
**Unit Introduction**

- The purpose of this unit is to introduce the key components in managing debris activities, including:
  - The Debris Management Plan

**Concept of the Debris Management Planning**

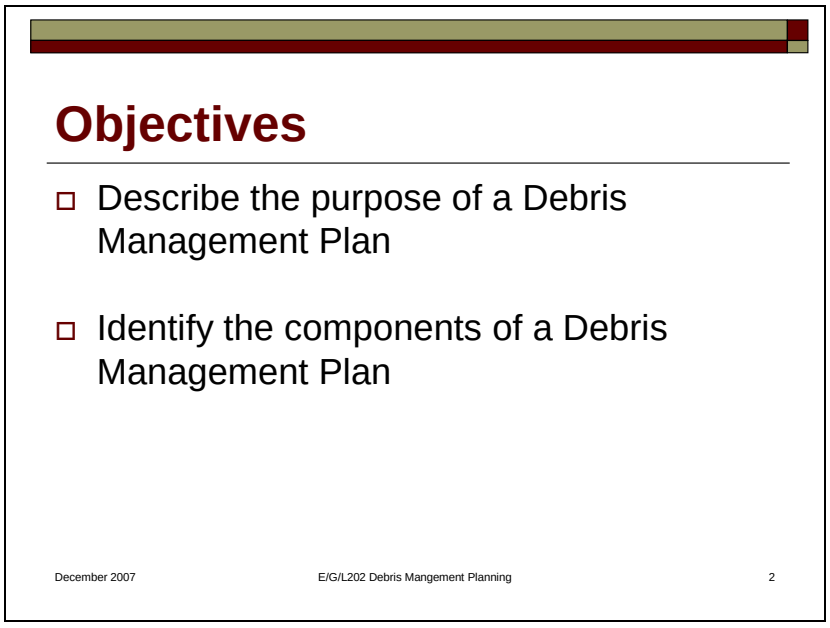
Debris Management planning incorporates actions associated with planning for and implementing debris activities.

**Concept of the Debris Management Plan**

- Local, Tribal, and State emergency managers are encouraged to develop a Debris Management Plan for their communities in anticipation of potential disaster events.
- The primary purpose of the Plan is to define the roles of essential agencies and personnel necessary to execute debris clearance, removal, and disposal activities.
- As part of this Plan, the entity will identify:
  - Critical facilities to which access must be provided
  - Key routes to provide emergency and critical local traffic
  - A process to assess the magnitude and type of debris resulting from an event, and the criticality of its presence

This unit will identify the purpose and contents of a Debris Management Plan, the key components of debris activities that the Plan must anticipate, and will provide you with the opportunity to consider applicable content for a Debris Management Plan for your community.

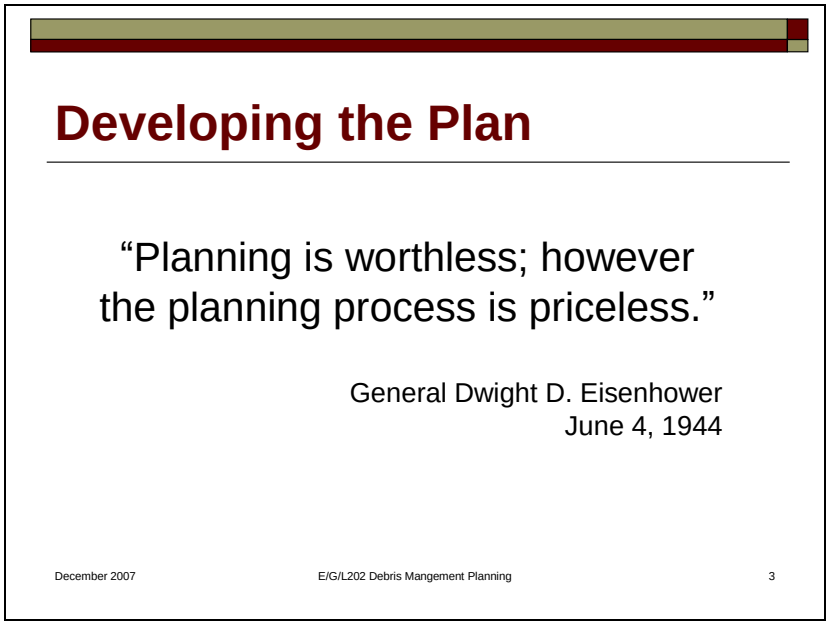
## Introduction (Cont'd)




**Unit Objectives**

- At the end of this unit, you will be able to:
  - Describe the purpose and contents of a Debris Management Plan.
  - Identify the components of a Debris Management Plan.

