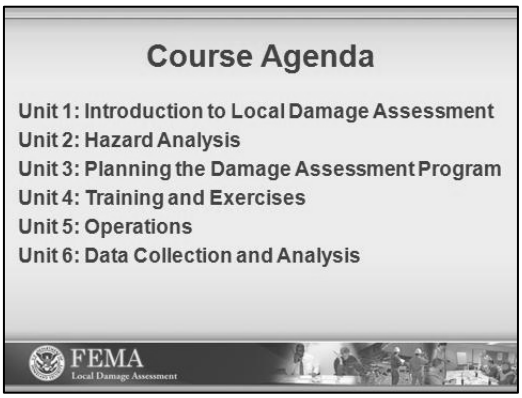
Course Overview

This unit provides an overview of the course and the importance of local damage assessment. Information gathered during damage assessment identifies needs, helps set priorities, and drives response and recovery actions. This snapshot of the extent and location of damage provides information for the public as well as documentation necessary for the pursuit of additional resources from contracts and mutual aid and/or from State and Federal agencies. The thoroughness and efficiency of the damage assessment process sets the tone for the entire response/recovery operation because it provides information about the impact of the event on the entire community.





The purpose of this course is to build local capacity for damage assessment by enabling you to develop or refine a damage assessment program for your community. In this course, you will acquire the knowledge and skills needed to be able to conduct efficient and effective damage assessments in order to save lives, protect property and the environment, and to begin the process of recovery and mitigation.

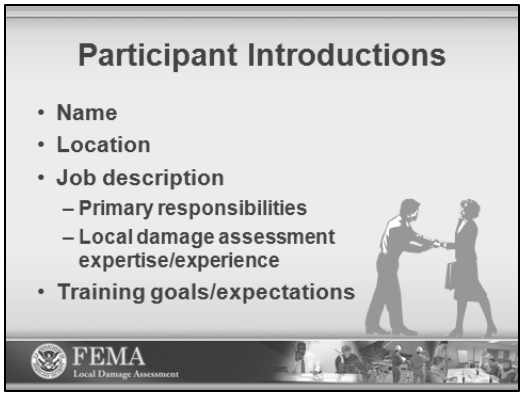


There are six units in this course. The objectives for each unit are listed on the next page.

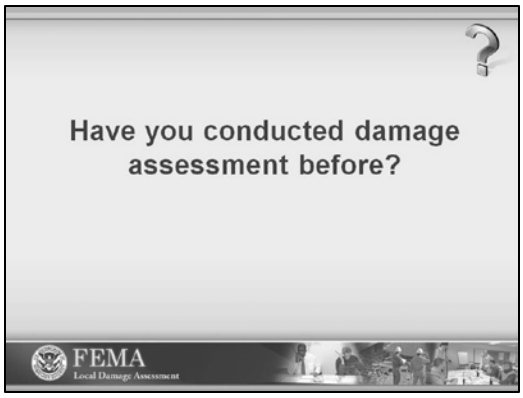
Course Objectives

The following are the objectives for the course. They identify the actions you should be able to accomplish upon completion of each unit.

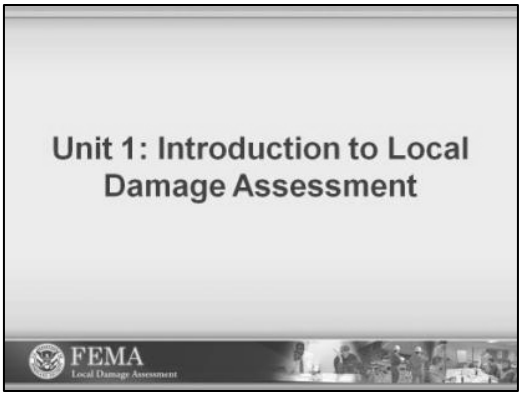
Unit	Objectives
1	■ Define the purpose of damage assessment. ■ Define basic terms related to damage assessment. ■ List critical infrastructure and key resources in a community.
2	■ Distinguish between risk assessment and hazard vulnerability assessment. ■ Describe the information that risk and hazard vulnerability assessments can provide. ■ Describe the process for conducting a hazard analysis.
3	■ Identify potential members of the local damage assessment planning team. ■ List common steps for planning a damage assessment program. ■ List planning assumptions to be included in a damage assessment plan. ■ Describe guidelines for establishing local standards for damage assessment.
4	■ Explain the value of training and exercises to a local damage assessment program. ■ Define types of training and exercises. ■ Identify resources for developing a training program for local damage assessment. ■ List basic principles for effective training and exercises. ■ Determine training needs for local damage assessment teams. ■ Explain how training and exercises can be used to improve the damage assessment program.
5	■ Identify potential members of the local damage assessment response team. ■ List types of information that should be included in pre-deployment briefings. ■ Describe basic procedures for damage assessment. ■ Assign damage level ratings based on visual inspection. ■ Describe special considerations regarding the human impact of disasters.
6	■ Explain how damage assessment information is used after the event. ■ Explain documentation and record-keeping methods for effective damage assessments.



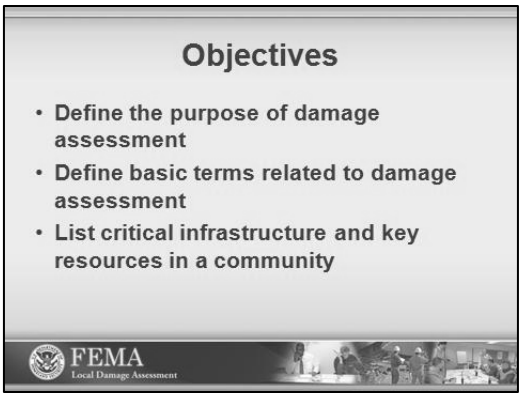
As directed by your instructor, introduce yourself to others in your class. Let them know about yourself and your experience with damage assessment. Trade contact information so you can build a network of professionals to contact for support after the class is over.



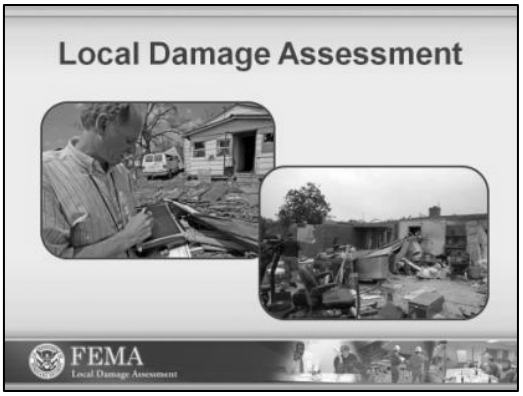
Unit Overview



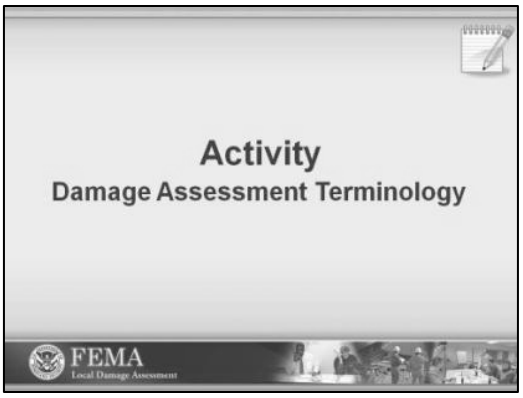
The thoroughness and efficiency of the damage assessment process sets the tone for the entire response/recovery operation because it provides information about the impact of the event on the entire community.



You need to become familiar with damage assessment terms for effective communication. It is also important to know the purpose of damage assessment and what the critical infrastructure and key resources are in your community.



In local damage assessment, damage assessment response teams from the affected community evaluate and document physical damage caused by a disaster.



For this activity, you will be divided into four groups. Your group will have 10 minutes to define two assigned terms by using your previous experience and the glossary if needed.

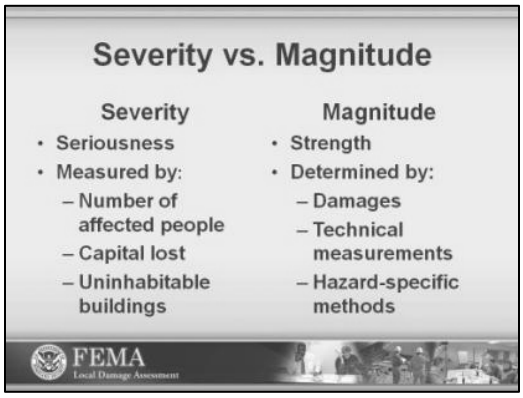
Group Activity: Damage Assessment Terminology

Damage Assessment Terminology

Instructions:

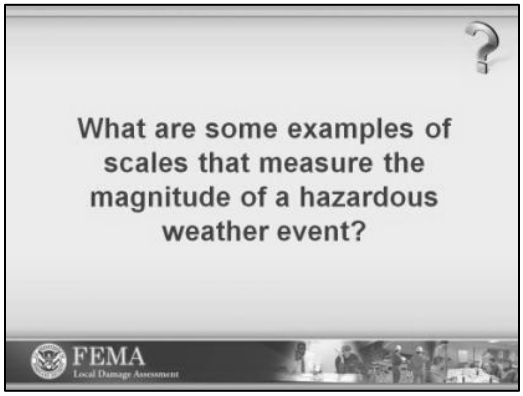
Your group will be assigned two vocabulary words related to damage assessment to define, using your prior experience. If necessary, you may refer to the glossary found in the appendix of your student manual.

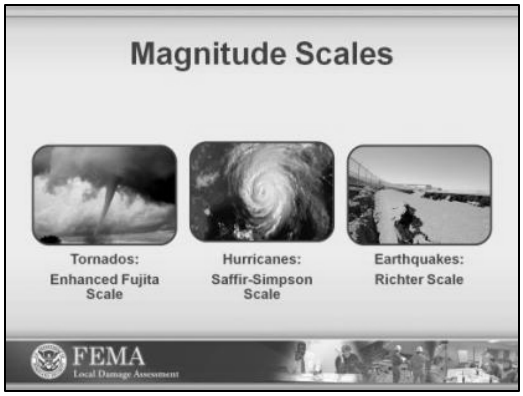
Term	Definition
Severity	
Magnitude	
Natural Hazards	
Adversarial/ Human-caused Hazards	
Risk	
Vulnerability	
Individual Assistance	
Public Assistance	



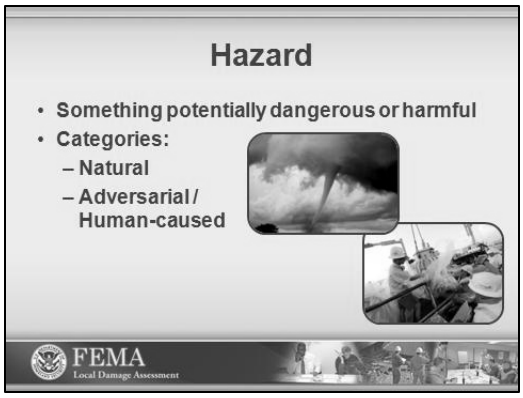
Severity is a measure of the *seriousness* of the effects of a hazard event.

Magnitude is a measure of the *strength* of a hazard event.

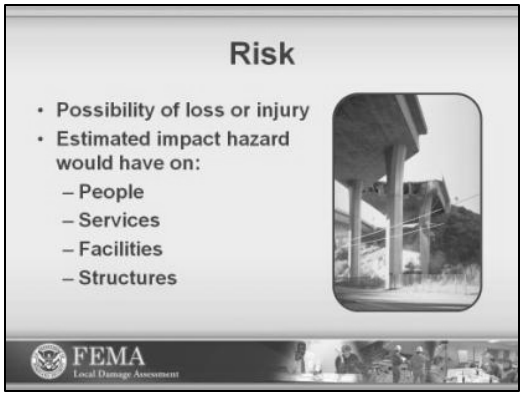




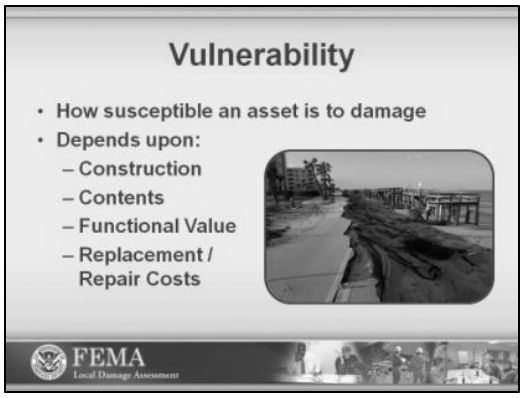
Using common scales, such as the Enhanced Fujita (EF) scale for tornados, the Saffir-Simpson scale for hurricanes, and the Richter scale for earthquakes, allows for consistency of measurement across locations.



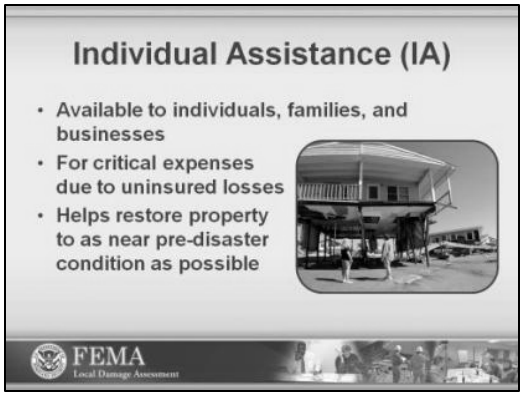
A hazard is something that is potentially dangerous or harmful. It is often the root cause of an unwanted outcome. Hazards may be categorized as natural or as adversarial/human-caused.



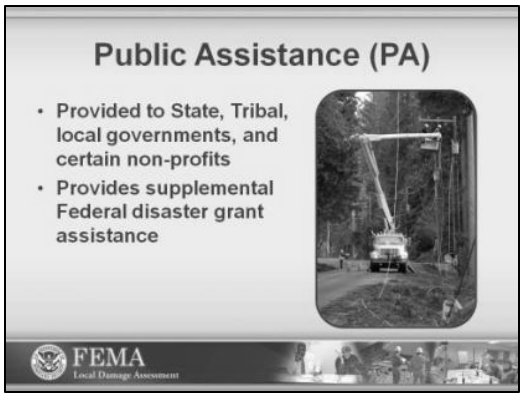
Risk is the possibility of loss or injury. More specifically, it is an estimated impact that a hazard would have on people, services, facilities, and structures in a community. It is the likelihood of a hazard event resulting in an adverse condition that causes injury or damage.



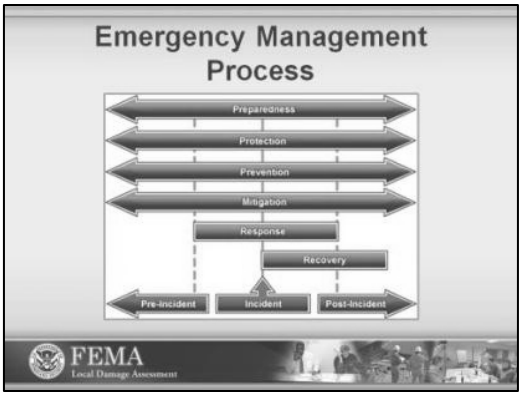
The vulnerability of one element of the community is often related to the vulnerability of another, and a hazard may cause indirect damages in addition to the damages that are caused by the direct impact.



Individual Assistance (IA) is funding or direct assistance to individuals, families, and businesses in an area whose property has been damaged or destroyed and whose losses are not covered by insurance.



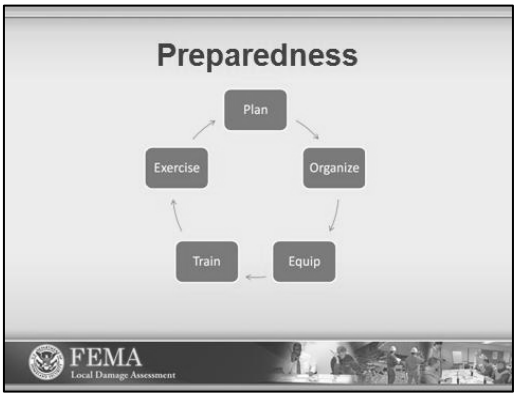
Through the PA Program, FEMA provides supplemental Federal disaster grant assistance for debris removal, emergency protective measures, and the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain types of private non-profit (PNP) organizations.



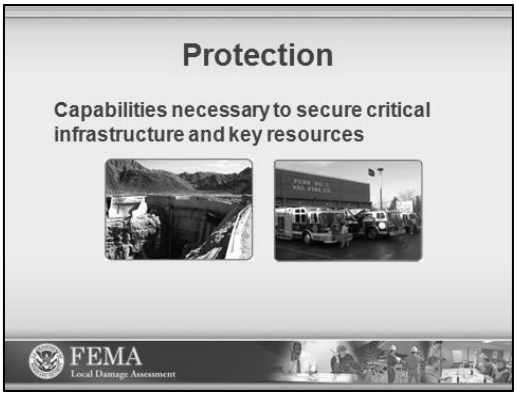
The Emergency Management Process

You may already be familiar with a four-step emergency management process, usually presented as a cycle. The image on the slide presents the process as a continuum to emphasize the ongoing nature of several of the activities and the overlap that exists. The Department of Homeland Security (DHS) has emphasized the additional emergency management activities of Pprotection and prevention due to emerging threats.

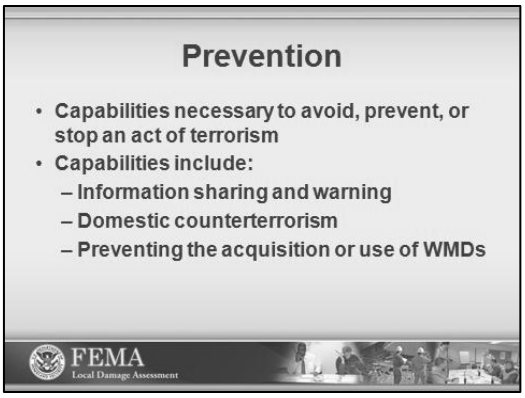
The purpose behind emergency management is quite simple: government and community services need to function uninterrupted as much as possible. This should be a priority for restoration during and after an event.



