1 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.

Content Outline

Unit Topics	Estimated Time
Course Overview	20 Minutes
Unit Overview	5 Minutes
Introduction to Local Damage Assessment*	5 Minutes
Activity: Damage Assessment Terminology	25 Minutes
Core Capabilities	15 Minutes
Critical Infrastructure and Key Resources*	5 Minutes
Activity: Types of Critical Infrastructure and Key Resources	20 Minutes
Unit Summary	5 Minutes
TOTAL	**1 Hour, 40 Minutes**

**The time estimate for this topic does not include the activity, which is listed separately.*

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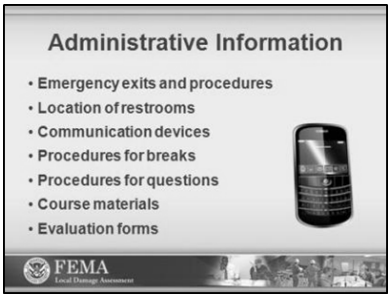
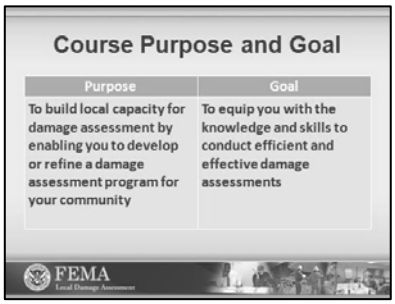
Notes	Content
Visual 1-1  	**Welcome**
Visual 1-2  	**Administrative Information** • Emergency exits and procedures • Location of restrooms • Communication devices • Procedures for breaks • Procedures for questions • Course materials • Evaluation forms
Visual 1-3  	**Course Purpose and Goal** When a disaster or major emergency occurs, damage assessment must be done quickly and accurately, to reduce the impact on people and identify resource needs. This information enables the direction of emergency response personnel and resources to the most appropriate areas and helps identify the need for additional resources. 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.

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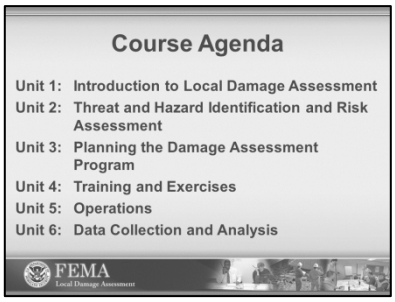
Visual 1-4  	**Course Agenda and Objectives** There are six units in this course. Each unit has specific objectives that will be covered. ***Unit 1: Introduction to Local Damage Assessment*** • Define the purpose of damage assessment. • Define basic terms related to damage assessment. • List critical infrastructure and key resources in a community. ***Unit 2: Threat and Hazard Identification and Risk Assessment*** • Identify the four steps of the THIRA process. ***Unit 3: Planning the Damage Assessment Program*** • 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. ***Unit 4: Training and Exercises*** • 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.

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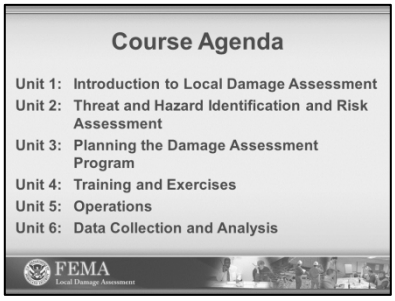
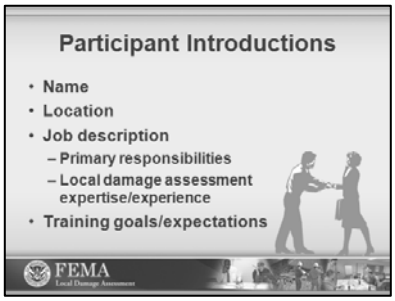
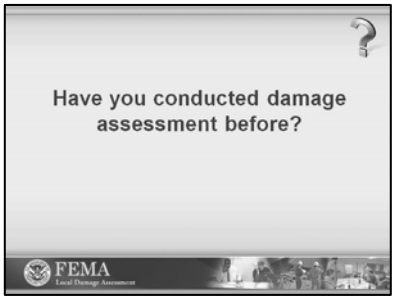
Visual 1-4 (Continued)  	***Unit 5: Operations*** • Identify potential members of the local Damage Assessment Response Team. • List types of information that should be included in pre-deployment briefings. • Describe basic procedures for damage assessment. • Assign damage level ratings based on visual inspection. • Describe special considerations regarding the human impact of disasters. ***Unit 6: Data Collection and Analysis*** • Explain how damage assessment information is used after the event. • Explain documentation and record-keeping methods for effective damage assessments.
Visual 1-5  	**Participant Introductions** Introduce yourself briefly to the class by stating: • Your name • Where you are from • Your job description, including: - Primary responsibilities - Local damage assessment expertise/experience • What you hope to gain from the course
Visual 1-6  	**How many of you have conducted damage assessment before?**