## Debris Management Plan Development




- This statement made by General Eisenhower suggests that plans themselves do not always work the way they are intended, especially if you cannot control all the elements; however, a proper planning process requires consideration of all the elements. If pertinent elements of the plan are properly considered during the development, the plan will provide a basis for rapid modification as things change.
- As most communities have experienced or observed, major natural disasters can generate enormous volumes of debris in short periods of time—often presenting unanticipated conditions.
  - Proper planning allows the flexibility to accommodate a range of conditions in disaster response.
- The following section identifies the process of preparing a Debris Management Plan and the primary components of the Plan.

Notes:

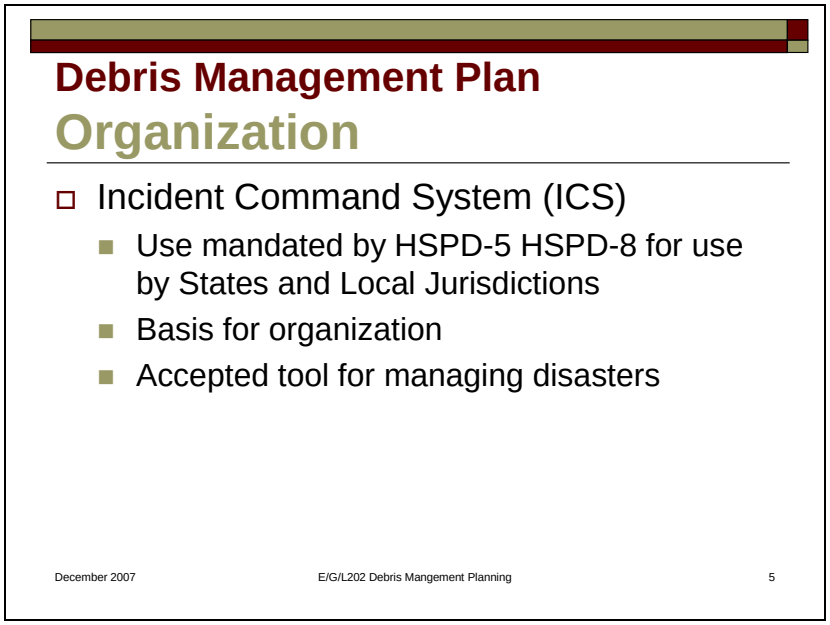
## Debris Management Plan Development (Cont'd)


- Numerous resources with varying responsibilities will be involved with the development and implementation of the Debris Management Plan.
- Proper identification of the entities and coordination is essential to the success of the Plan.
- Coordination must be both external and internal.
  - **External** agencies may include:
    - State Agencies
      - Division of Emergency Management
      - Department of solid Waste Management
      - Department of Transportation
      - Department of Environmental Quality
      - Department of Air Quality
    - Federal Agencies
      - FEMA
      - U.S. Army Corps of Engineers
      - U.S. Fish and Wildlife Services
      - USDA, Natural Resources and Conservation Service
      - Federal Highway Administration
    - Local Community Groups

  - Local volunteer agencies
  - Local environmental and historic groups or organizations
- **Internal** agencies may include:
  - Department of Public Works
  - Department of Solid Waste Management
  - Department of Public Safety
  - Department of Environmental Quality
  - Public Affairs
  - General Counsel
  - Procurement
- A system must be in place to identify and coordinate any updates to the Plan.
- Proper coordination minimizes implementation problems. If each agency has a part in developing the plan, it should be aware of its requirements.
- The Plan should incorporate local perspectives and conditions—what is appropriate in one County may not be appropriate in another.
- Communication promotes diverse and innovative solutions:
  - For example, there may be solutions to reducing and disposing of debris that are not immediately obvious (using mulch from ground-up vegetation to add organic matter to reclaimed strip mines in old mined areas).