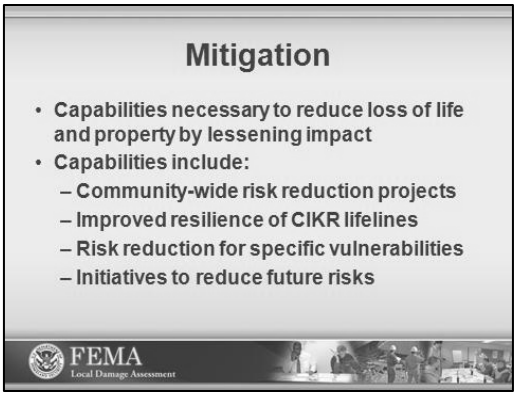
Preparedness refers to the actions taken to plan, organize, equip, train, and exercise to build and sustain the capabilities necessary to prevent, protect against, mitigate the effects of, respond to, and recover from those threats that pose the greatest risk to the security of your community. Preparedness is an ongoing, overarching goal that is achieved through all the other emergency management activities.



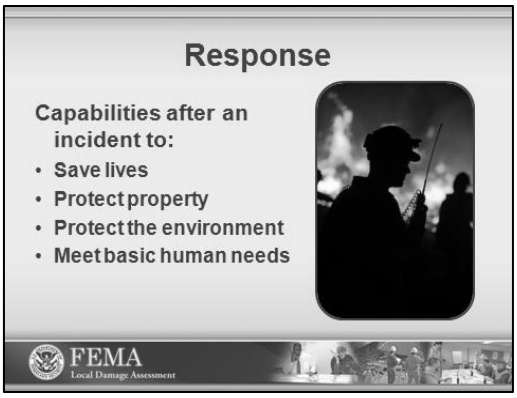
Protection refers to capabilities necessary to secure critical infrastructure or key resources (CIKR) against acts of terrorism and manmade or natural disasters. It requires coordinated action on the part of Federal, State, and local governments, the private sector, and concerned citizens across the country. Protection is an ongoing process.



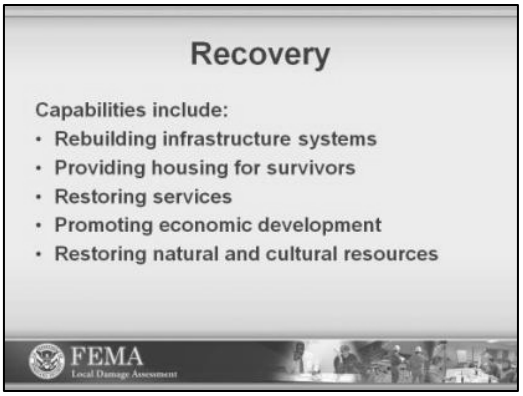
Prevention refers to those capabilities necessary to avoid, prevent, or stop a threatened or actual act of terrorism. Prevention is also ongoing.



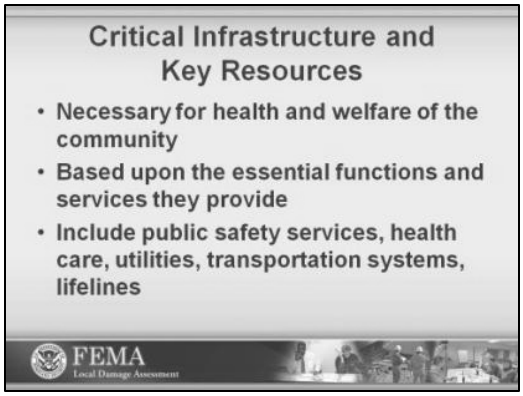
Mitigation refers to those capabilities necessary to reduce loss of life and property by lessening the impact of disasters. Like preparedness, protection, and prevention, mitigation is a continuing activity.



Response refers to those capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred.

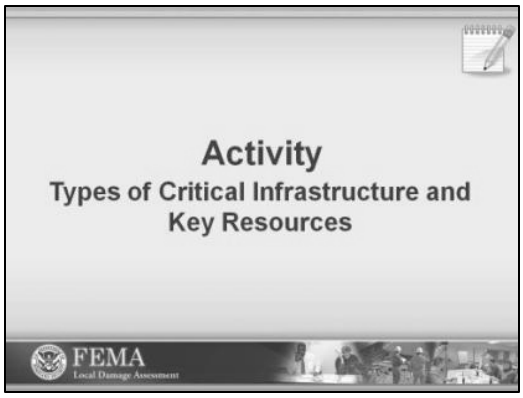


Recovery refers to those capabilities necessary to assist communities affected by an event to recover effectively. Some response activity continues while recovery is beginning.



Critical Infrastructure and Key Resources

These essential functions and services enable agencies to exercise civil authorities, maintain the safety and well-being of the general populace, provide vital services, and sustain the industrial and economic base in an emergency.



Group Activity: Types of Critical Infrastructure and Key Resources

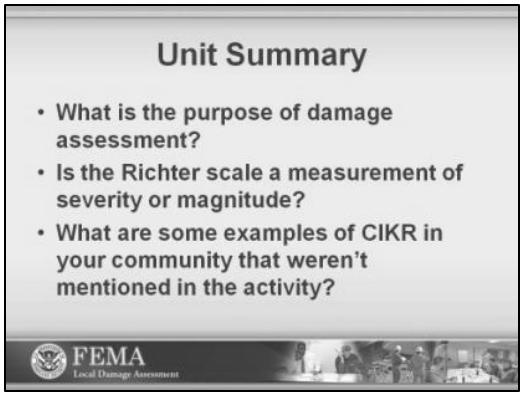
Your group will be responsible for creating a list of examples for your assigned category. You will present these terms to the class. During the presentations, you should complete the rest of the worksheet using information presented by the other groups.

Critical Infrastructure and Key Resources

Instructions:

Your group will be assigned a category of critical infrastructure and key resources. Working with your group, record as many examples as you can think of in five minutes for the category you have been assigned. Be prepared to share your responses with the rest of the class.

Critical Infrastructure and Key Resource	Examples
Public Services	
Transportation Systems	
Lifeline Systems	
High Risk Facilities	



Unit Summary

In this lesson, you learned some basic terminology that is used for damage assessment. In addition, you learned how important it is for a community to conduct a thorough and accurate local damage assessment, not only as part of the Presidential Disaster Declaration process, but also to identify needs, determine priorities, and set the tone for the entire response and recovery.

Remember, before developing a plan for your jurisdiction, consult any damage assessment plans or guidelines that your State or other governing bodies may have already developed.

II Hazard Analysis

Unit Objectives

In this unit, the differences between risk and hazard vulnerability assessments are presented. The basic process for conducting each of these types of assessments is introduced as well as what information each provides to assist in planning a response to an incident.

By the end of this unit, you will be able to:

- Distinguish between risk assessment and hazard vulnerability assessment.
- Describe the information that risk and hazard vulnerability assessments can provide.
- Describe the process for conducting a hazard analysis.

Toolkit Resources

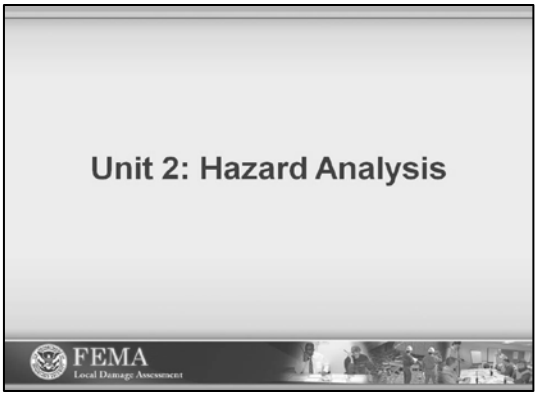
The following resources are referenced in this lesson and provided in the Toolkit.

Sample Documents

- Risk Index Worksheet for Comparing and Prioritizing Risk
- Hazard Profile Worksheet
- Community Exposure Profile
- Loss Estimation Form

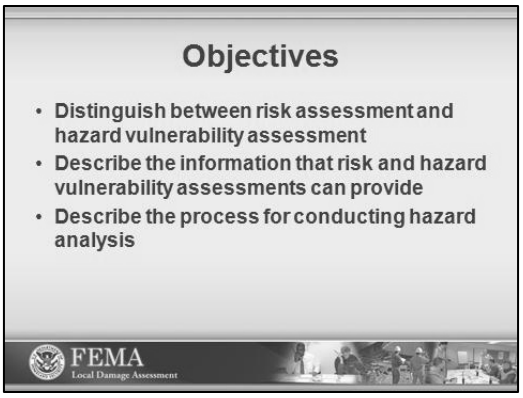
Resources

- FEMA Library (Publication 386-2)
- The Superfund Amendments and Reauthorization Act (SARA), Title III
- National Geodetic Survey (NGS)
- HAZUS-MH
- Geographic Information Systems (GIS)

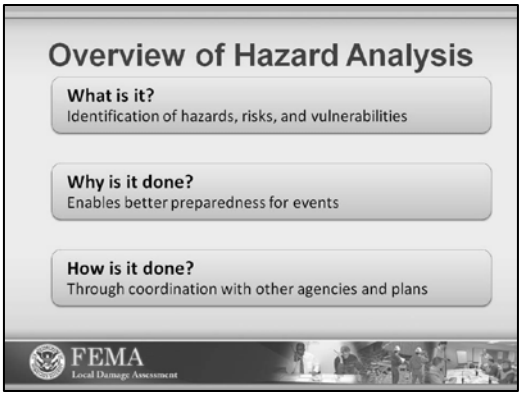


Unit Overview

In this unit, you will learn about the differences between risk and hazard vulnerability assessments. You will also be introduced to the basic process for conducting each of these types of assessments as well as what information each provides to assist you in planning a response to an incident.

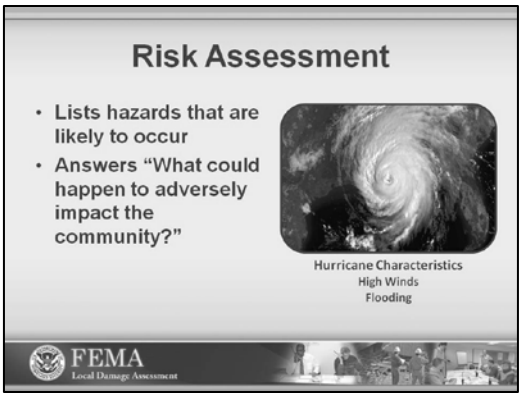


You need to know the hazard analysis process, including risk assessment and hazard vulnerability assessment. You also need to know how the information from the hazard analysis is helpful to your community.



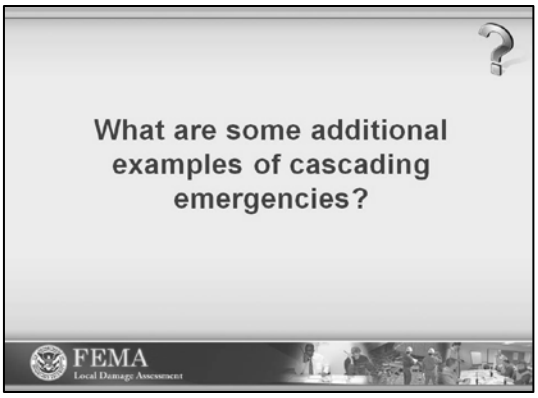
Overview of Hazard Analysis

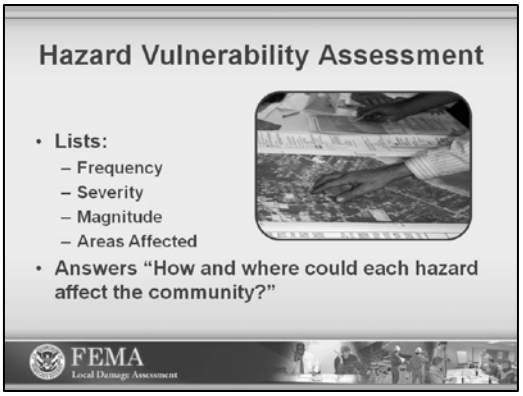
Every community is different, so it is critical that hazards are identified that are most likely to affect your community.



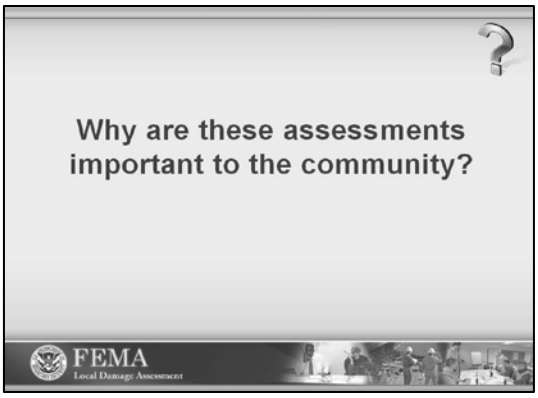
Risk assessments provide information about what hazards are likely to occur in the community and the characteristics of each of those hazards. Risk assessment answers the question, "What could happen to adversely impact the community?"

A risk assessment identifies and characterizes all hazards that may affect the community such as natural hazards, adversarial/human-caused hazards, and cascading emergencies.

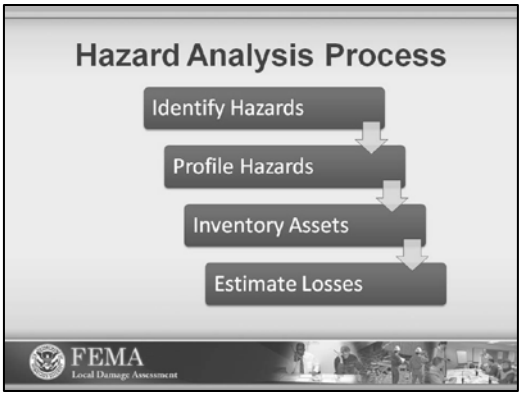




Hazard vulnerability assessment (HVA) includes information about how often each hazard is likely to occur, the area likely to be impacted, and how severe the impact may be. The HVA answers the question, "How and where could each hazard affect the community?"

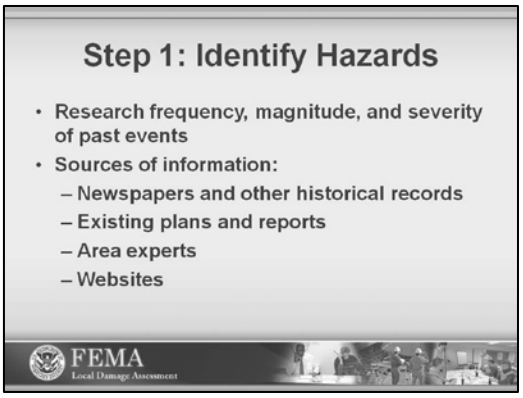


Hazard Analysis Process



Although every community is different, there are some basic steps that need to be performed to effectively assess risks and vulnerabilities for the community.

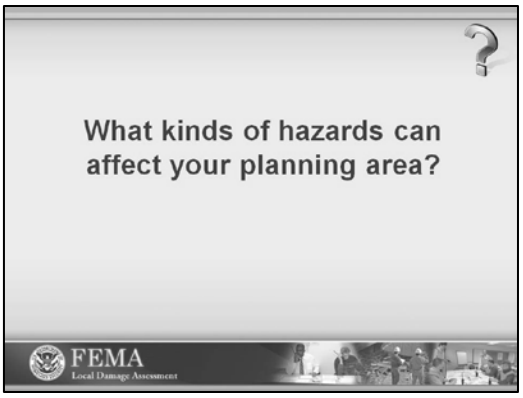
These common steps are collectively known as the hazard analysis process. By performing this process, you will be conducting risk and hazard vulnerability assessments.

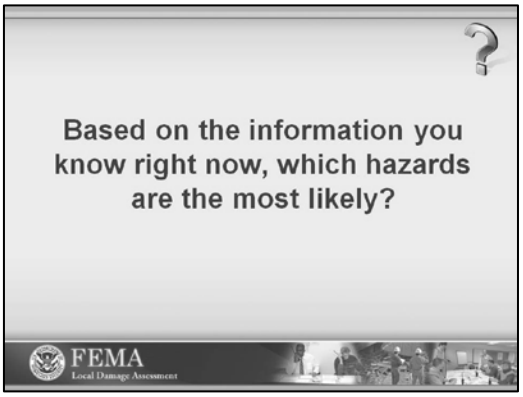


The first step in the hazard analysis process is to identify all the hazards that may occur in the community, such as hurricanes, earthquakes, or hazardous material releases.

By completing this step, you are beginning a risk assessment.

You will record the answers to the questions that appear on the next two slides in the appropriate columns on the *Identifying Hazards in Your Community* worksheet on the next page.





Individual Activity: Identifying Hazards in Your Community

Complete the worksheet as directed by the instructor.

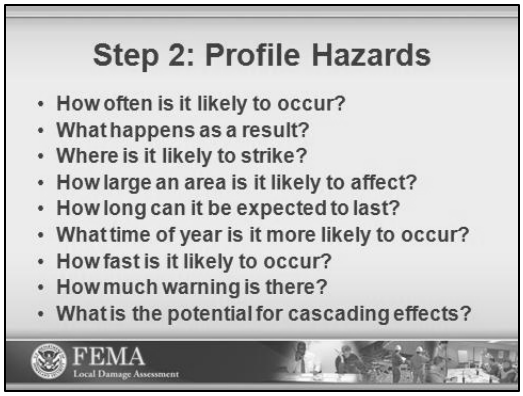
Identifying Hazards in Your Community

Instructions:

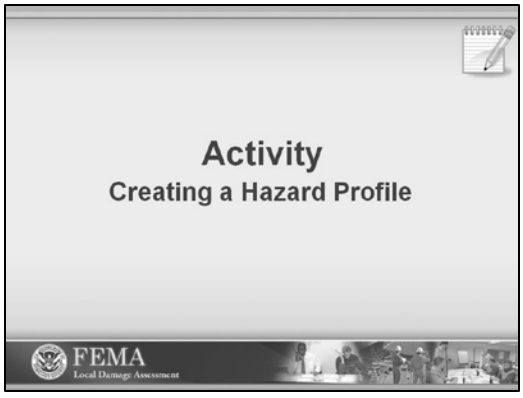
Complete each Task (column) separately as directed by your instructor.

Potential Hazards	Task A: Which hazards may occur in your area?	Task B: Which hazards are most prevalent in your area?
Avalanche		
Coastal Erosion		
Coastal Storm		
Dam Failure		
Drought		
Earthquake		
Expansive Soils		
Extreme Heat		
Flood		
Hailstorm		
Hurricane		
Land Subsidence		
Landslide		
Severe Winter Storm		
Tornado		
Tsunami		
Volcano		
Wildfire		
Windstorm		
Other: _____		
Other: _____		
Other: _____		

Adaptation of Worksheet 1 from FEMA's How-to-Guide 386-2, Understanding Your Risks: Identifying Hazards and Estimating Losses.