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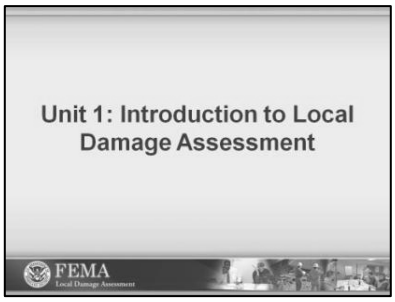
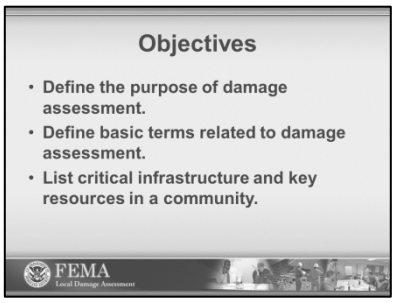
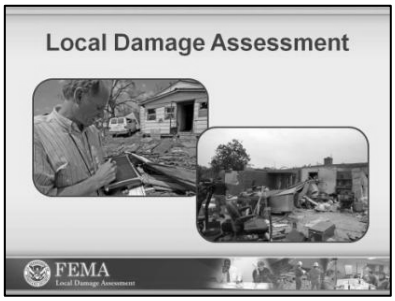
Visual 1-7  	In this unit, you will learn about the importance of local damage assessment. Information gathered during damage assessment identifies needs, helps set priorities, and drives response and recovery actions. This snapshot of the extent and location of damage provides information for the public 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.
Visual 1-8  	**Unit Objectives** This unit will enable you to: • Define the purpose of damage assessment. • Define basic terms related to damage assessment. • List critical infrastructure and key resources in a community.
Visual 1-9  	**Local Damage Assessment** This course will focus on local damage assessment, in which Damage Assessment Response Teams from the affected community evaluate and document physical damage caused by a disaster. This assessment is initially conducted as soon after a disaster as it is safe to do so and may be redone many times in the weeks and months to come. Simply put, damage assessment is a process to determine the severity and magnitude of a hazard event on the public and private sectors in the community.

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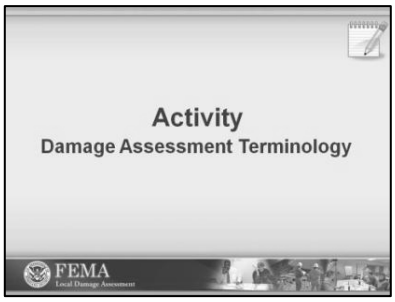
Visual 1-10  	**Group Activity: Damage Assessment Terminology**