Notes:

## Debris Management Plan Development (Cont'd)




The organization is very critical. There must be a logical organizational structure established that allows maximum controlled flexibility.

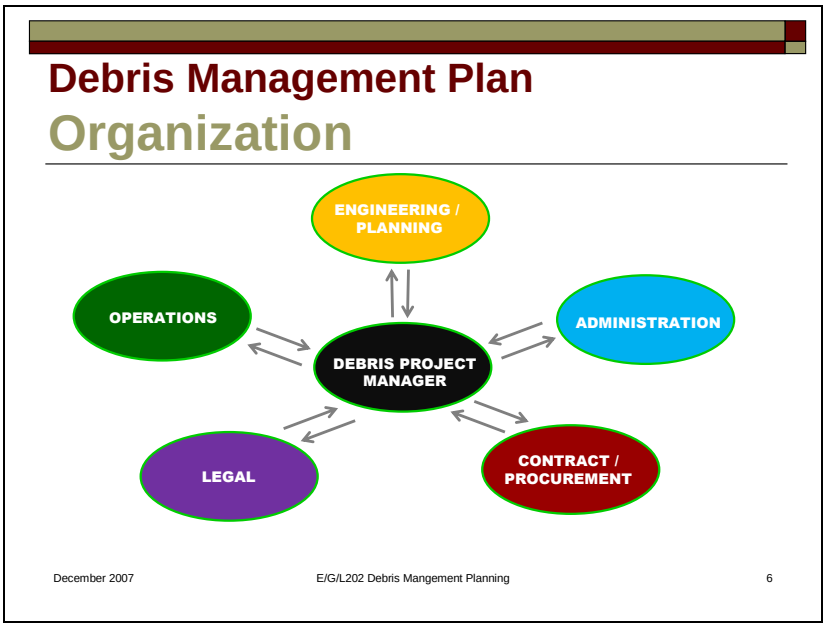
- The Incident Command System (ICS) is well-documented and tested as a model tool for commanding, controlling, and coordinating a disaster response.
  - It provides an excellent means of coordinating the efforts of several agencies to achieve a common goal.
  - The ICS is used by numerous States, agencies, and departments for, among other things, disaster response.
- The ICS is not part of this course, although components will be used and discussed

When preparing the organization, the following should be considered:

- The individual put in command with the overall responsibility must be:
  - Fully knowledgeable about debris activities and the Debris Management Plan.
  - Authoritative—have the ability to clearly direct activities and have individuals respond in a positive manner.
  - Decisive—able to make logical decisions in fluid situations.
- When the organization chart is developed, all parties should be clear about the chain of command and the need to coordinate between the sections.
- The organization must be established in a manner to be flexible—the size and composition should be disaster dependent.
- Key positions should be clearly defined, with responsibilities clearly established.
  - Each position should have clearly delineated responsibilities and associated authority.

- Full-time employees should be named to these key positions.
- All available training should be offered to these personnel.

## Debris Management Plan Development (Cont'd)




To facilitate debris removal, the Local government should develop an organizational structure that is not only ICS compliant, but also aligned with the various functions associated with debris removal operations:

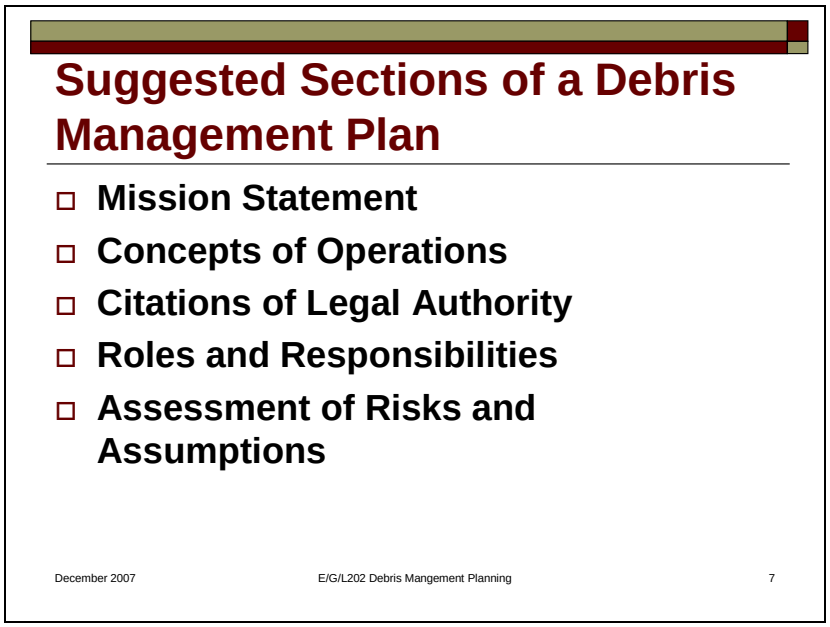
- Administration
- Contract/Procurement
- Legal
- Operations
- Engineering/Planning

Additionally, it is critical for the Local government to have a clearly identified primary decision maker such as a Debris Project Manager to coordinate debris activities and serve as the single point of contact for all of the functions.

The Local government should also identify secondary and tertiary back-ups in case the primary designated individuals cannot carry out the assigned functions after a disaster occurs.

Notes:

## Debris Management Plan Development (Cont'd)




This is a sample Plan outline.

Each community will have a unique plan and outline, but the basic content should cover these subjects.

This plan addresses actions the jurisdiction will take, and at what point supplemental resources will be required, and how those resources may be obtained.

### MISSION STATEMENT:

- The Debris Management Plan should begin with a Mission Statement:
  - The Mission should be a clear, concise paragraph that identifies how the debris management activities will be facilitated and coordinated.
  - The Mission should identify local situations and assumptions.

### CONCEPT OF OPERATIONS:

- The Concept of Operations section defines who has the overall responsibility of managing the debris clearance, removal and disposal activities, and supporting agencies/staff.
  - Simply stated "How are you going to conduct the debris activities after a disaster?"
- Sub-sections might include:
  - A clear statement of the purpose of the plan
  - How the plan will be implemented
  - Guidance for each phase of the plan

- Debris removal priorities
- Debris Management Site selection criteria
- Cooperative agreements
- Environmental and historic preservation compliance aspects

## ROLES AND RESPONSIBILITIES:

- Some of the responsibilities that are sometimes overlooked include:
  - Who is responsible for implementing the plan and to what level?
  - Who notifies the staff?
  - Who conducts the initial assessment of the amount and impact of the debris?
  - Who established removal priorities?
  - Who implements stand-by contracts?
  - Who coordinates equipment deployment?
  - Who authorizes opening Debris Management Sites?
  - Who is responsible for ensuring environmental and historic preservation compliance?
  - Who coordinates documentation?
  - Who coordinates with State and Federal disaster agencies? Volunteer agencies?
  - Who handles traffic control?
  - Who is responsible for supervising the debris monitoring effort?
  - Who responds to citizen inquiries?
  - Not all of the agencies are common to all entities, and some of the responsibilities listed may apply to other agencies in specific communities. This list is provided to identify types of agencies typically available to provide various tasks. Individual communities should consider their own internal agencies and tasks to be performed, and assign responsibilities accordingly.

### Primary Coordination Agencies:

- Office of Emergency Preparedness
- Department of Public Works
- Department of Solid Waste Management
- Engineering/ Planning Division
- Law Enforcement
- Fire/EMS

- Code Enforcement/Building Inspector
- Office of Environmental Compliance
- Public Information Specialist
- Department of Legal Affairs
- Procurement/Contracting Office
- Finance/Purchasing
- Human Resources

## ASSESMENT OF RISKS AND ASSUMPTIONS:

Historical data is most often used to determine the design event for hurricanes, tornadoes, ice storms, wildfires, and floods.

Local government may only need to plan with the assumption that a portion of its structures will be damaged or destroyed during a disaster event, rather than all of its structures, if more stringent seismic building codes and better construction practices have been adopted since a previous event of the same nature.