After creating a list of potential hazards, the next step in the continued risk assessment is to narrow down the list to the most prevalent hazards in the area and develop hazard event profiles to document the unique characteristics of each hazard type.



Choose one of the hazards marked under Task B of the *Identifying Hazards in Your Community* worksheet and begin the Hazard Profile Worksheet and the Risk Index Worksheet with information you know about the hazard. This process will enable you to identify the estimated impact of each hazard on the people, services, facilities, and structures in your community (i.e., the risks).

Individual or Group Activity: Creating a Hazard Profile

Creating a Hazard Profile

Part One Instructions

As directed by your instructor, work individually or with a partner or group to complete the Hazard Profile Worksheet based on one of the hazards from Task B of the previous worksheet (*Identifying Hazards in Your Community*).

Hazard Profile Worksheet
HAZARD:
Potential Magnitude (Percentage of the jurisdiction that can be affected):
☐ **Catastrophic:** More than 50%
☐ **Critical:** 25 to 50%
☐ **Limited:** 10 to 25%
☐ **Negligible:** Less than 10%
Frequency of Occurrence:
☐ **Highly Likely:** Near 100% probability in next year
☐ **Likely:** 10-100% probability in next year, or at least one chance in 10 years
☐ **Possible:** 1-10% probability in next year, or at least one chance in next 100 years
☐ **Unlikely:** Less than 1% probability in next 100 years
Seasonal Pattern (if applicable):
Areas Likely To Be Affected Most (by Sector):
Probable Duration:
Potential Speed of Onset (Probable amount of warning time):
☐ Minimal (or no) warning
☐ 6 to 12 hours warning
☐ 12 to 24 hours warning
☐ More than 24 hours warning
Existing Warning Systems:
Complete Vulnerability Analysis:

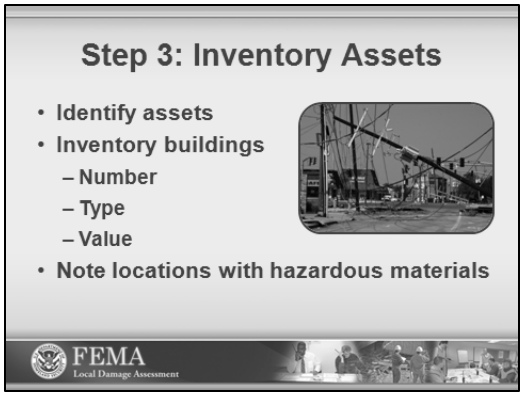
Part Two Instructions

As directed by your instructor, work individually or with a partner or group to complete the Risk Index Worksheet below, based on the hazard you listed on the Hazard Profile Worksheet. A Severity Ratings Table has been included below the worksheet for your reference.

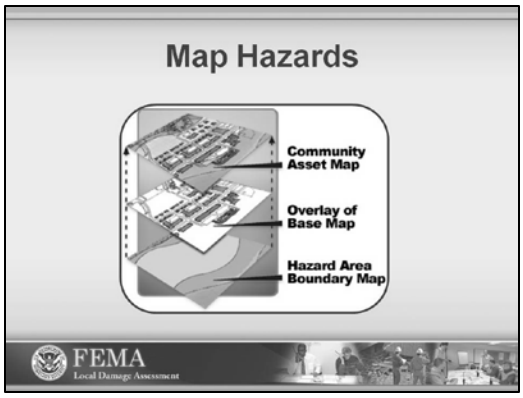
Hazard	Frequency	Magnitude	Warning Time	Severity	Risk Priority
	☐Highly likely ☐Likely ☐Possible ☐Unlikely	☐Catastrophic ☐Critical ☐Limited ☐Negligible	☐Minimal ☐6 – 12 hrs ☐12 – 24 hrs ☐24+ hrs	☐Catastrophic ☐Critical ☐Limited ☐Negligible	

Special Characteristics and Planning Considerations:

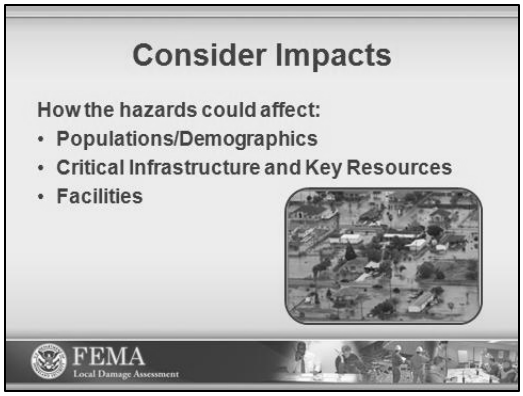
Severity Ratings Table	
Severity Level	**Characteristics**
Catastrophic	Multiple deaths Complete shutdown of facilities for 30 days or more More than 50 percent of property is severely damaged
Critical	Injuries and/or illnesses result in permanent disability Complete shutdown of critical facilities for at least 2 weeks More than 25 percent of property is severely damaged
Limited	Injuries and/or illnesses do not result in permanent disability Complete shutdown of critical facilities for more than 1 week More than 10 percent of property is severely damaged
Negligible	Injuries and/or illnesses are treatable with first aid Minimal quality-of-life impact Shutdown of critical facilities and services for 24 hours or less Less than 10 percent of property is severely damaged



During the third step in the hazard analysis process, which is also known as developing a community exposure profile, determinations are made about assets in the community that could be affected by the hazard, and a list is created of those assets.

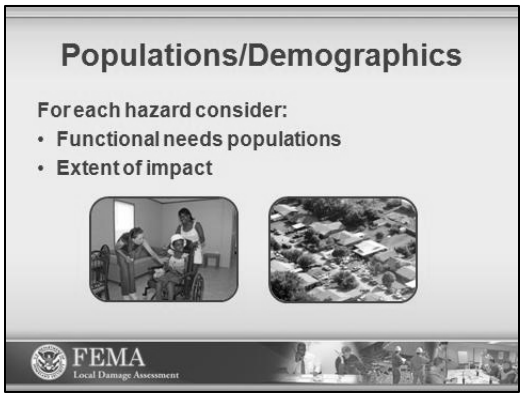


During this step, create a map of assets in the community. Then, compare this asset map to the hazard map developed in the previous step to determine which assets could be impacted by each hazard. By doing so, you are beginning the process of completing a hazard vulnerability assessment.

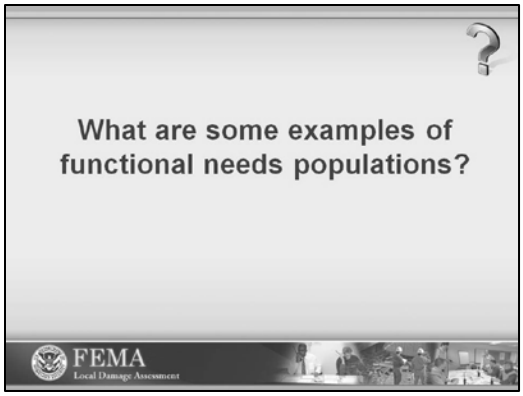


Consider the implications for response and recovery, based on how the following areas are expected to be impacted by the hazards:

- Populations/Demographics
- Critical Infrastructure and Key Resources
- Facilities



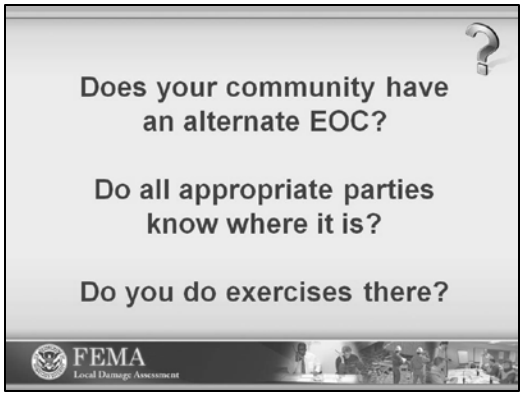
For each hazard, determine who could be impacted (e.g., all residents or certain neighborhoods/areas).



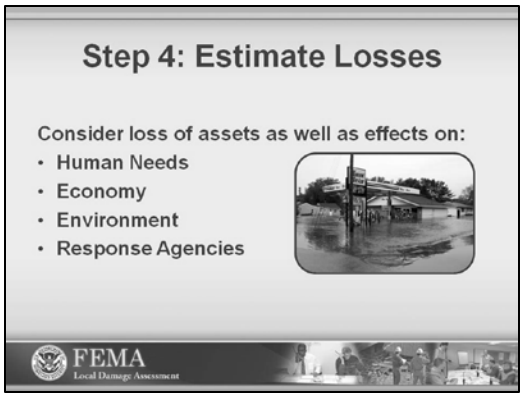
Knowing where these populations are located in your community is important so that additional measures can be taken as deemed necessary prior to and immediately following a hazard.

Consider how each hazard could affect the critical infrastructure and key resources in your community. Remember, these are the facilities, services, and functions that are necessary for the health and welfare of the population of the community.

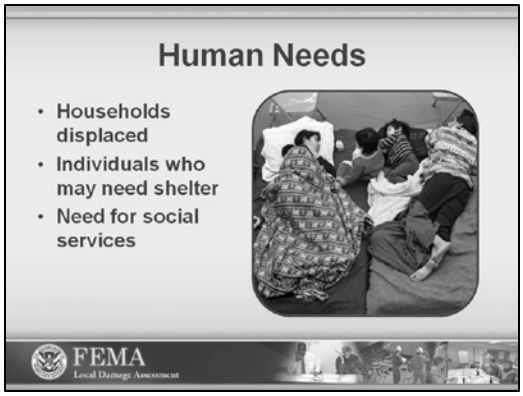
Determine what types of buildings (e.g., residential, commercial, and/or government) will be impacted by each hazard, and consider the implications.



If your answer to any of the questions on this slide is “no,” consider creating some action items that you could begin to implement so your community is better prepared.

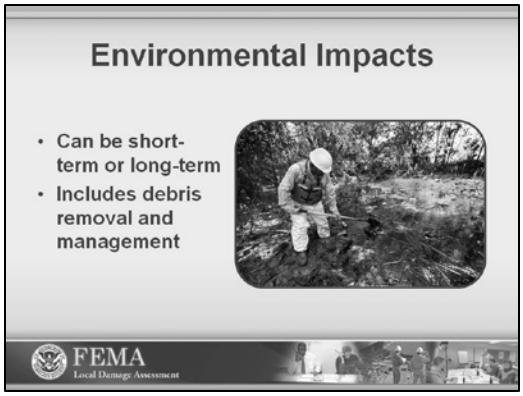


The fourth step in the hazard analysis process combines the information from the previous steps to determine an estimate of expected losses from hazards. For the hazards identified earlier that are most likely to affect the community, analysis of losses should be done in terms of people, buildings, building contents, critical infrastructure and key resources, and other important assets.



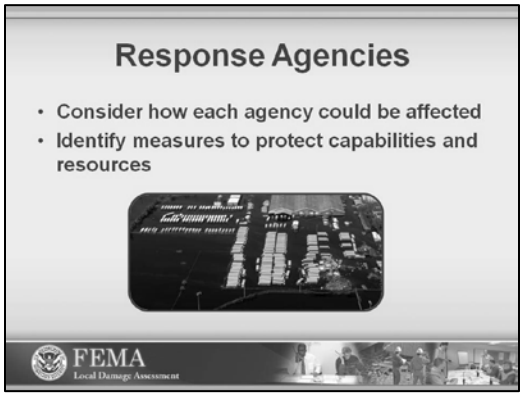
Consider the number of households who could be displaced, the number of individuals who may need public shelters, and the need for social services such as counseling or financial assistance.

Planning for the economic effects of each hazard will help the community know when additional resources may need to be requested from other agencies or jurisdictions (through mutual aid agreements and contracts) or from the State or Federal level. It will also help the community plan for the economic recovery, which can be a long process depending on the severity of the hazard.



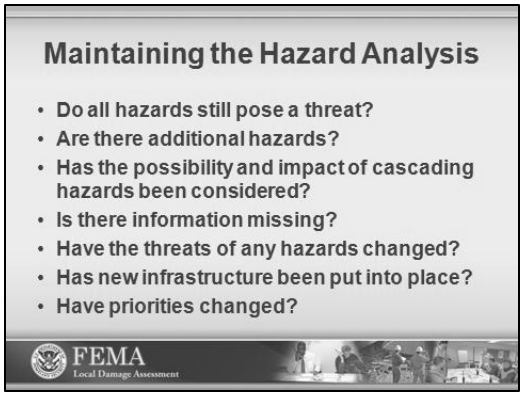
When considering how each hazard could impact the community, remember to think about both short- and long-term effects to the environment.

An environmental impact that is almost always a consideration after a hazard event is debris removal and management. Consider the amount of debris (in cubic yards) that may need to be removed and whether additional resources will be needed to deal with environmental impacts.



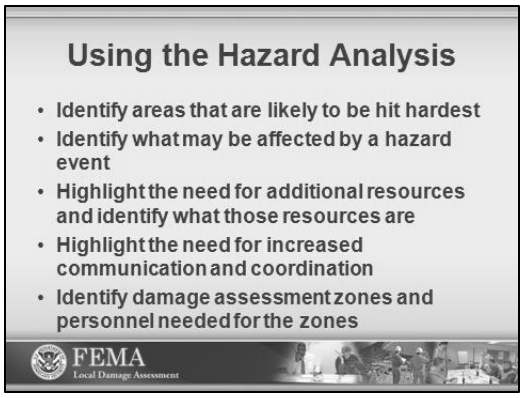
As a part of the community exposure profile, list each agency and its anticipated roles and responsibilities.

Identify measures you can take to protect the capabilities and resources of these agencies.

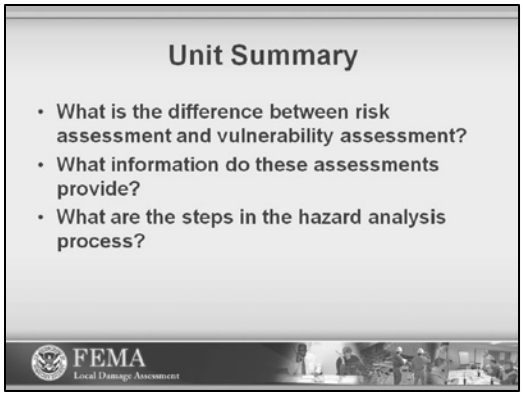


Maintaining and Using the Hazard Analysis

The hazard analysis requires maintenance. It should be periodically revisited in order to determine if it is still accurate.



The information gathered during the hazard analysis process should be used to continually reassess risks and vulnerabilities to help ensure that your community is as prepared as it can be for the hazard events it is likely to experience.



Unit Summary

This unit explained how risk and vulnerability assessments can be useful for determining priorities and allocating resources following a hazard event. You learned the process for conducting these assessments through a hazard analysis:

- Step 1: Identify Hazards
- Step 2: Profile Hazards
- Step 3: Inventory Assets
- Step 4: Estimate Losses

Remember, the information obtained through the hazard analysis process can assist you in planning damage assessment activities.

III Planning the Damage Assessment Program

Unit Objectives

Effective damage assessment begins with effective planning. Planning for incidents will allow participants to respond efficiently with a thorough and accurate damage assessment. It is imperative that the damage assessment be done well. Poor damage assessment may weaken or delay the response effort, create inaccurate loss reporting, establish inappropriate priorities, have a negative environmental impact, delay the Presidential disaster declaration process, or result in denial of Federal recovery funds.

By the end of this unit, you will be able to:

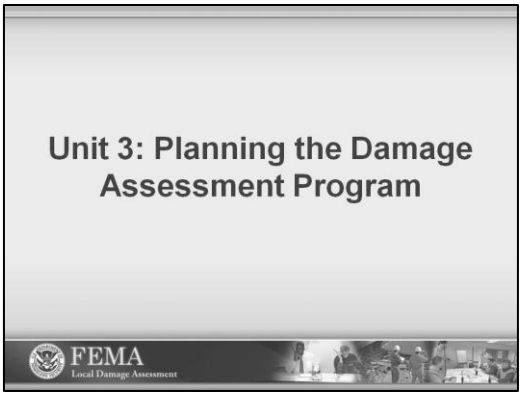
- Identify potential members of the local damage assessment planning team.
- List common steps for planning a damage assessment program.
- List planning assumptions to be included in a damage assessment plan.
- Describe guidelines for establishing local standards for damage assessment.

Toolkit Resources

The following resources are referenced in this lesson and provided in the Toolkit.

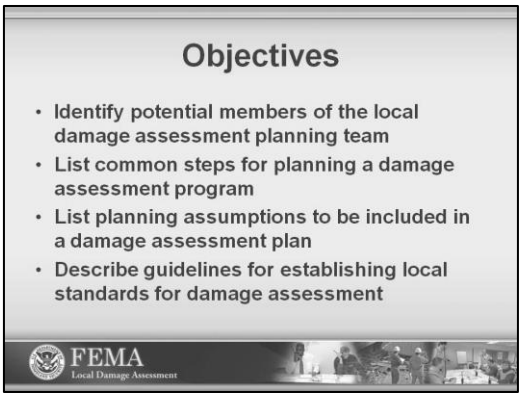
Sample Documents

- FEMA's Preliminary Damage Assessment (PDA) 4-point methodology
- Manatee County, Florida, 10-point system for damage assessment
- Damage assessment forms

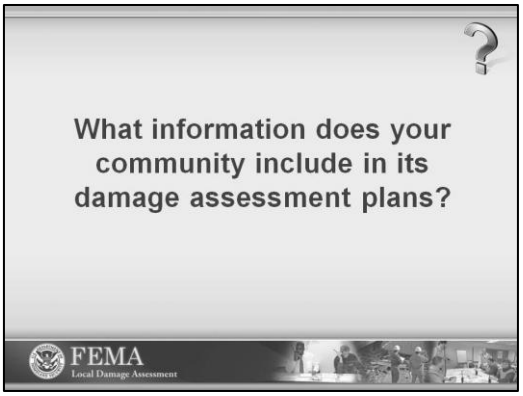


Unit Overview

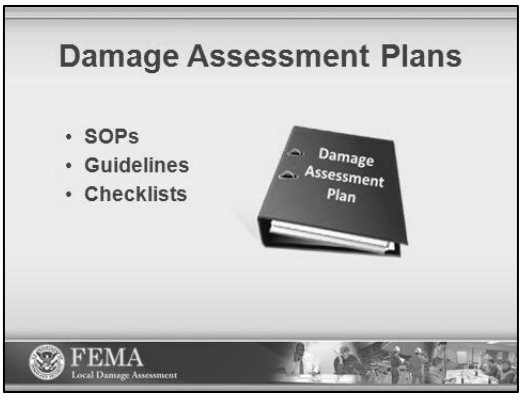
Effective damage assessment begins with effective planning. Planning for incidents will allow you to respond efficiently with a thorough and accurate damage assessment.