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	

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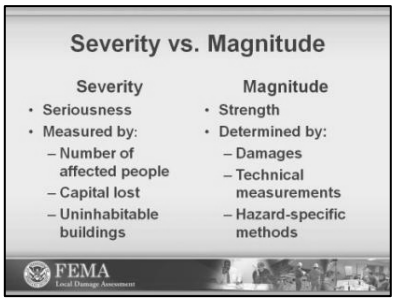
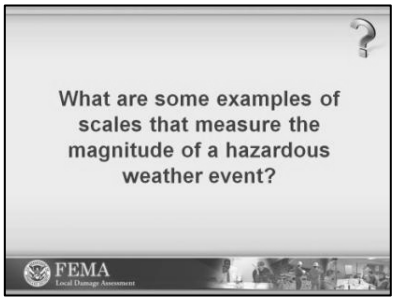
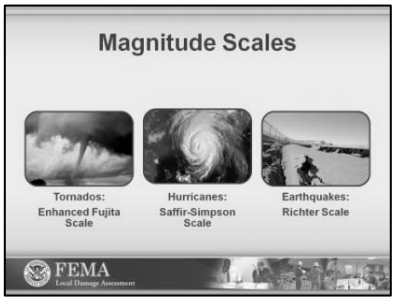
Visual 1-11  	**Severity and Magnitude** Severity is a measure of the seriousness of the effects of a hazard event. It can be measured by factors such as the number of people affected, amount of capital lost, number of buildings uninhabitable, or impact to critical infrastructure and key resources. Magnitude is a measure of the strength of a hazard event. The magnitude of a hazard is usually determined using technical measures specific to the hazard.
Visual 1-12  	**What are some examples of scales that measure the magnitude of a hazardous weather event?**
Visual 1-13  	**Magnitude Scales** The Enhanced Fujita Scale is used to measure the magnitude of tornadoes so that there is a common language, such as when someone refers to a tornado as EF-3. The magnitude of hurricanes is measured by the Saffir-Simpson Hurricane Wind Scale which provides consistency; thus, a Category 3 hurricane is the same regardless of location. Earthquake magnitude is measured with the Richter Scale. Earthquake intensity is measured with the Mercalli Modified Intensity scale (MMI).

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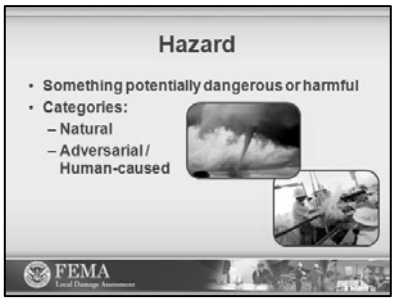
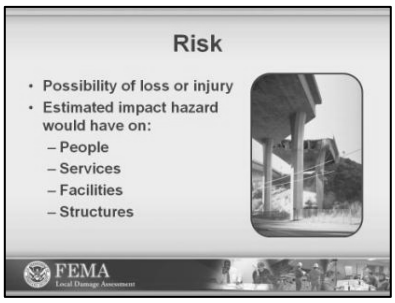
Visual 1-14  	**Hazard** A hazard is something that is potentially dangerous or harmful. It is often the root cause of an unwanted outcome. Hazards may be categorized as natural or as adversarial/human-caused. • Natural hazards are caused by natural events that pose a threat to lives, property, and other assets. Examples include hurricanes, earthquakes, and tornadoes. • Adversarial and/or 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 releases, major computer system failures (e.g., 911 system), terrorist attacks, and riots.
Visual 1-15  	**Risk** 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. Risk is often expressed in relative terms such as a high, moderate, or low likelihood of sustaining damage above a particular threshold due to a specific type of hazard event. It also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

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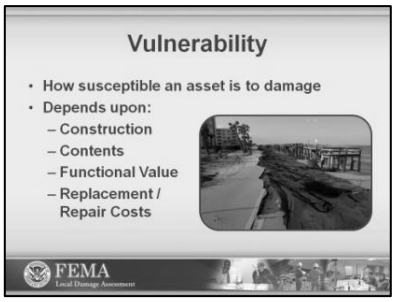
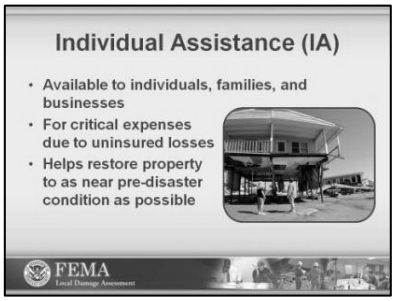
Visual 1-16  	**Vulnerability** Vulnerability is a description of how exposed or susceptible an asset is to damage. Vulnerability depends on an asset's construction, contents, the economic value of its functions or services, and replacement/repair costs. The vulnerability of one element of the community 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. For example, many businesses depend on uninterrupted electrical power. If an electric substation is flooded, it will affect not only the substation itself, but a number of businesses as well. A refrigerated warehouse may lose its entire inventory and suffer severe economic losses as a result of the power failure. Often, indirect effects can be much more widespread and damaging than direct ones.
Visual 1-17  	**Individual Assistance (IA)** 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. It is meant to help with critical expenses that cannot be covered in other ways. This assistance is intended to assist a community in restoring damaged property to as near its condition before the disaster as possible. Whenever feasible, efforts should be made to rebuild in a way that makes the community more disaster resistant, through mitigation activities. While some housing assistance funds are available through FEMA's Individuals and Households Program (IHP), most disaster assistance to individuals from the Federal government is in the form of loans administered by the Small Business Administration (SBA).