Terrorist events have limited historical data; information from natural disasters and/or analyzing vulnerabilities of a particular Local government's jurisdiction may provide useful insight into the challenges a local government could anticipate.

Understanding the local land use provides information as to the types of debris that will be generated and offers insight as to the type of handling that would be necessary to safely manage the debris. For example, rural areas may have more vegetative debris; whereas, urban residential areas may have more construction and demolition debris. Industrial areas may have special environmental concerns compared to parks/recreation areas.

Evaluating accessibility and terrain of various locations within a jurisdiction is critical to determining the types of debris collection program that should be undertaken. Remote areas may require safely storing the debris until accessibility is established. Usually, finding debris contractors, recyclers, or disposal in remote areas is a challenge. To promote expedient recovery efforts, planners should identify and maintain lists of available recyclers, debris contractors, and disposal facilities.

Historical records provide a basis for forecasting disaster-generated debris and can be used for planning purposes. Previous contracts for debris removal, recycling activities, volume-reduction processing, and landfill disposal records should be reviewed thoroughly to determine the quantity of disaster debris that was generated for a particular disaster event.

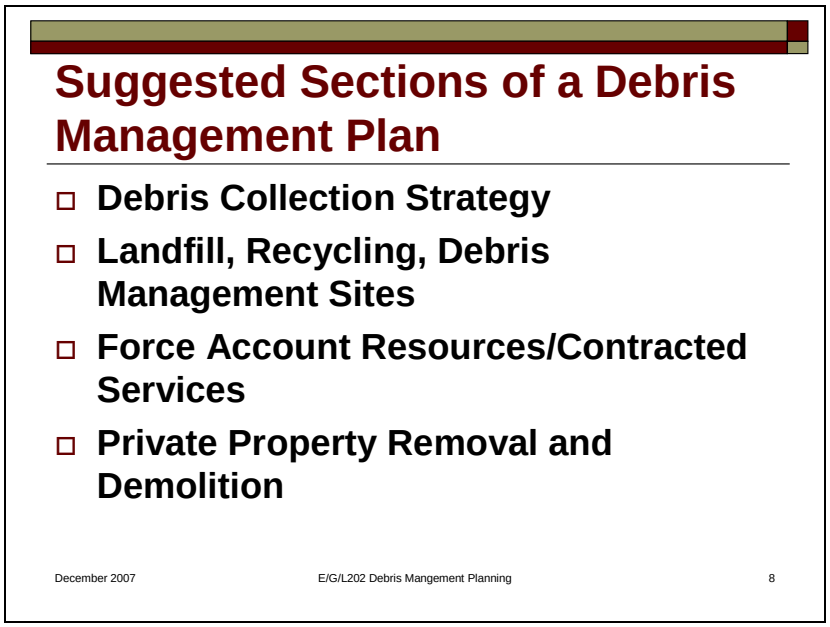
If previous disaster data is not available, assumptions may be made from neighboring government's experience, USACE modeling (for hurricanes), or HAZUS (for earthquakes).

USACE emergency management staff has developed a modeling methodology designed to forecast potential amounts of hurricane-generated debris.

The use of remote sensing information (aerial photographs, satellite data, etc.), either alone or in combination with field surveys, may be of significant use in forecasting the amount, mix, and extent of debris.

Notes:

## Debris Management Plan Development (Cont'd)




The fundamental component of a disaster Debris Management Plan is the collection of debris.

The debris collection strategy should establish debris collection priorities based upon response and recovery needs.

There should be a systematic method based on clearly defined criteria as to scheduling debris removal routes. For example, population density, location of critical facilities, and environmental justice issues need to be considered when prioritizing which areas will be cleared first (schools v. nursing communities v. affluent neighborhoods, etc.).

Other factors such as air quality, noise, traffic patterns and environmental impacts should also factor into the collection method.

There are several methods that local governments can use to collect disaster debris. The most common collection methods include curbside collection, drop-off bins, hazardous waste round-ups, and white goods pick-ups.

The debris collection strategy should include a list of the types of debris materials that can be recycled. The strategy should also determine which end-use products can be made from disaster debris and identify the end-use buyers.