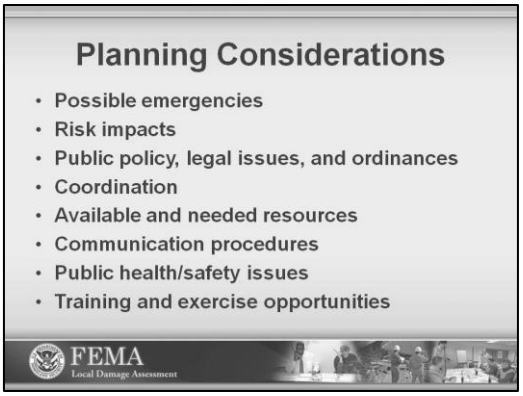
You need to know who will be on the planning team and what the steps are that they should follow when planning your community's damage assessment program.



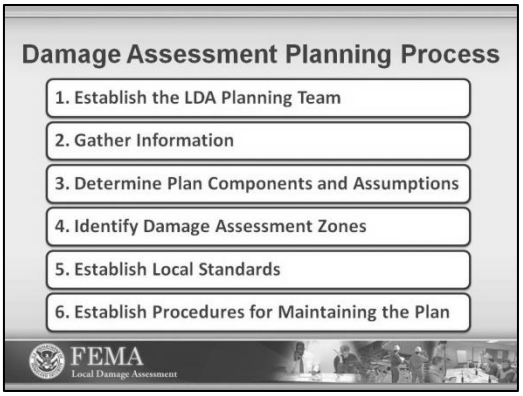
Damage Assessment Plans



The damage assessment plan is a starting point providing the necessary guidance with the flexibility to react based on the event specifics and the result of assessment information.



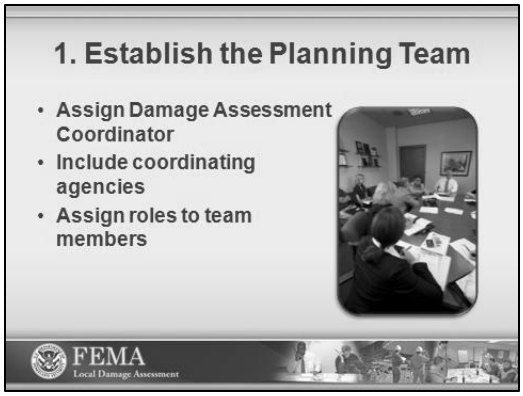
Keep in mind that every community is different; therefore, the particular needs and vulnerabilities of your community must be considered when planning for damage assessment.



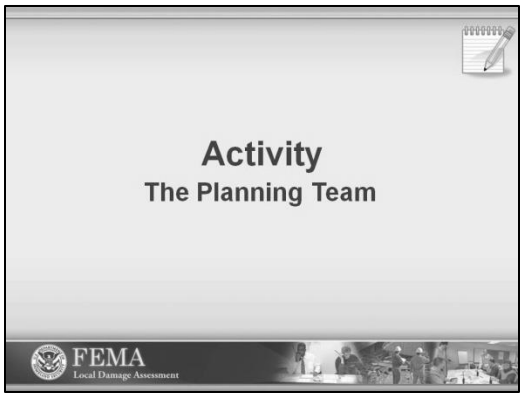
Damage Assessment Planning Process

Although there is not a standard process you must use, some common steps for planning a damage assessment program are:

1. Establish the Local Damage Assessment Planning Team
2. Gather Information
3. Determine Plan Components and Assumptions
4. Identify Damage Assessment Zones
5. Establish Local Standards
6. Establish Procedures for Maintaining the Plan



The first step in the damage assessment planning process is to identify the team responsible for planning efforts, including the coordinating agency or department that will be responsible for ensuring that the plan is created (and maintained).



As directed by your instructor, complete the worksheet on the following page.

Individual Activity: The Planning Team

The Planning Team

Instructions:

Working independently, check the boxes beside any individuals or organizations that you believe should be included on your damage assessment planning team.

Possible Planning Team Members

Local/Tribal

- ☐ Administrator/Manager's Office
- ☐ Budget/Finance Office
- ☐ Building Code Enforcement Office
- ☐ City/County Attorney's Office
- ☐ Economic Development Office
- ☐ Emergency Preparedness Office
- ☐ Fire and Rescue Department
- ☐ Hospital Management
- ☐ Local Emergency Planning Committee
- ☐ Planning and Zoning Office
- ☐ Police/Sheriff's Department
- ☐ Public Works Department
- ☐ Sanitation Department
- ☐ School Board
- ☐ Transportation Department
- ☐ Tribal Leaders

State

- ☐ Adjutant General's Office (National Guard)
- ☐ Board of Education
- ☐ Building Code Office
- ☐ Climatologist
- ☐ Earthquake Program Manager
- ☐ Economic Development Office
- ☐ Emergency Management Office/SHMO
- ☐ Environmental Protection Office
- ☐ Fire Marshal's Office
- ☐ Geologist
- ☐ Homeland Security Coordinator's Office
- ☐ Housing Office
- ☐ Hurricane Program Manager
- ☐ Insurance Commissioner's Office
- ☐ NFIP Coordinator
- ☐ Natural Resources Office
- ☐ Planning Agencies
- ☐ Police
- ☐ Public Health Office
- ☐ Public Information Office
- ☐ Tourism Department

Special Districts and Authorities

- ☐ Airport and Seaport Authorities
- ☐ Business Improvement District(s)
- ☐ Fire Control District
- ☐ Flood Control District
- ☐ Redevelopment Agencies
- ☐ Regional/Metropolitan Planning
- ☐ School District(s)
- ☐ Transit/Transportation Agencies

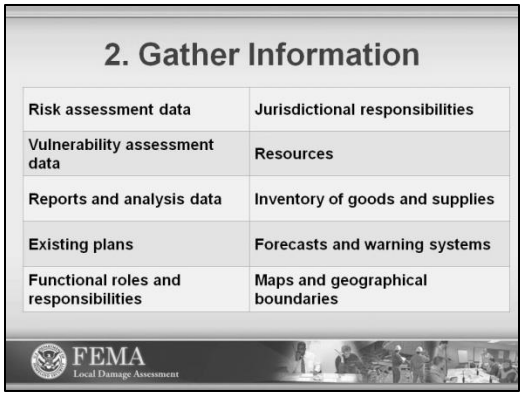
Non-Governmental Organizations (NGOs)

- ☐ American Red Cross
- ☐ Chamber of Commerce
- ☐ Community/Faith-Based Organizations
- ☐ Environmental Organizations
- ☐ Homeowners Associations
- ☐ Neighborhood Organizations
- ☐ Private Development Agencies
- ☐ Utility Companies
- ☐ Other Appropriate NGOs

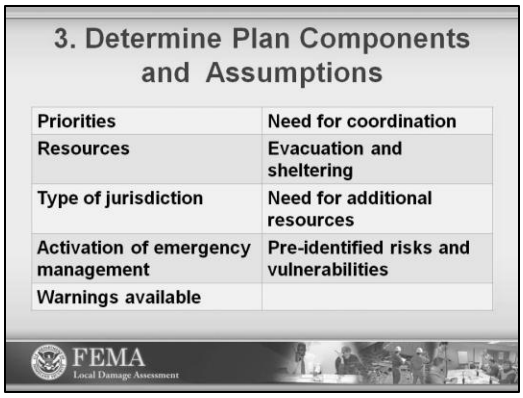
Others

- ☐ Architectural/Engineering/Planning Firms
- ☐ Citizen Corps
- ☐ Colleges/Universities
- ☐ Land Developers
- ☐ Major Employers/Businesses
- ☐ Professional Associations
- ☐ Retired Professionals

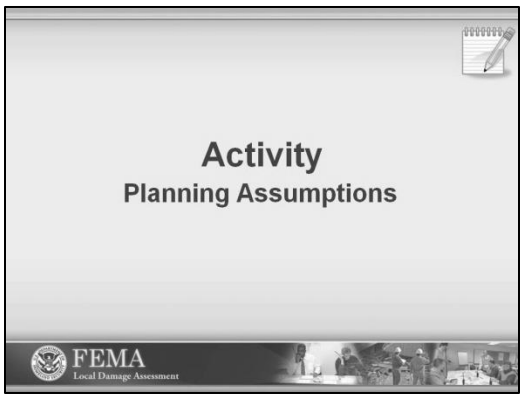
This worksheet is adapted from FEMA's how-to guide 386-1, "Getting Started: Building Support for Mitigation Planning" (September 2002).



After the planning team has been established, the members must gather a great deal of information in order to prepare for the rest of the damage assessment planning process.



You need to consider certain planning assumptions to be included in the damage assessment plan. By including these and other assumptions as a part of your damage assessment plan, you document the starting point from which the plan is developed.



Group Activity: Planning Assumptions

In this activity, you will work with your table groups to create planning assumptions that could be included in a damage assessment plan. Record your answers on the worksheet in your manual.

Listed below are examples of actual assumptions from a city's damage assessment plan:

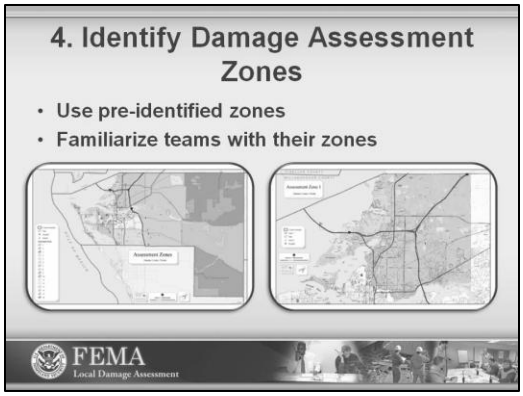
- An emergency or disaster may overwhelm the capabilities of the community and outlying areas and hinder prompt and accurate damage assessments.
- Public and private critical facilities, infrastructure, businesses, schools, and equipment may be severely damaged or destroyed.
- There will be tremendous pressure from media organizations to provide updated information regarding damage and or casualties.
- The city will have to meet numerous deadlines to provide information to Federal, State and local entities as well as the City's insurance provider.

Planning Assumptions

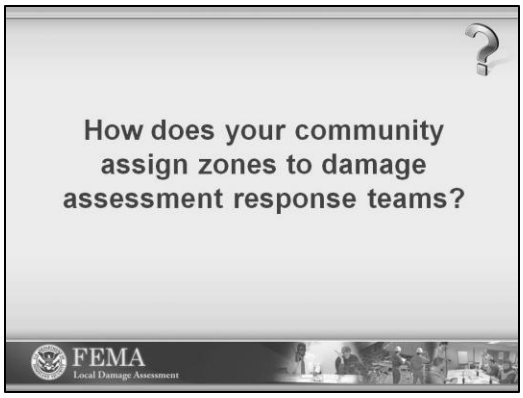
Instructions:

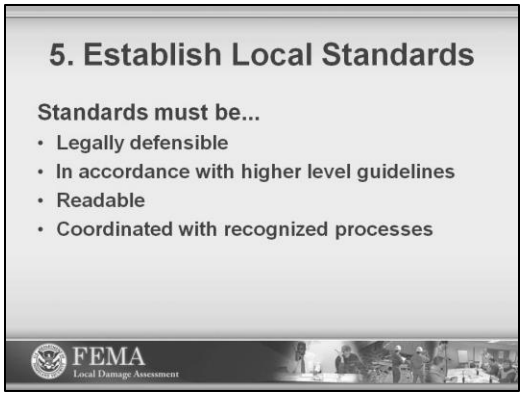
Your instructor will assign your group two types of planning considerations. With your group members, write a planning assumption for each of your assigned categories that could be included in the damage assessment plan for your community. Be prepared to discuss your responses with the rest of the class.

Planning Considerations	Assumptions to Include in the Damage Assessment Plan
Priorities	
Resources and Technical Expertise	
Type of Jurisdiction	
Warnings Available	
Coordination with Other Agencies and Jurisdictions	
Evacuation and Sheltering or Other Support	
Activation of Emergency Management	
Pre-Identified Risks and Vulnerabilities	

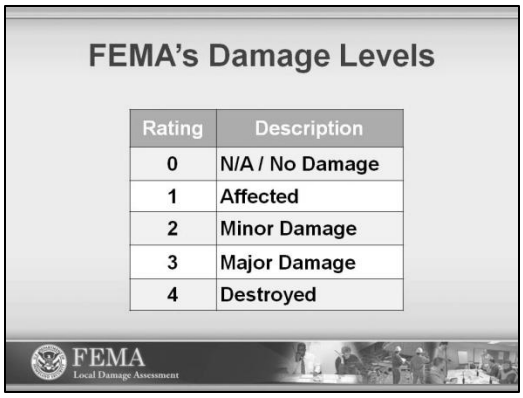


It's important to identify, in the planning process, the zones that damage assessment response team members will inspect after a hazard event, so these teams will already be familiar with their zones and can rapidly deploy or be pre-positioned to conduct damage assessment.



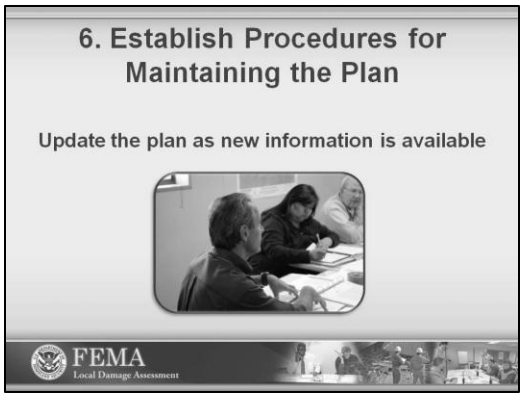


The plan should establish local, defined standards for damage assessment.

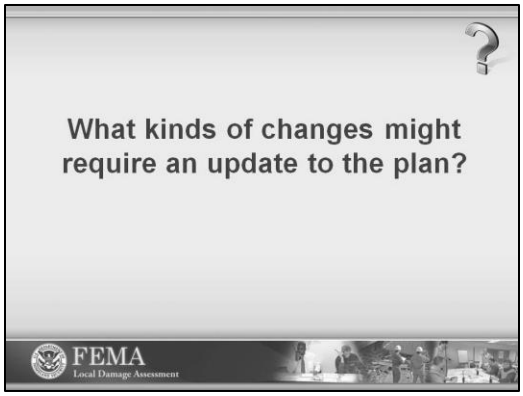


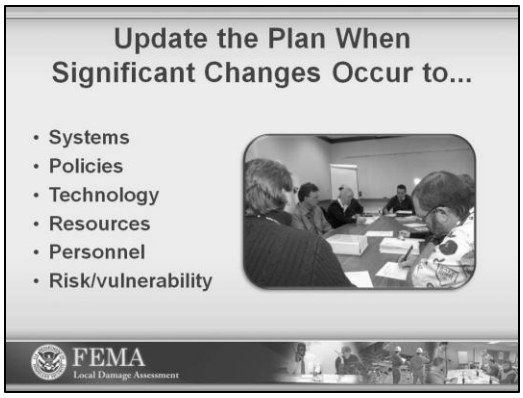
If your community would like to use a more detailed system, be sure to provide a correlation to FEMA's 4-point system.

Sample plans with damage assessment level guidelines are included in the Toolkit.

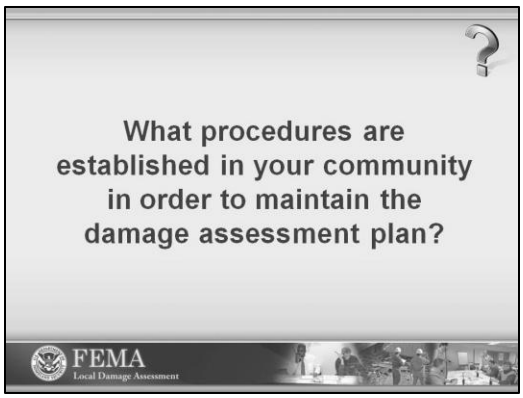


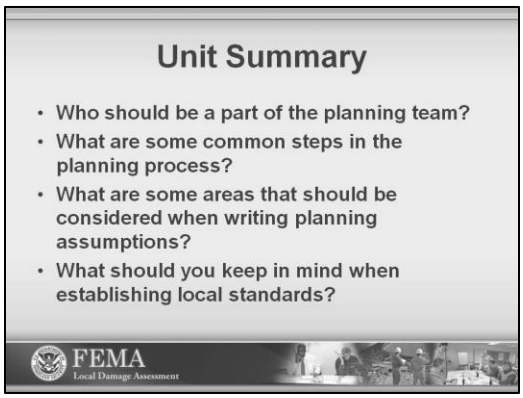
The damage assessment program may need to be modified from time to time, as new information becomes available, new infrastructure becomes a part of the community, new hazards are identified, and lessons are learned.





It is important to modify training and exercises so they suit current risk and vulnerability assessment data.


What procedures are established in your community in order to maintain the damage assessment plan?
FEMA
Local Damage Assessment



Unit Summary

In this unit, you learned about the steps for planning a damage assessment program.

First, the local damage assessment planning team must be identified, including identification of the primary agency responsible for creating and maintaining the plan. This step also includes identification of a Damage Assessment Coordinator to oversee the program.

Second, members of the local damage assessment planning team gather information to be used in the development of the plan.

Third, you should determine plan components and assumptions such as priorities, resources (including the need for acquiring more resources), and the need for multi-agency or multi-jurisdictional coordination.

Next, you should identify damage assessment zones, using the same zones as are used for vulnerability assessments. Then, you will establish local standards for damage assessment that are legally defensible and in accordance with any higher level guidelines and/or State requirements. Finally, you must establish procedures for maintaining the plan as changes occur and lessons are learned.