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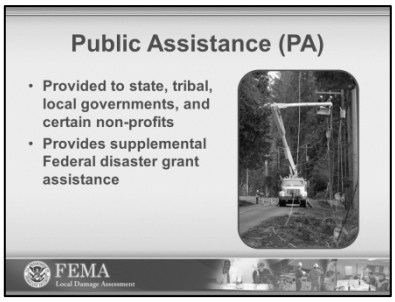
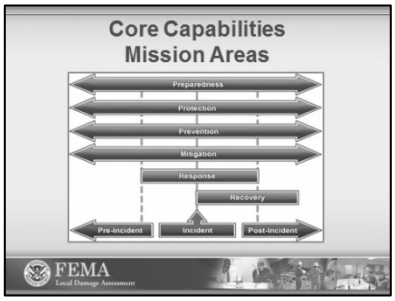
Visual 1-18  	**FEMA Public Assistance (PA)** FEMA Public Assistance (PA) is reimbursement and emergency assistance provided to state, tribal, and local governments and certain types of private non-profit (PNP) entities from the Federal government. Through the PA Program, FEMA provides supplemental Federal 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 PNP organizations.
Visual 1-19  	**Core Capabilities Mission Areas** Core capabilities are essential for the execution of each of the five mission areas: Prevention, Protection, Mitigation, Response, and Recovery. To assess both our capacity and our gaps, each core capability includes capability targets for which measures will be developed. The core capabilities and capability targets are not exclusive to any single level of government or organization, but rather require the combined efforts of the whole community. The purpose behind Mission Areas is quite simple: assure the Continuity of Government (COG) and Continuity of Operations (COOP). Government and community services need to function uninterrupted as much as possible. This should be a priority for restoration during and after an event. It is also important for those involved in damage assessment to understand the continuous process of emergency management. While the process outlined is quite generic, the actions taken are specific to the threats and vulnerabilities identified in each community.

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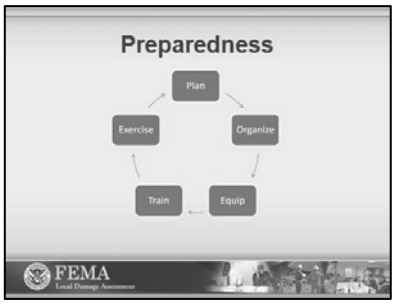
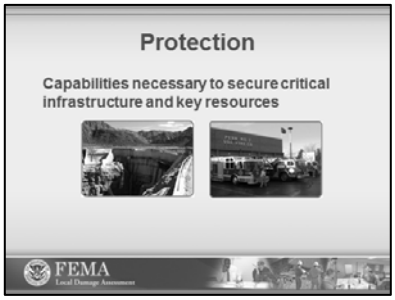
Visual 1-20  	**Preparedness** Preparedness refers to the actions taken to plan, organize, equip, train, and exercise to build and sustain the capabilities necessary to prevent, protect against, mitigate the effects of, respond to, and recover from those threats that pose the greatest risk to the security of your community. Preparedness is a continuous process. Preparedness activity includes developing a comprehensive damage assessment plan and training based on the predetermined priorities identified in the risk assessment and/or vulnerability assessment. For example: If there is flooding in your community, how will this affect bridges in low-lying areas? As part of your community's preparedness, you need to determine what actions need to be taken to be prepared for this event.
Visual 1-21  	**Protection** Protection refers to capabilities necessary to secure Critical Infrastructure and 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 capabilities include: • Critical infrastructure protection • Defense against Weapons of Mass Destruction (WMD) threats • Defense of agriculture and food • Protection of key leadership and events • Border security • Maritime security • Transportation security • Immigration security • Cybersecurity