IV Training and Exercises

Unit Objectives

After the damage assessment plan is developed, it will need to be exercised for verification that it works and so all who perform damage assessment will be familiar with the processes, methods, forms, and responsibilities in the plan. If the plan sits on the shelf and no one uses it until an actual hazard event, chances are high that no one will remember what the plan contains or understand how to work together effectively during the response.

By the end of this unit, you will be able to:

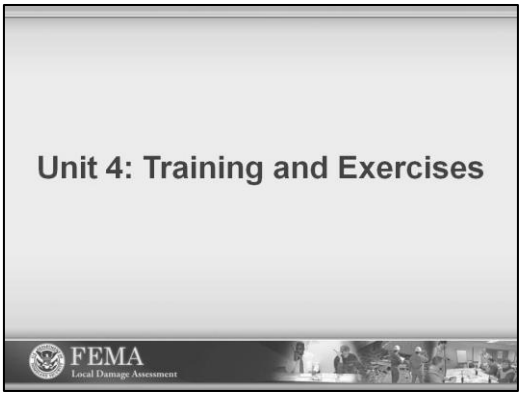
- Explain the value of training and exercises to a local damage assessment program.
- Define types of training and exercises.
- Identify resources for developing a training program for local damage assessment.
- List basic principles for effective training and exercises.
- Determine training needs for local damage assessment teams.
- Explain how training and exercises can be used to improve the damage assessment program.

Toolkit Resources

The following resources are referenced in this lesson and provided in the Toolkit.

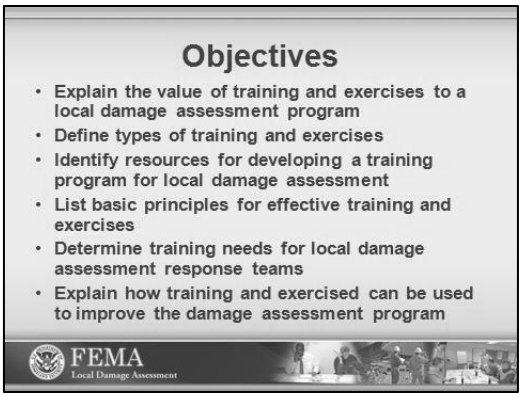
Resources

- FEMA's Emergency Management Institute (EMI)
- FEMA's Lessons Learned Information Sharing (LLIS) site

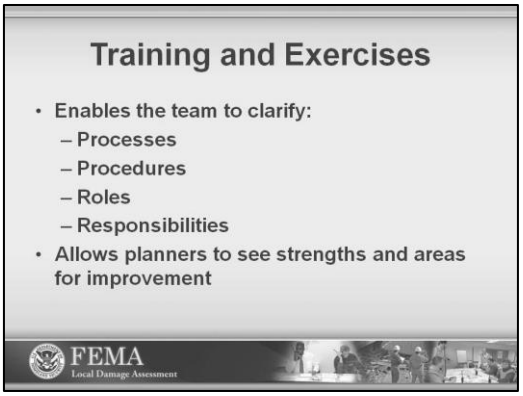


Unit Overview

After the damage assessment plan is developed, it will need to be exercised for verification that it works and so all who perform damage assessment will be familiar with the processes, methods, forms, and responsibilities in the plan.

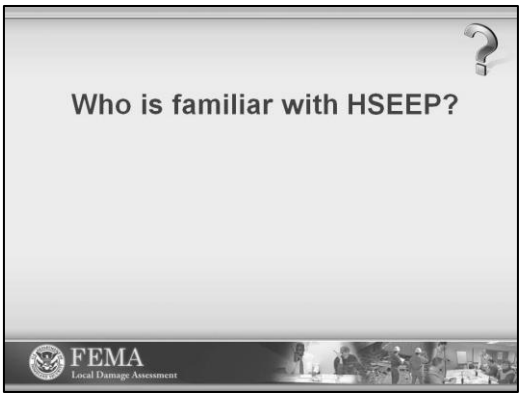


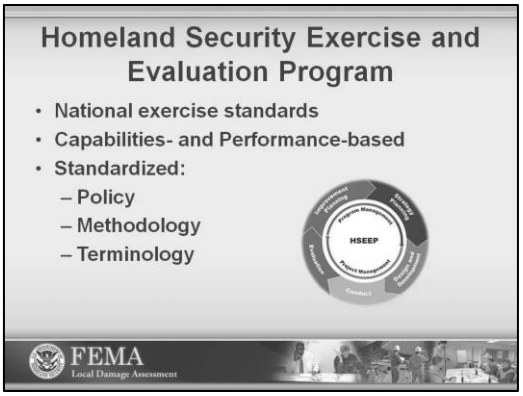
You need to know the types of training and exercises that can be used to improve your damage assessment program and what resources are available to develop the training and exercises. You should know the value that training and exercises can provide and how they can be used to improve your damage assessment program. Effective training and exercises are developed based on the identified needs for your damage assessment team.



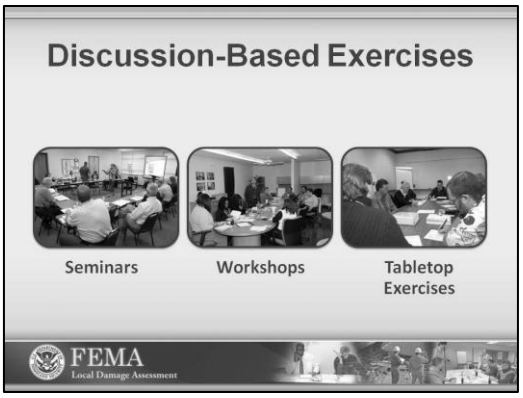
Types of Training and Exercises

Training and exercises can be used to find resource gaps and to improve the program. In addition to practicing processes, procedures, roles, and responsibilities, training also provides occasion for team building which enhances inter- and intra-agency coordination.

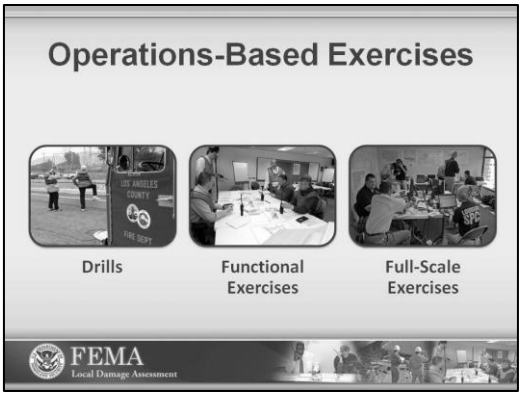




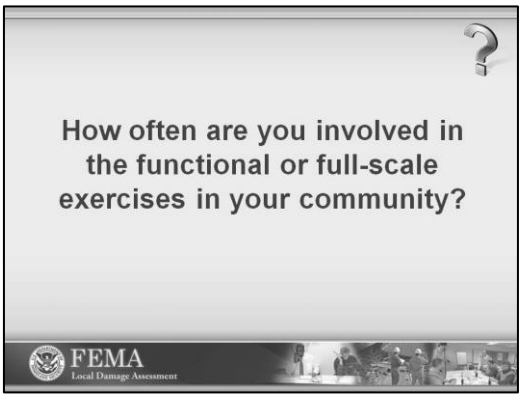
The Homeland Security Exercise and Evaluation Program (HSEEP) provides a national standard for all exercises. It is a capabilities- and performance-based exercise program.

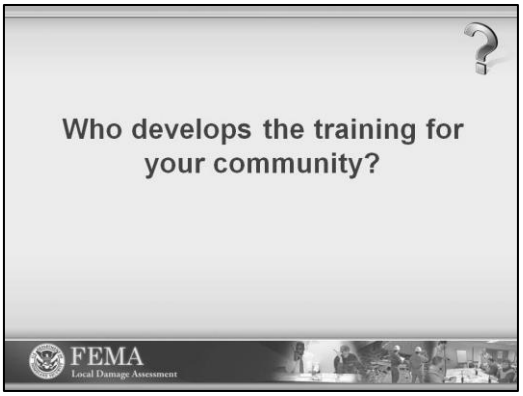


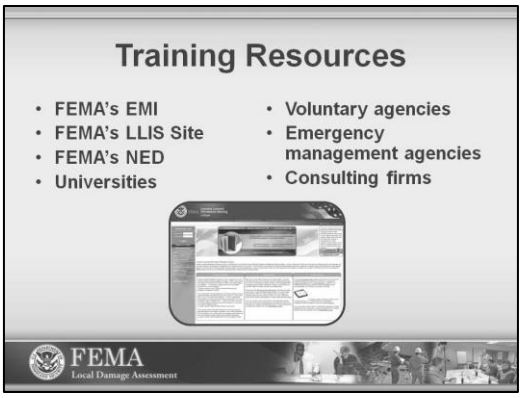
Discussion-based training and exercises center on participant discussion. They provide a forum for discussing or developing plans, agreements, training, and procedures. Discussion-based training and exercises include seminars, workshops, and tabletop exercises.



Operations-based training and exercises focus on action-oriented activities that involve the deployment of resources and personnel. These types of exercises require the execution of plans, policies, agreements, and procedures to help clarify roles and responsibilities as well as improve individual and team performances. Operations-based exercises include drills, functional exercises, and full-scale exercises.

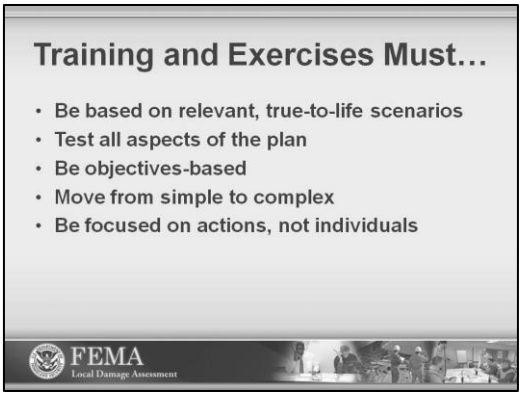






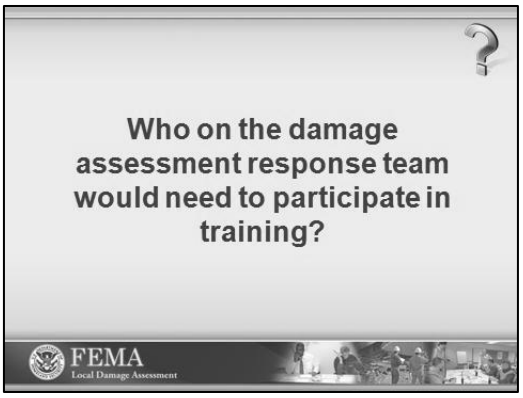
Although the most effective training experiences you can provide are those that consider the community's specific hazards and vulnerabilities, it may not be necessary to develop all-new training.

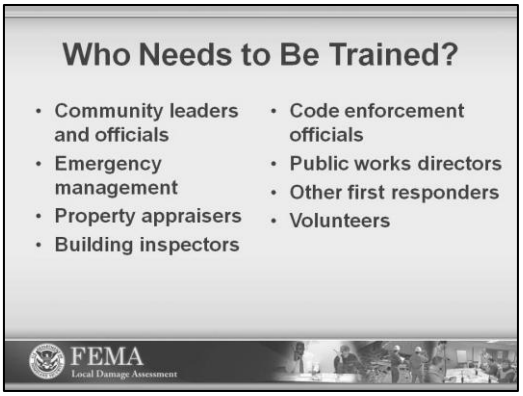
Links to EMI and LLIS are provided in the Resources section of the Toolkit.



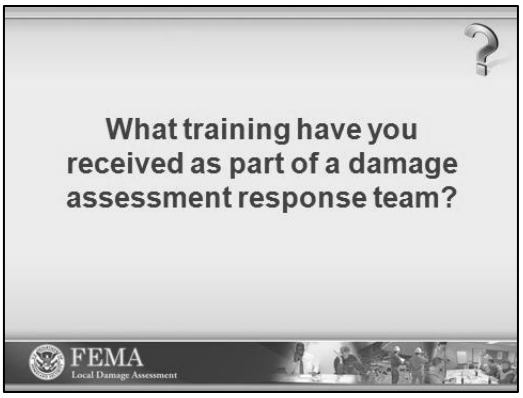
Basic Principles for Effective Training and Exercises

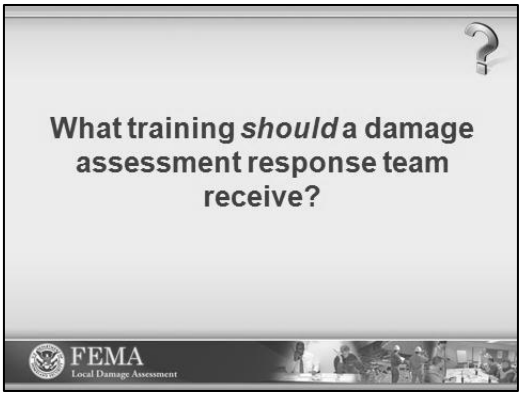
Exercises should challenge participants with real-life situations in a no-failure environment.

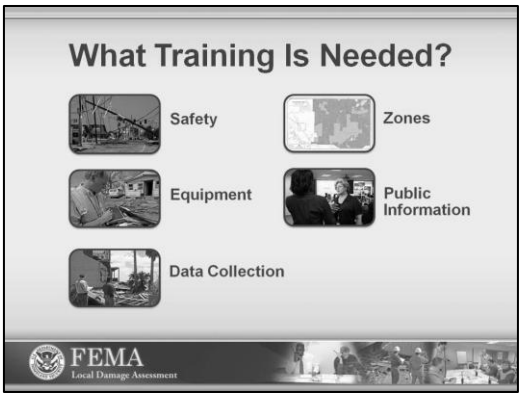




Anyone involved in damage assessment needs to participate in the training and exercise program.
In addition, you should provide training to any other individuals with specific damage assessment roles and responsibilities.

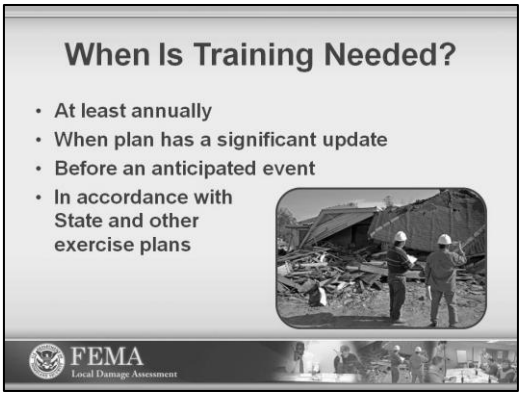




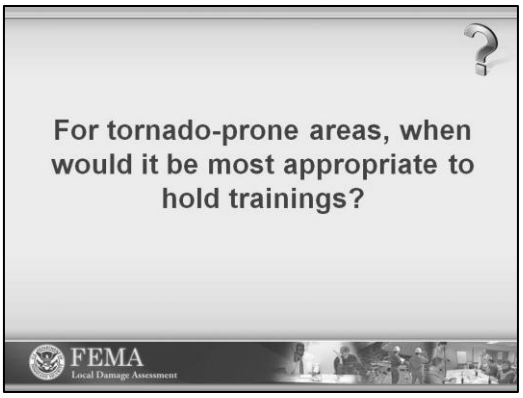


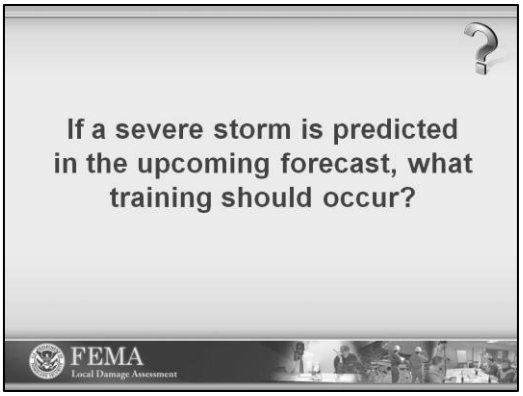
Training and exercises should be developed based on the identified needs of your damage assessment team.

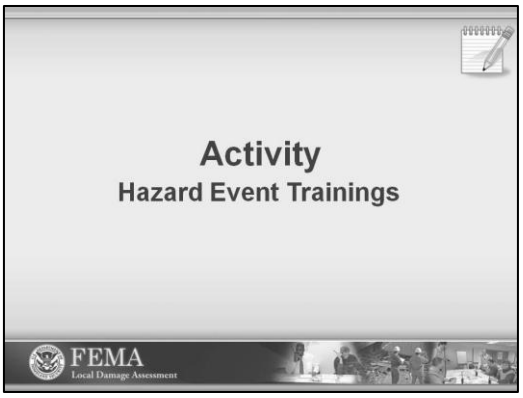
Potential areas for training can include safety, equipment, data collection, zones, and public information.



So that all damage assessment team members are prepared for a hazard event, training should occur at least annually and in accordance with State and other exercise plans.







In groups, you will read the scenario and then answer related questions. Your group will present your answer to the rest of the class.

Group Activity: Hazard Event Trainings

Hazard Event Trainings

Instructions:

Read the following scenario, and then answer the questions below in the space provided.

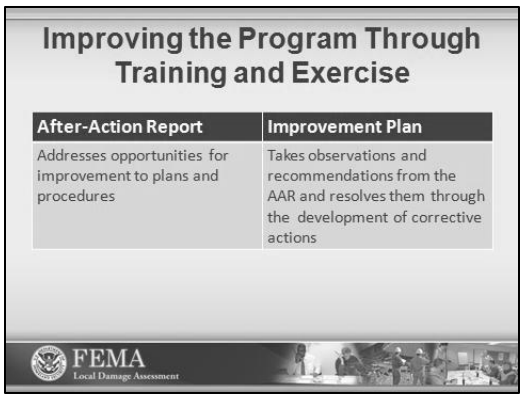
A winter storm has rolled in, and your community has received 8 inches of snow on top of freezing rain. The first-in team has cleared the main roads and reported areas with downed power lines, and public works is currently working with the local utility companies to repair the lines. The first-in team has provided a list of safe areas to enter for beginning damage assessment.

1. When would it be most appropriate to hold trainings for this event?

2. What information should be provided to damage assessment response teams prior to being deployed to their zones?

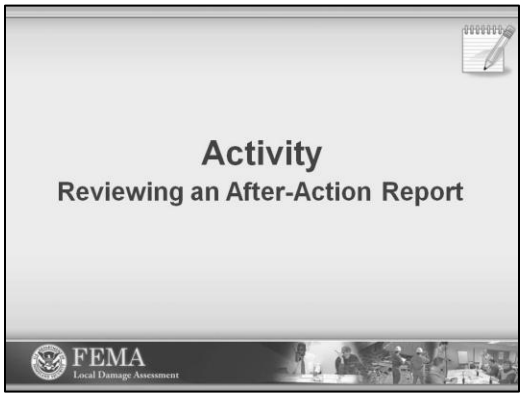
3. What possible cascading emergencies could occur during the storm and immediately after the storm?

4. How would the team need to prepare for the severity and magnitude of these events?



Using Training and Exercises to Improve the Program

Through conducting training and exercises and evaluating the results, you can improve your damage assessment program. Two documents generated by the exercise team that will help are the After-Action Report and the Improvement Plan.



Group Activity: Reviewing an After-Action Report

In groups, you will read an excerpt from a real after-action report, and present your recommendations to the rest of the class.

After-Action Report

Instructions:

Read the following excerpt from a real after-action report. Then record your group's responses to the questions in the space provided.

Within hours after the response to the fire, it became apparent that the services of a structural engineer would be required prior to emergency responders entering the fire scene.

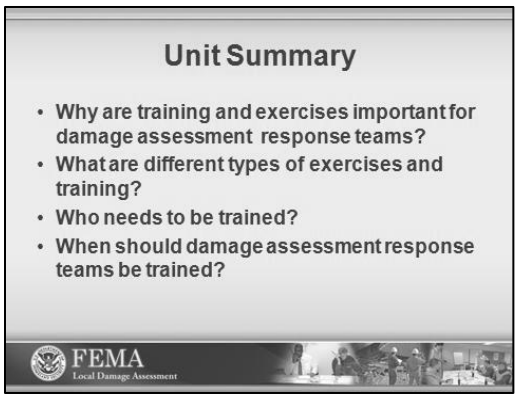
Within an hour of the request, a structural engineer was located that was willing and qualified to enter the fire zone to evaluate the strength of the facility for purposes of the safety of fire and rescue personnel.

Fortunately, sufficient fire turnout apparel and equipment was available to outfit the engineers whose services were to be required for days to come.

Source: After-Action Report, Imperial Sugar Dixie Crystal Plant, February 7, 2008 Chatham Emergency Management Agency, available from http://training.fema.gov.

Based on the information from the after-action report, what recommendations would you make to improve response actions in future similar situations?

Explain your rationale behind those recommendations.



Unit Summary

In this unit, you learned about the importance of training and exercising your damage assessment plan. You learned about different types of exercises that can be used to practice the plan, facilitate effective inter- and intra-agency coordination, and clarify processes and procedures.

You also learned who needs training, what training they need, and when they need it. Resources were provided for developing training and exercises. In addition, you learned that after-action review is critical to identifying areas for improvement and enhancing the readiness of your community.

V Operations

Unit Objectives

This unit discusses the operations of local damage assessment. It recommends potential members and responsibilities for first-in teams. It also outlines the process for local workers responding to an event as part of the damage assessment response team. Finally, reminders are included about how response team members have considerations beyond damage assessment.

By the end of this unit, you will be able to:

- Identify potential members of the local damage assessment response team.
- List types of information that should be included in pre-deployment briefings.
- Describe basic procedures for damage assessment.
- Assign damage level ratings based on visual inspection.
- Describe special considerations regarding the human impact of disasters.

Toolkit Resources

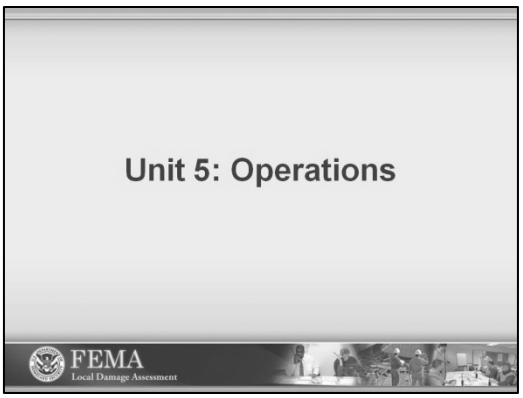
The following resources are referenced in this lesson and provided in the Toolkit.

Sample Documents

- Standard Operating Guide for First-In Teams
- Damage Assessment Forms

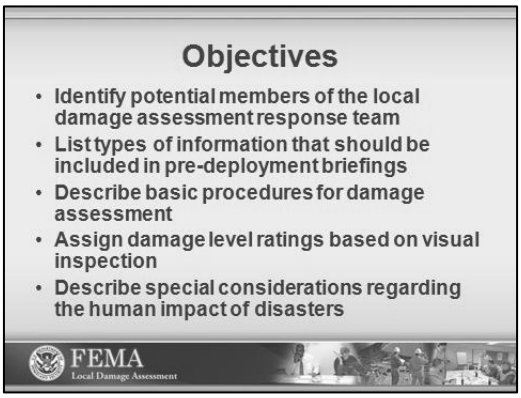
Resources

- U.S. Army Corps of Engineers (debris calculations)
- HAZUS-MH
- Geographic Information Systems (GIS)

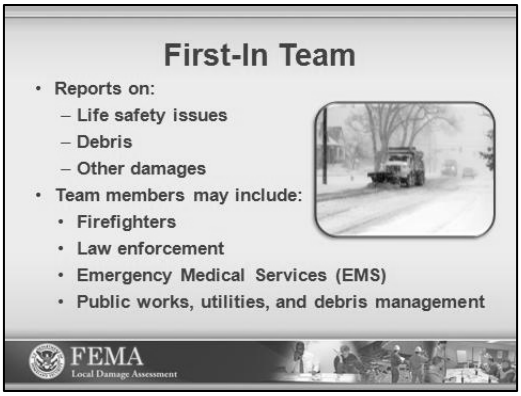


Unit Overview

In this unit, you will learn the operations of local damage assessment. This unit recommends potential members and responsibilities for first-in teams. It also outlines the process for local workers responding to an event as part of the damage assessment response team. Finally, reminders are included about how response team members have considerations beyond damage assessment.

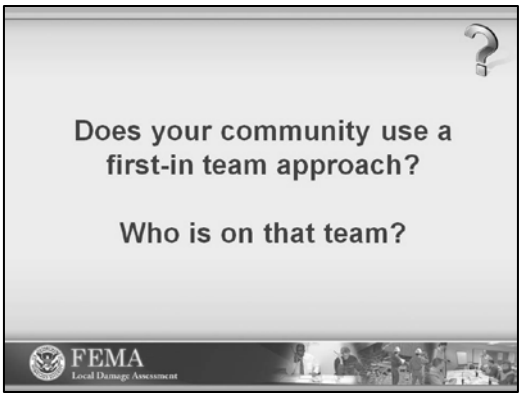


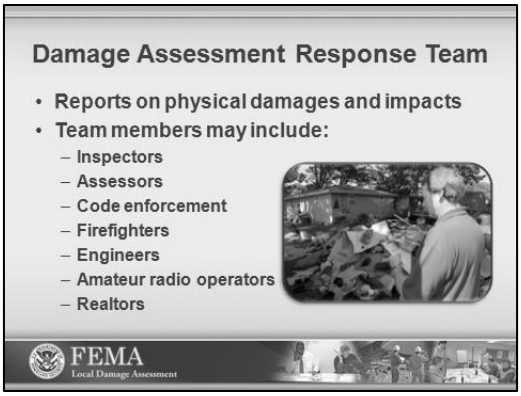
You will learn who should be a part of your local damage assessment team and the procedures they should follow for damage assessment, including assigning damage level ratings. You will also learn the types of information that should be included in pre-deployment briefings. There is also some discussion on the human impact of disasters.



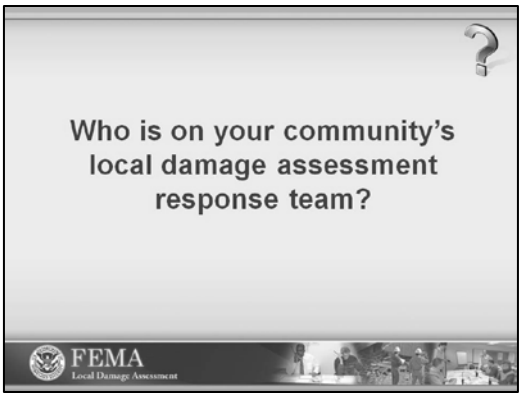
Response Teams

The “first-in team” can be a valuable asset to your community’s damage assessment program by conducting preliminary impact assessments and reporting on life safety issues, debris, and other damages observed out in the community.



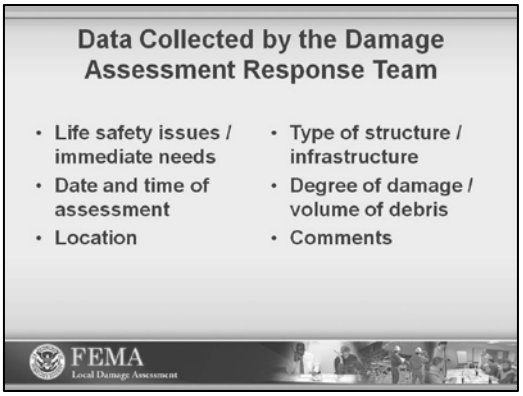


The damage assessment response team evaluates and documents the physical damage caused by an event and its potential impact on the community.

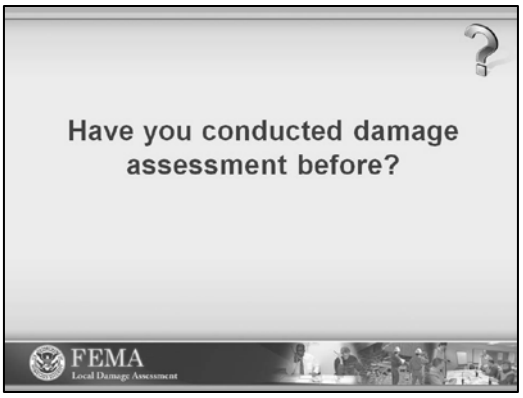


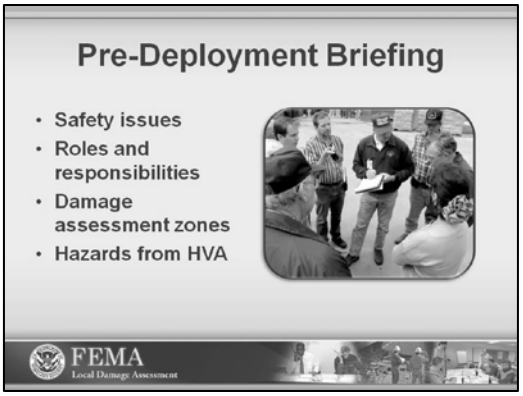
Responsibilities should be clearly designated so that efforts are not duplicated. To effectively coordinate efforts and compile information, a Damage Assessment Coordinator should be designated as the facilitator/leader of the process.

The individual selected to chair the damage assessment response team should be an individual who is familiar with the community as a whole and who would have the time and initiative to thoroughly complete the assessment.



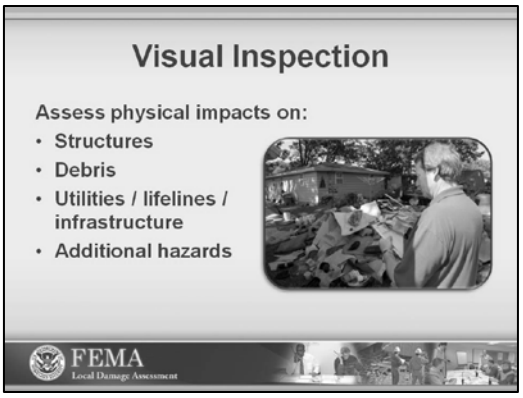
When the damage assessment response team is out in the community, members will be recording a great deal of information, using the standards and procedures defined in the community's damage assessment plan.





Prior to damage assessment response teams going out into the community, they should be briefed about the current situation and what they might expect in the field, based on available information.

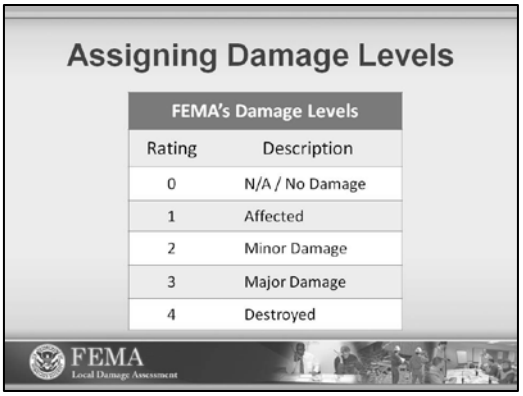
All personnel assigned to the damage assessment response team should receive a safety briefing as part of the pre-deployment briefing.



Damage assessment response teams should determine the perimeter of the damaged area, remembering to report only disaster-related damages and life safety issues.

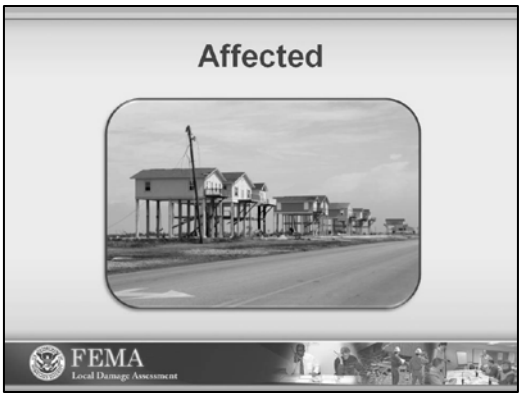
Basic Procedures

The U.S. Army Corps of Engineers has developed specific techniques for calculating debris estimates. You can find a link to more information in the Resources section of the Toolkit.



A description of FEMA's damage levels is included in the Toolkit.

Keep in mind that damage assessment is not an exact science. When performing damage assessment, you should refer to the damage level descriptions used by your community (which should be in accordance with FEMA's damage levels) and provide supporting information for why a particular rating was chosen.



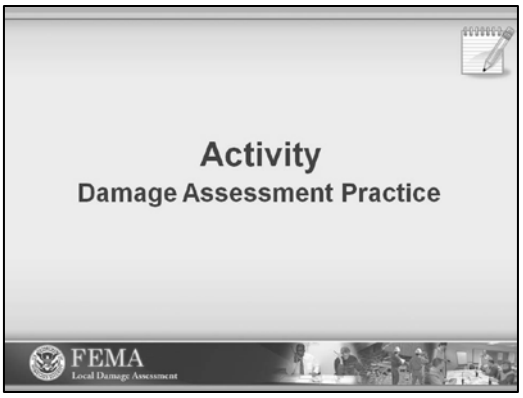
These homes were affected with minimal damage to their structure and/or contents and are habitable without repairs.

This category of damage also includes homes that are inaccessible by normal means, due to disaster-related road closures (e.g., bridge out, road flooded or blocked by debris, landslide, mudslide, severe erosion, washed out, etc.).

This is minor damage. Minor damage encompasses a wide range of damage and is generally the most common type of damage. Minor damage exists when the home is damaged and uninhabitable, but may be made habitable in a short period of time with home repairs.

This constitutes major damage. Major damage exists when the home has sustained structural or significant damages, is uninhabitable and requires extensive repairs.

Destroyed means the structure is a total loss or damaged to such an extent that repairs are not economically feasible.



You will be shown a series of photos. Working with your group, discuss each photo and assign an appropriate damage rating based on FEMA's damage levels, as defined in the activity materials.

Group Activity: Damage Assessment Practice

Group Activity: Damage Assessment Practice

Instructions:

You will be shown photos of homes damaged in a disaster. Discuss each photo with your group and determine a damage level rating based on the information below. Be prepared to justify the rating you chose. Damage level descriptions are included on the next page.

Photo 1

Photo 2

Photo 3

FEMA Damage Levels

There are five degrees of damage levels: No Damage, Affected, Minor Damage, Major Damage, and Destroyed. Each level is described in detail in the following paragraphs.

No Damage

No damage is assigned when a structure has received no damage as a result of the hazard event.

Affected

This category includes dwellings with minimal damage to structure and/or contents and the home is habitable without repairs. This category of damage includes homes that are inaccessible by normal means, due to disaster-related road closures (e.g., bridge out, road flooded or blocked by debris, landslide, mudslide, severe erosion, washed out, etc.).

Minor Damage

Minor damage encompasses a wide range of damage and is generally the most common type of damage. Minor damage exists when the home is damaged and uninhabitable, but may be made habitable in a short period of time with home repairs. Some of the items that determine minor damage are listed below:

- Damages less than the maximum Housing Assistance Repair Grant.
- Windows or doors blown in.
- One foot or more of water/sewer backup in basement (i.e., furnace, water heater damage).
- Has less than 50% damage to structure.

Major Damage

Major damage exists when the home has sustained structural or significant damages, is uninhabitable and requires extensive repairs. Any one of the following may constitute major damage.

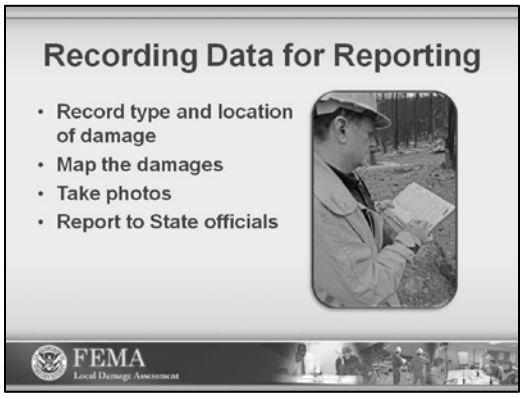
- Substantial failure of structural elements of the residence (e.g., walls, roof, floors, foundation, etc.).
- Damage to the structure that exceeds the Home Repair Grant maximum.
- Has more than 50% damage to structure.
- One foot or more of water on the first floor (of a home with basement).

Destroyed

Destroyed means the structure is a total loss or damaged to such an extent that repairs are not economically feasible. Any one of the following may constitute a status of destroyed:

- Structure is not economically feasible to repair.
- Structure is permanently uninhabitable.
- Complete failure of major structural components (e.g., collapse of basement walls/foundation, walls, or roof).
- Only foundation remains.
- Two or more walls destroyed and roof substantially damaged.
- House pushed off foundation
- An unaffected structure that will require removal or demolition (e.g., homes in imminent danger due to impending landslides, mudslides, or sinkholes; beachfront homes that must be removed due to local ordinance violations as a result of beach erosion).