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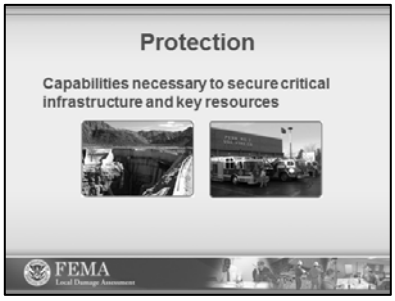
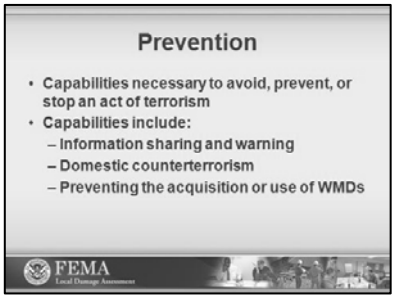
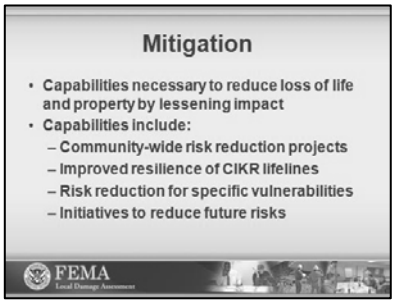
Visual 1-21 (Continued)  	Protection is an elevation of awareness and understanding of threats and vulnerabilities to your community's critical infrastructure and key resources. Damage assessment planning contributes to the protection of the community and its assets, particularly through effective coordination among multiple agencies and jurisdictions.
Visual 1-22  	**Prevention** Prevention refers to those capabilities necessary to avoid, prevent, or stop a threatened or actual act of terrorism. Some protection activities also contribute to prevention. For example, effective border protection could prevent a terrorist attack. Prevention capabilities include: • Information sharing and warning • Domestic counterterrorism • Preventing the acquisition or use of WMDs An example of prevention activity that the damage assessment planning team will be involved in is identifying vulnerabilities in the community, such as an unsecured water treatment facility.
Visual 1-23  	**Mitigation** Mitigation refers to those capabilities necessary to reduce loss of life and property by lessening the impact of disasters. Mitigation capabilities include: • Community-wide risk reduction projects • Efforts to improve the resilience of critical infrastructure and key resource lifelines • Risk reduction for specific vulnerabilities from natural hazards or acts of terrorism • Initiatives to reduce future risks after a disaster has occurred

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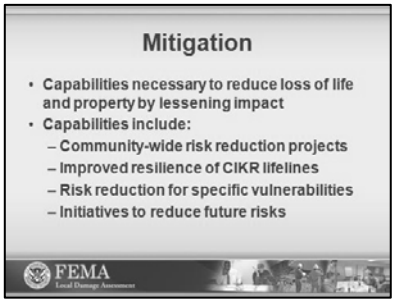
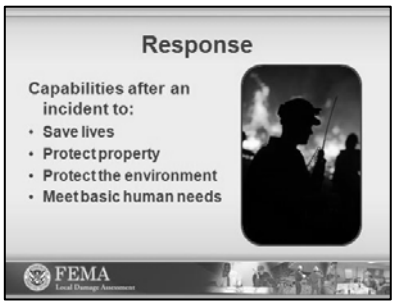
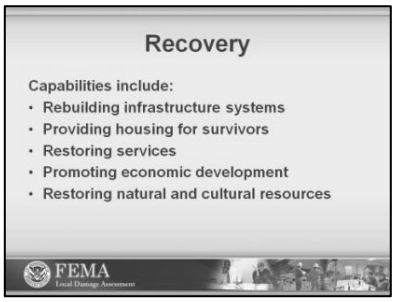
Visual 1-23 (Continued)  	Although you should continually be evaluating ways to make your community more disaster-resistant, the period after a hazard event provides opportunities for mitigation actions to be implemented. Funding may become available, and it may be easier during this time to get buy-in from decision-makers to conduct mitigation activities. The Damage Assessment Response Team can identify opportunities for mitigation following a hazard event. When you're conducting damage assessment, consider what your community can do to make vulnerable critical infrastructure and key resources more damage-resistant. For example, power lines can be buried or the height of bridges can be raised.
Visual 1-24  	**Response** Response refers to those capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred. Generally speaking, effective planning (including practice through training and exercise) leads to an effective response. Throughout the response activity, even after the initial damage assessment, identification and determination of additional damages, costs of those damages, and opportunities for mitigation will continue. Keep in mind that some response activity continues as recovery begins.
Visual 1-25  	**Recovery** Recovery refers to those capabilities necessary to assist communities affected by an event to recover effectively, including: • Rebuilding infrastructure systems • Providing adequate interim and long-term housing for survivors • Restoring health, social, and community services • Promoting economic development • Restoring natural and cultural resources

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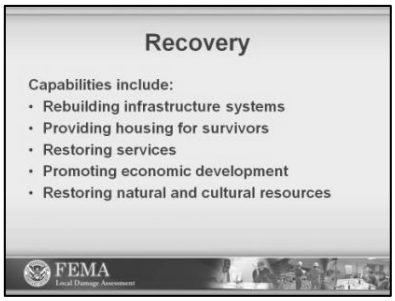
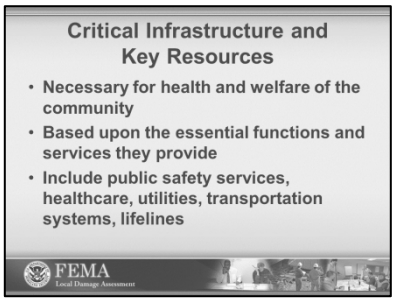
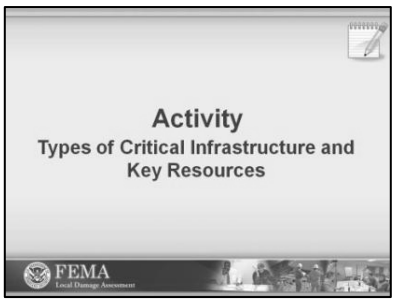
Visual 1-25 **(Continued)**  	The community actually begins the recovery process simultaneously with response efforts. In addition, the ongoing activities of preparedness, protection, prevention, and mitigation also occur during the recovery period. Keep in mind that this can be an ideal time to identify mitigation opportunities because of grant funding that can become available following a hazard event. During recovery activities, you should evaluate repairs and estimate reconstruction costs. Then update plans based on improvements to infrastructure or other facilities.
Visual 1-26  	**Critical Infrastructure and Key Resources** Critical Infrastructure and Key Resources (CIKR) are those components that are necessary for the health and welfare of the population of your community. CIKR include public safety services, healthcare, utilities, transportation systems, lifelines, and facilities that, if impacted by a hazard event, could result in high potential loss or release of hazardous materials. 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/economic base in an emergency.
Visual 1-27  	**Group Activity: Types of Critical Infrastructure and Key Resources**

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 5 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	

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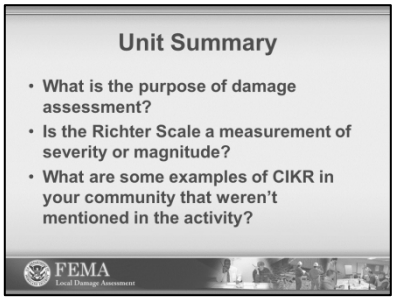
Visual 1-28  	***Public Services*** ***Transportation Systems*** ***Lifeline Systems*** ***High-Risk Facilities***
Visual 1-29  	**Unit Summary** In this lesson, you learned some basic terminology that is used for damage assessment. In addition, you learned how important it is for a community to conduct 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.