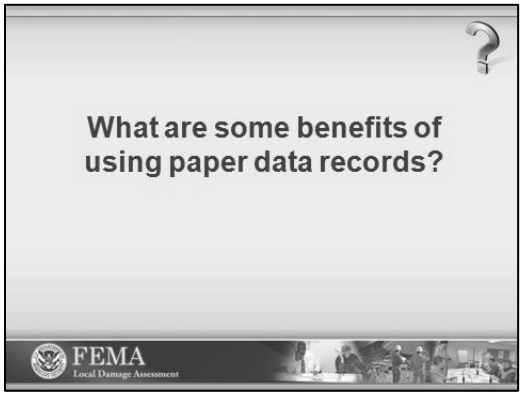
The purpose of differentiating levels of damage is to distinguish between the types of assistance required. Inspectors do not assess damage with the actual cost of the residence in mind but according to whether repairs are extensive or not. The feasibility of repairs and the condition of the unit determine whether or not repairs can be made under the Home Repair limits. The category of damage listed should be based on the type of assistance required.

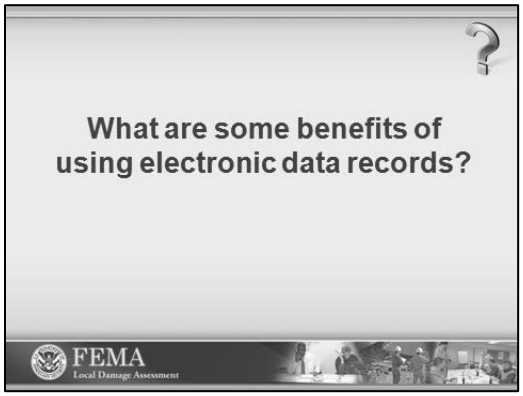


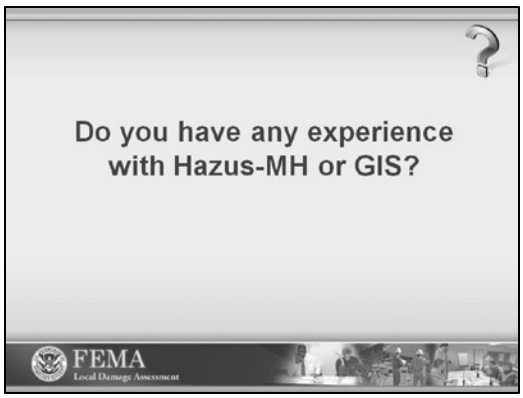
Recording and Reporting

Information about the type and location of damage should be recorded. This includes mapping the damage in addition to providing a description.

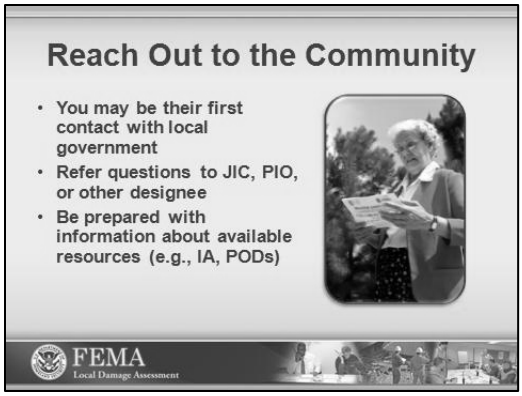
Forms need to be completed correctly and efficiently so that information about the impact of the disaster can be reported in a timely manner.



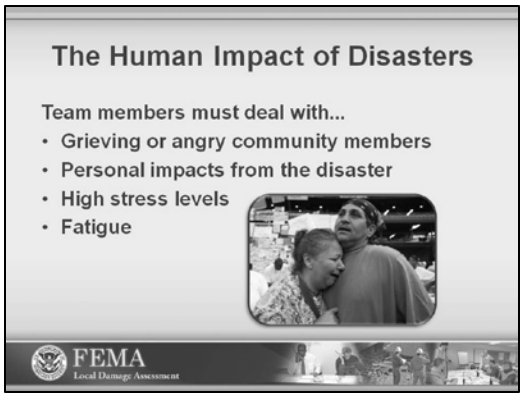




You can find more information about HAZUS-MH and GIS in the Resources section of the Toolkit.

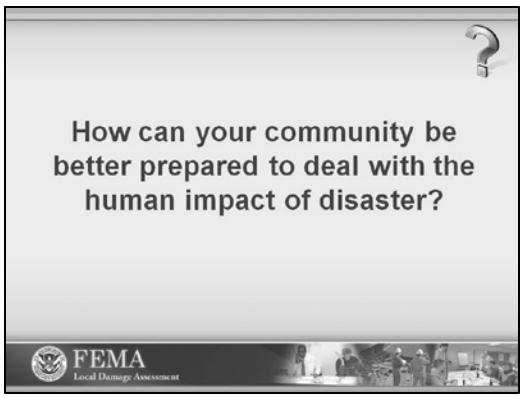


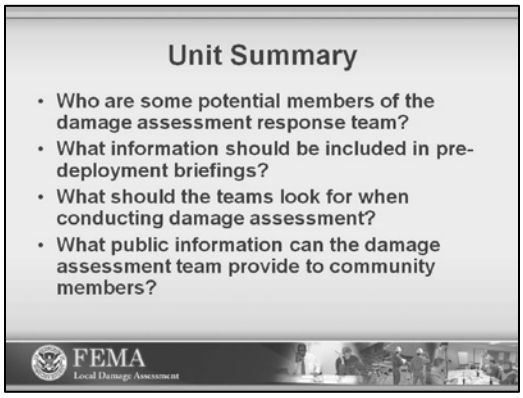
Many times following an event, the damage assessment response team may be the first contact that the community has with any local government representative.



Because the damage assessment response team members are on the "front line" of the disaster, you will be exposed firsthand to the human impact of the event.

The Human Impact of Disasters


How can your community be better prepared to deal with the human impact of disaster?
FEMA
Local Damage Assessment



Unit Summary

In this lesson, you learned about local damage assessment operations, including the recommended members and responsibilities of first-in teams and damage assessment response teams, as well as some basic procedures for conducting local damage assessment. You also received reminders about considerations for damage assessment response team members that extend beyond assessing damage.

Remember, because all communities are different, specific procedures for damage assessment should be defined in the community-specific damage assessment plan.

VI Data Collection and Analysis

Unit Objectives

Damage assessment activities drive the rest of the response and recovery actions. It is critical to collect accurate and thorough information and to maintain the appropriate documentation.

This unit describes methods for documentation and record keeping as a part of your damage assessment program in addition to how that data can be used after the event.

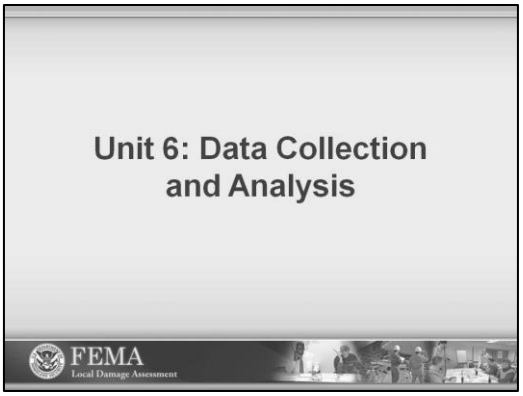
By the end of this unit, you will be able to:

- Explain how damage assessment information is used after the event.
- Explain documentation and record-keeping methods for effective damage assessments.

Toolkit Resources

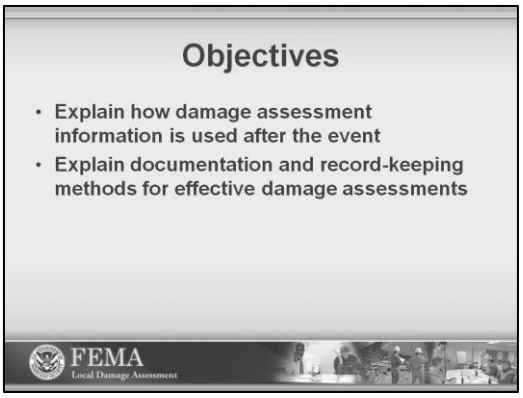
The following resource is referenced in this lesson and provided in the Toolkit.

Damage Assessment after the Paso Robles (San Simeon, California) Earthquake: Lessons for Emergency Management

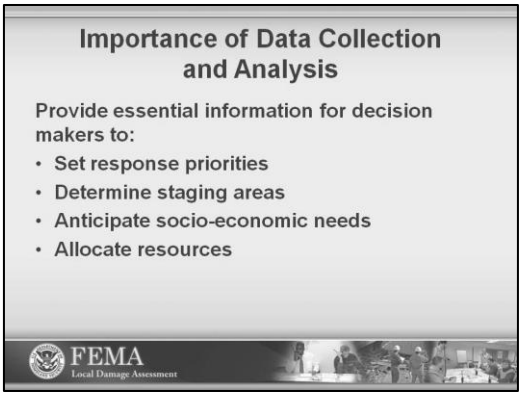


Unit Overview

As you have learned, damage assessment activities drive the rest of the response and recovery actions. It is critical to collect accurate and thorough information and to maintain the appropriate documentation.

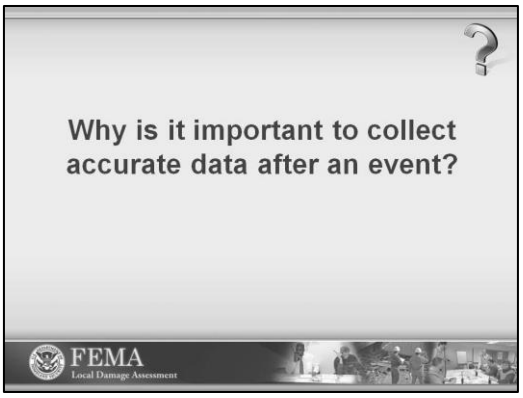


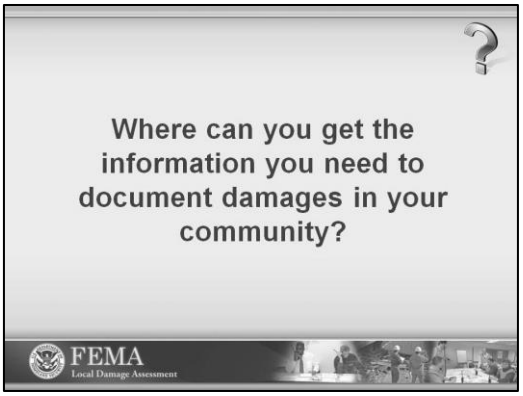
In this unit, you will learn about methods for documentation and record keeping as a part of your damage assessment program. You will also learn how that data can be used after the event.

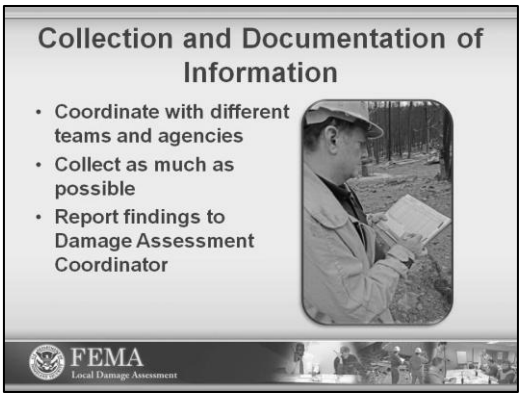


Importance of Data Collection and Analysis

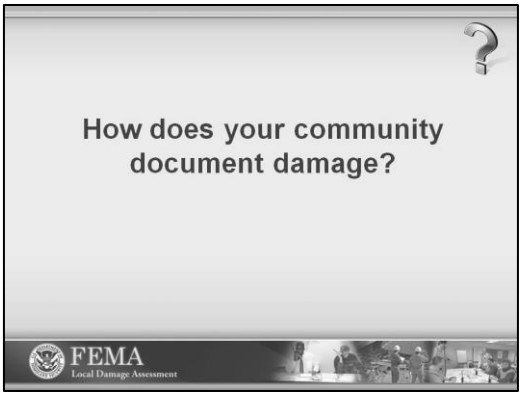
The information collected by damage assessment response teams is used for many purposes.

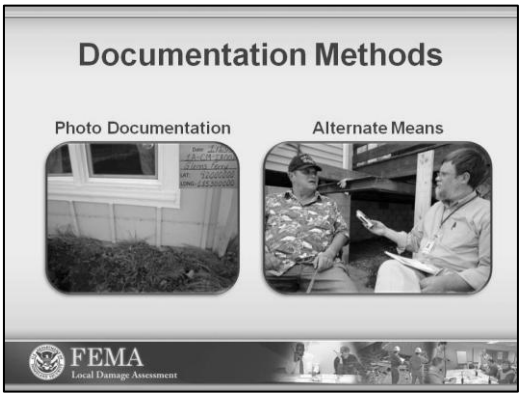






Collect as much information as possible to document the damage and report it through the system established by your damage assessment plan.





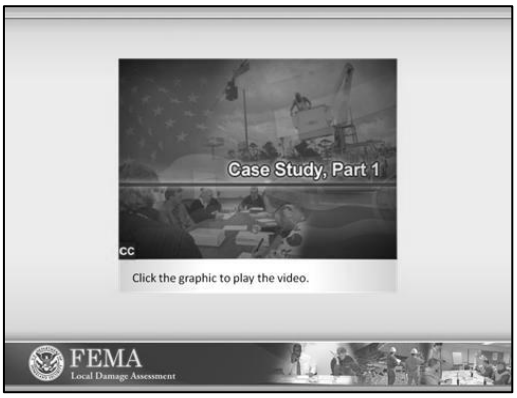
Documentation of damage can be recorded on electronic or paper forms.

Photos and video are also important means of documentation. Be sure to keep records of where and when the photos or videos were taken.

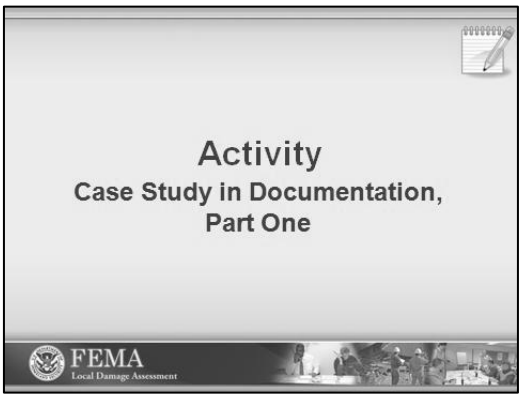
One way to do this is to complete a location form and include it in the photo. Another way is by using a digital camera with built-in GPS that can stamp each photo with the date, time, and precise location where it was taken.

Information that can be provided by local residents through email, your agency's social media site, or an electronic form that can be submitted online to provide the degree of detail you need, with contact information so your agency can follow up for more information. (If you use this method, be sure to explain the intended use of the information and make it clear that completing the form does not constitute an application for assistance.)

Remember that verification of information is crucial.



This video presents a real-life example of the importance of documentation.



Individual Activity: Case Study in Documentation, Part One

After viewing the video, you will reflect on documentation of damage assessment following the scenario described and answer related questions. A worksheet is included for this purpose.

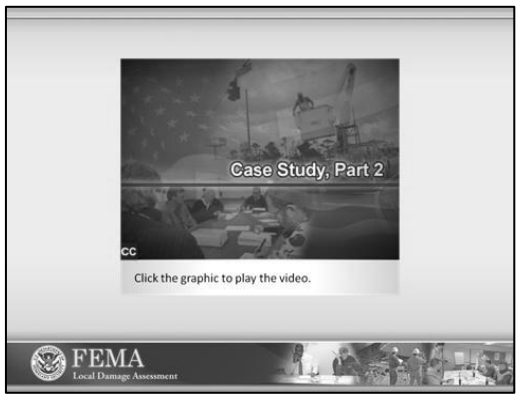
Case Study in Documentation, Part One

Instructions

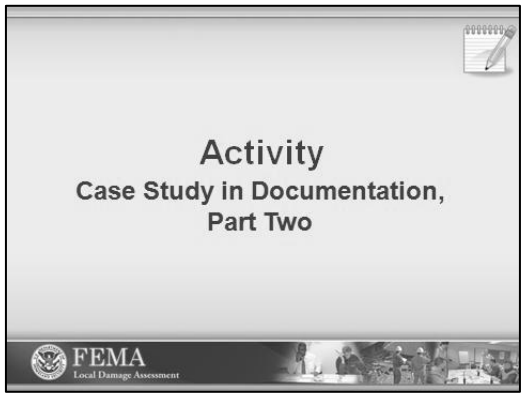
Consider the documentation of each of the hazard events that impacted the City of Calais (as discussed in the video), and answer the questions that follow.

1. What are some specific ways for a local damage assessment response team to ensure that State and Federal officials are able to see and understand the full impact of disaster damages in a situation like the storms experienced by Washington County, Maine?

2. How can you plan for challenges that a damage assessment response team will face in a situation like this, in which multiple storms occur back-to-back?



This video continues with a real-life example of the importance of documentation.



After viewing this part of the video, you will reflect on the scenario described and answer related questions. A worksheet is included for this purpose.

Individual Activity: Case Study in Documentation, Part Two

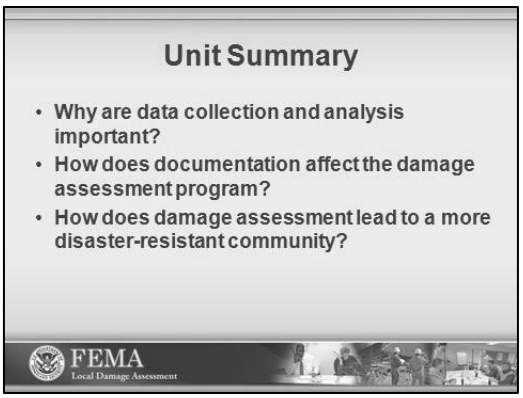
Case Study in Documentation, Part Two

Instructions

Consider the impact of each of the hazard events that impacted the City of Calais (as discussed in the video) and the information learned in this course, and answer the questions that follow.

1. What mitigation measures could you propose to prevent or lessen flood-related damages to roads and bridges in your community?

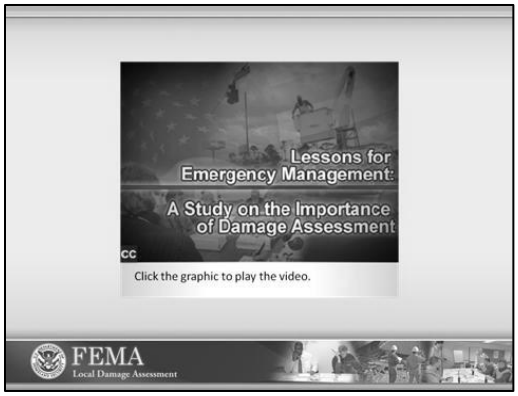
2. Considering all that you've learned in this course, what are some recommendations you could make to improve the damage assessment program for your community or public works agency?



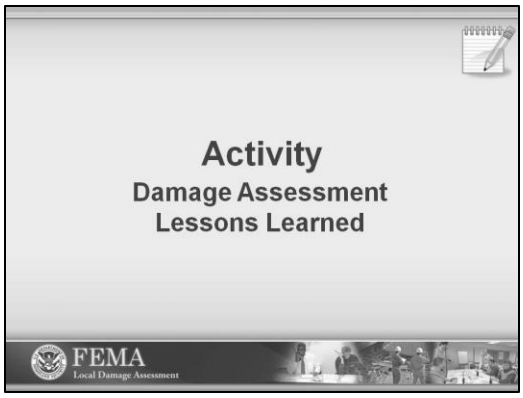
Unit Summary

In this unit, you learned that damage assessment documentation and record keeping are critically important for identifying needs, setting priorities, and allocating resources. In addition, accurate documentation is required as part of the Presidential Disaster Declaration process.

Damage assessment information is also used to improve the damage assessment program, identify mitigation opportunities, and drive recovery efforts – all of which contribute to a more disaster-resistant community.



This video presents lessons learned by a research team who studied the damage assessment activities following the Paso Robles earthquake in 2003.



After viewing the video, you will be asked to reflect on lessons learned and answer related questions.

Activity: Damage Assessment Lessons Learned

Damage Assessment Lessons Learned

Instructions

Consider each of the lessons learned documented in the report, *Damage Assessment After the Paso Robles (San Simeon, California) Earthquake: Lessons for Emergency Management* (as discussed in the video), and answer the questions that follow.

Lesson One: Damage assessment plays a vital role during the initial minutes and hours of disaster response operations.

1. How can you identify where to pre-position teams (when warning time is available) or where to dispatch teams immediately after a disaster or other emergency? Where can you get this information?

Lesson Two: Damage assessment is crucial to the recovery phase of emergency management and is required before resources can be acquired and utilized for disaster assistance and rebuilding.

2. How does damage assessment information help with identifying resources that are needed?

Lesson Three: Although damage assessment is a dangerous activity, it does promote a safer environment for the public and those involved with repairs, demolition, and reconstruction.

3. How can damage assessment help keep people safe during and after a disaster and prevent cascading emergencies?

Lesson Four: There is an incredible convergence of personnel at the scene of a disaster for the purpose of evaluating the disaster's impacts.

4. What agencies, organizations, and individuals could you expect to be involved in damage assessment in your community?

Lesson Five: There are different types of damage assessments and diverse methods to conduct them.

5. What types of damage assessment do you know of?

Lesson Six: Damage assessment is not a one-time occurrence, but a repetitive process.

6. How can you plan for effective coordination among all those involved with damage assessment?

Lesson Seven: Accuracy of initial and even later damage assessments may be questionable.

7. What factors may affect the accuracy of damage assessment information?

Lesson Eight: Damage assessment is a politically salient activity after a disaster occurs.

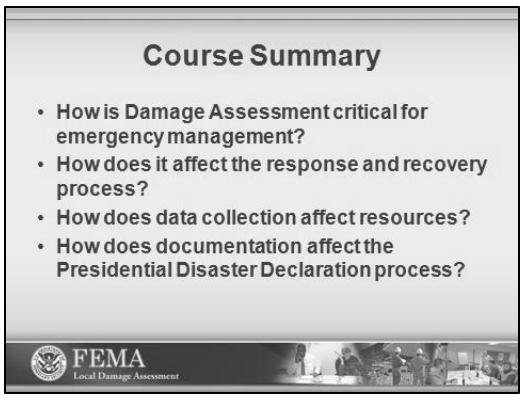
8. How can you involve political appointees and other key stakeholders in the damage assessment process?

Lesson Nine: There are several challenges confronting damage assessment personnel.

9. List some of the challenges facing damage assessment personnel in your community.

Lesson Ten: Many steps can be taken before and after a disaster to ensure an efficient and effective assessment of damages.

10. How can you overcome the challenges you listed above to ensure more efficient and effective damage assessment?



Course Summary

Throughout this course, you have learned how damage assessment is a critical part of emergency management. It sets the tone for the entire response and recovery periods. The quick and accurate gathering of damage assessment information helps guide people and resources to areas of greatest need. It also helps determine whether additional resources will be needed and is a necessary component of the Presidential Disaster Declaration process.

By using the information in this course and the resources provided in the Toolkit, you should now be equipped to develop or refine your community's damage assessment programs.

Glossary

Term	Definition
adversarial/ human-caused hazards	Include technological hazards (caused by the tools, machines, and substances used in everyday life) and intentional acts (caused by people attacking or damaging what is valuable in a society). Examples include hazardous materials release, major computer system failures (e.g., 911 system), terrorist attacks, and riots.
after-action report (AAR)	Completed following training and exercise, this document addresses opportunities for improvement of plans and procedures.
asset	Any manmade or natural feature that has value, including, but not limited to people; buildings; infrastructure like bridges, roads, and sewer and water systems; lifelines like electricity and communication resources; or environmental, cultural, or recreational features like parks, dunes, wetlands, or landmarks.
building	Any structure that encloses a space used for sheltering and occupancy; including a gas or liquid storage tank that is principally above grade; and shall include manufactured homes.
cascading emergencies	Series of incidents triggered by an event.
Community Emergency Response Teams (CERT)	A group of people organized as a neighborhood-based team that receives special training to enhance their ability to recognize, respond to, and recover from a major emergency or disaster situation.
Community Exposure Profile	Process during which a list is created of which assets in a community could be affected by hazards that may occur.
Comprehensive Emergency Management Plan (CEMP)	Document that establishes uniform policy and procedures for the effective coordination of response to a wide variety of natural and technological disasters.
Continuity of Government Plan (COG)	Document that establishes policy and guidance to support the continuation and line of succession for governmental functions.

Term	Definition
Continuity of Operations Planning (COOP)	Document that establishes the policy and guidance to support the execution of an organization's mission essential functions in any event that requires the relocation of selected personnel and functions to an alternate facility.
critical incident stress management (CISM)	An opportunity for individuals to talk about the stress of an incident when it happens.
critical infrastructure and key resources (CIKR)	Components necessary for the health and welfare of the population of your community. Critical infrastructure includes public safety services, health care, utilities, transportation systems, lifelines, and facilities that, if impacted by a hazard event, could result in high potential loss or release of hazardous materials.
damage assessment	Process for determining the severity and magnitude of a hazard event on the public and private sectors of a community.
Damage Assessment Coordinator	Individual who oversees that entire damage assessment program.
damage assessment planning process	The steps for planning a damage assessment program include establishing the local damage assessment planning team, gathering information, determining plan components and assumptions, identifying damage assessment zones, establishing local standards, and establishing procedures for maintaining the plan.
damage assessment response team	Individuals who go into a community following an incident or an event (as soon as it is safe to do so) to evaluate and document the physical damage caused and its potential impact on the community. The damage assessment response team should be composed of members from various groups and functional areas within the community.
debris	Scattered remains of assets broken or destroyed in a hazard event. Debris caused by a wind or water hazard event can cause additional damage to other assets.
disaster	Dangerous event that causes significant human and economic loss and demands a crisis response beyond the scope of any single agency or service, such as the fire or police department. Disasters are distinguished from emergencies by the greater level of response required. Disasters require resources beyond those available locally.

Term	Definition
drill	A coordinated, supervised exercise activity normally used to test a single specific operation or function.
earthquake	Sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of earth's tectonic plates.
emergency	Absent a Presidentially declared emergency, any incident(s), human-caused or natural, that requires responsive action to protect life or property. Under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, an emergency is "any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States."
Emergency Management Institute (EMI)	One of several FEMA training facilities. EMI is located in Emmitsburg, Maryland.
Emergency Management Process	The purpose behind emergency management is quite simple: the Continuity of Government (COG) and Continuity of Operations (COOP). Government and community services need to function uninterrupted as much as possible. While the process is quite generic, the actions taken are specific to the threats and vulnerabilities identified in each community.
Enhanced Fujita Scale of Tornado Intensity	Rating of tornadoes with numeric values from EF-0 to EF-5 based on tornado wind speed and damage sustained. An EF-0 indicates minimal damage such as broken tree limbs or signs, while an EF-5 indicated severe damage sustained.
essential functions and services	Functions that enable agencies to provide vital service, exercise civil authorities, maintain the safety and well-being of the general populace, and sustain the industrial/economic base in an emergency.
event	Planned, non-emergency activity.
extent	The size of an area affected by an incident.

Term	Definition
Federal Emergency Management Agency (FEMA)	Independent agency created in 1978 to provide a single point of accountability for all federal activities related to disaster mitigation and emergency preparedness, protection, prevention, response, and recovery.
first-in teams	First responders are generally deployed to address life safety issues such as conducting search and rescue, clearing entrance and egress routes, extinguishing fires, and providing medical services.
frequency	A measure of how often events of a particular magnitude are expected to occur.
full-scale exercises (FSE)	Simulates a real event as closely as possible. It is multi-agency, multi-jurisdictional, multi-discipline exercise designed to evaluate the operational capability of emergency management systems in a highly stressful environment that simulates actual response conditions. To accomplish this realism, it requires the mobilization and actual movement of emergency personnel, equipment, and resources.
functional exercise (FE)	A fully simulated interactive exercise that tests the capability of an organization to respond to a simulated event. It is similar to a full-scale exercise, but does not include equipment. It simulates an incident in the most realistic manner possible short of moving resources to an actual site.
functional needs populations	Individuals who may be more vulnerable because of immobility or their inability to take protective action. These individuals can include children, the elderly, tourists, inmates, and people with disabilities. Other populations that you should be aware of when planning include non-English speakers, mobile home residents, and the transportation-disadvantaged.
Geographic Information Systems (GIS)	The computer software application that relates physical features on the earth to a database to be used for mapping and analysis.

Term	Definition
hazard	Something that is potentially dangerous or harmful, often the root cause of an unwanted outcome. Hazards may be categorized as natural or as adversarial/human-caused. ▪ Natural hazards are caused by natural events that pose a threat to lives, property, and other assets. Examples include hurricanes, earthquakes, and tornadoes. ▪ Adversarial /human-caused hazards include technological hazards (caused by the tools, machines, and substances used in everyday life) and intentional acts (caused by people attacking or damaging what is valuable in a society). Examples include hazardous materials release, major computer system failures (e.g., 911 system), terrorist attacks, and riots.
Hazard Analysis Process	Basic steps that need to be performed to effectively assess risks and vulnerabilities for the community. These steps include: identify hazards, profile hazards, inventory assets, and estimate losses.
hazard event	A specific occurrence of a particular type of hazard.
hazard identification	The process of identifying hazards that threaten an area.
hazard profile	Description of the physical characteristics of hazards and a determination of various descriptors including magnitude, duration, frequency, probability, and extent. In most cases, a community can most easily use these descriptors when they are recorded and displayed as maps.
hazard vulnerability assessment (HVA)	Process of collecting information about how often each hazard is likely to occur, the area likely to be impacted, and how severe the impact may be. The HVA answers the question, “How badly could it affect the community?”
hazardous material release	Incident in which hazardous materials are not contained as they should be.
HAZUS-MH (Hazards U.S.-Multiple Hazards)	GIS-based nationally standardized, loss estimation tool developed by FEMA.
Homeland Security Exercise and Evaluation Program (HSEEP)	Provides a national standard for all exercises. It is a capabilities- and performance-based exercise program. For exercise design, development, conduct, evaluation and improvement planning, this program provides standardized policy, methodology, and terminology.

Term	Definition
improvement plan (IP)	Takes the observations and recommendations from the draft after-action report (AAR) and resolves them through the development of concrete corrective actions.
incident	Occurrence, natural or manmade, that requires a response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks, terrorist threats, civil unrest, wildland and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, tsunamis, war-related disasters, public health and medical emergencies, and other occurrences requiring an emergency response.
Individual Assistance (IA)	Funding or direct assistance to individuals, families, and businesses in an area whose property has been damaged or destroyed and whose losses are not covered by insurance. It is meant to help with critical expenses that cannot be covered in other ways. This assistance is not intended to restore damaged property to its condition prior to the disaster.
infrastructure	Public services of a community that have a direct impact on the quality of life. Infrastructure includes communication technology such as phone lines or Internet access, vital services such as public water supplies and sewer treatment facilities, and includes an area's transportation system such as airports, heliports, highways, bridges, tunnels, roadbeds, overpasses, railways, bridges, rail yards, depots; and waterways, canals, locks, seaports, ferries, harbors, drydocks, piers, and regional dams.
intensity	Measure of effects of a hazard event at a particular place.
Joint Information Center (JIC)	A center established to coordinate the Federal public information activities on-scene. It is the central point of contact for all news media at the scene of the incident.
jurisdiction	Range or sphere of authority. Public agencies have jurisdiction at an incident related to their legal responsibilities and authority. Jurisdictional authority at an incident can be political or geographical (e.g., city, county, tribal, State, or Federal boundary lines) or functional (e.g., law enforcement, public health).

Term	Definition
Lessons Learned Information Sharing (LLIS)	*Lessons Learned Information Sharing* (*LLIS.gov*) is a Department of Homeland Security/Federal Emergency Management Agency program. *LLIS.gov* serves as the national, online network of lessons learned, best practices, and innovative ideas for the emergency management and homeland security communities.
life safety issue	Any issue that presents an immediate hazard. Examples are live power lines, leaking chemicals, gas leaks, and wild animals.
lifelines	Systems that provide for health and safety such as water, sewer, and electric.
local government	Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska native village or organization; and any rural community, unincorporated town or village, or other public entity.
magnitude	Measure of the strength of a hazard event. The magnitude of a given hazard event is usually determined using technical measures specific to the hazard.
mitigation	Activities designed to lessen the impact of disasters to reduce loss of life and property.
multi-jurisdictional incident	An incident requiring action from multiple agencies that each have jurisdiction to manage certain aspects of an incident. In ICS, these incidents will be managed under Unified Command.
mutual aid agreement	A written agreement between agencies and/or jurisdictions to assist one another upon request, by furnishing personnel, equipment, and/or expertise in a specified manner.
National Elevation Datasheet (NED)	An inventory of topographic information collected by the United States Geological Survey (USGS).
natural disasters	Naturally occurring incidents such as earthquakes, tornadoes, hurricanes, and flooding that have occurred in the past or are likely to occur.

Term	Definition
natural hazards	Natural hazards are caused by natural events that pose a threat to lives, property, and other assets. Examples include hurricanes, earthquakes, and tornadoes.
Points of Distribution (PODs)	Points of Distribution (PODs) are centralized locations where those in need can obtain life sustaining commodities following a declared emergency or disaster.
Post Disaster Redevelopment Plan	Identifies policies, operational strategies, and roles and responsibilities for implementation that will guide decisions that affect long-term recovery and redevelopment of the community after a disaster. It emphasizes seizing opportunities for hazard mitigation and community improvement consistent with the goals of the local comprehensive plan and with full participation of the citizens.
pre-deployment briefing	Information about the current situation provided to the damage assessment response team members prior to their being deployed into the community following an event or incident.
preparedness	Actions taken to plan, organize, equip, train, and exercise to build and sustain the capabilities necessary to prevent, protect against, mitigate the effects of, respond to, and recover from those threats that pose the greatest risk to the security of your community. Preparedness is a continuous process.
prevention	Refers to preventing imminent threats and involves actions to avoid, prevent, or stop a threatened or actual act of terrorism.
probability	Statistical measure of the likelihood that a hazard event will occur.
protection	Capabilities necessary to secure critical infrastructure or key resources against acts of terrorism and manmade or natural disasters.
Public Assistance (PA)	Reimbursement and emergency assistance provided to State and local governments and certain types of private non-profit (PNP) entities from the Federal government.
recovery	Capabilities necessary to assist communities affected by an incident to recover effectively.

Term	Definition
response	Capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred.
Richter Scale	Numerical scale of earthquake magnitude devised by seismologist C.F. Richter in 1935.
risk	The possibility of loss or injury. More specifically, it is an estimated impact that a hazard would have on people, services, facilities, and structures in a community. It is the likelihood of a hazard event resulting in an adverse condition that causes injury or damage.
risk assessment	Process of identifying and characterizing all hazards that are likely to occur in your community. Risk assessment answers the question, “What could happen to adversely impact the community?”
Saffir/Simpson Hurricane Scale	Scale used by the National Hurricane Center to provide a continuing assessment of the potential for wind and storm surge damage.
seminars	Discussion-based exercises designed to orient participants to new or updated plans, policies, or procedures in a structured training environment.
severity	Measure of the seriousness of the effects of a disaster.
stakeholders	Individuals or groups that will be affected in any way by an action or policy including businesses, private organizations, and citizens. They can provide input into the development, review, and implementation of the damage assessment plan, based on their participation in all aspects of a disaster.
State	When capitalized, refers to any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, The Commonwealth of Northern Mariana Islands, and any possession of the United States. See Section 2 (14), Homeland Security Act of 2002, Pub. L. 107-296, 116 Stat. 2135 (2002).
structure	Any combination of materials used to form a construction for use, occupancy, or ornamentation whether installed on, above, or below the surface of land or water.

Term	Definition
tabletop exercise (TTX)	Activity that facilitates analysis of an emergency situation in an informal, stress-free environment.
threat	Indication of possible violence, harm, or danger.
vulnerability	Description of how exposed or susceptible to damage an asset is. Vulnerability depends on an asset's construction, contents, and the economic value of its functions.
windshield survey	Teams record damage in their assigned zones while driving through affected areas. The magnitude and impact of the incident is recorded based on benchmarks. This process is repeated street by street.
workshops	Discussion-based exercises used as a means of developing specific products, such as a draft plan or policy.
zone familiarization	Knowledge about an assigned area of the community that each member of the damage assessment response team should have in order to be able to identify damage to that assigned area following an event or incident.