In determining the types of debris that should be recycled, they should also evaluate the types of processing that would be necessary to convert the debris to an end-use product. If there is no market demand for identified end-use products it will be challenging for local governments to sell or give away their recyclable disaster debris and in some instances, the remaining debris may

need to be disposed. For that reason, it is incumbent upon local governments to thoroughly research the market opportunities for each type of recyclable debris.

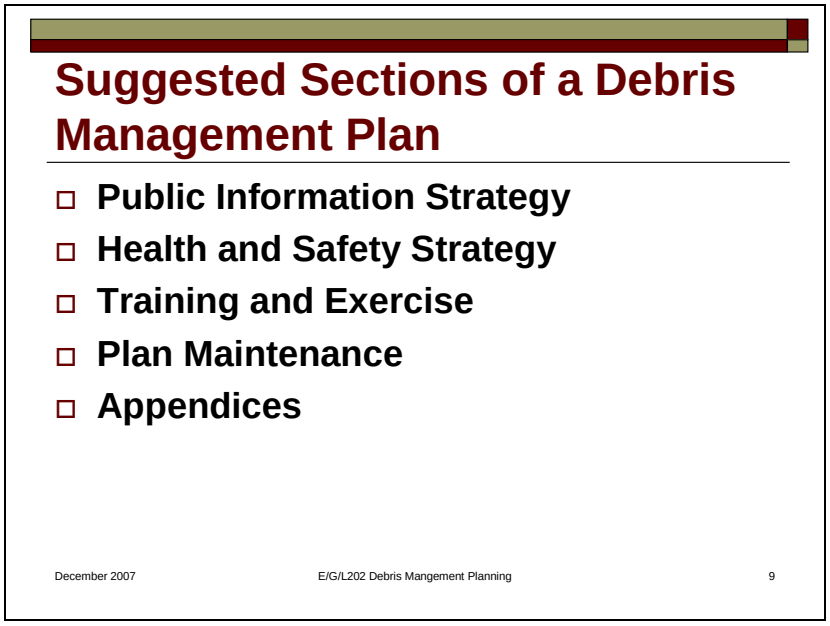
If local governments use contracted services to process debris, the contract agreements should include the processing specifications so that the contractor uses the correct types of equipment to achieve that specification.

Local governments should regularly evaluate the efficiency and effectiveness of the debris collection strategy.

Evaluate debris collection routes to determine whether labor and equipment are used efficiently. Based on the results of the evaluation, the local government may need to increase/decrease the frequency of collection or add/remove routes.

Notes:

## Debris Management Plan Development (Cont'd)




### PUBLIC INFORMATION

The dissemination of debris removal information is critical to the effective and efficient removal of disaster debris. Local governments should have a public information strategy to ensure that residents receive accurate and timely information about the parameters, rules, and guidelines of debris removal.

The information should include the parameters, rules, and guidelines of debris operations so residents can begin their personal recovery activities. The staff responsible for developing and writing the information must present the information in a clear, direct, and organized manner. The language used must be simple and easy for all residents to understand. Jargon and acronyms only lead to confusion and are ineffective.

Information may have to be distributed in more than one language for it to be understood by non-English-speaking populations and neighborhoods.

The public information staff must take advantage of every information vehicle available if power, utilities, and other infrastructure have been damaged. Many times the best carriers of information are the responders in the field. The general public recognizes its role and frequently asks questions regarding the operations. Stocking the equipment and trucks with flyers, pamphlets, and other print media allows responders to perform their duties while also satisfying the public's need for information.

Local governments may also conduct pro-active community outreach initiatives before a disaster, such as public service announcements, handing out flyers/brochures during community events, and public speaking engagements.

## HEALTH AND SAFETY

The Debris Management Plan should include a section on safety to establish minimum safety standards for local government and contractor personnel to:

- Avoid accidents during debris recovery operations
- Protect workers from exposure to hazardous materials
- Method of dissemination of safety information, including posters, training of workers, etc.
- How compliance will be monitored
- Specific corrective actions to be taken if minimum safety standards not met

## TRAINING AND EXERCISING/PLAN MAINTENANCE

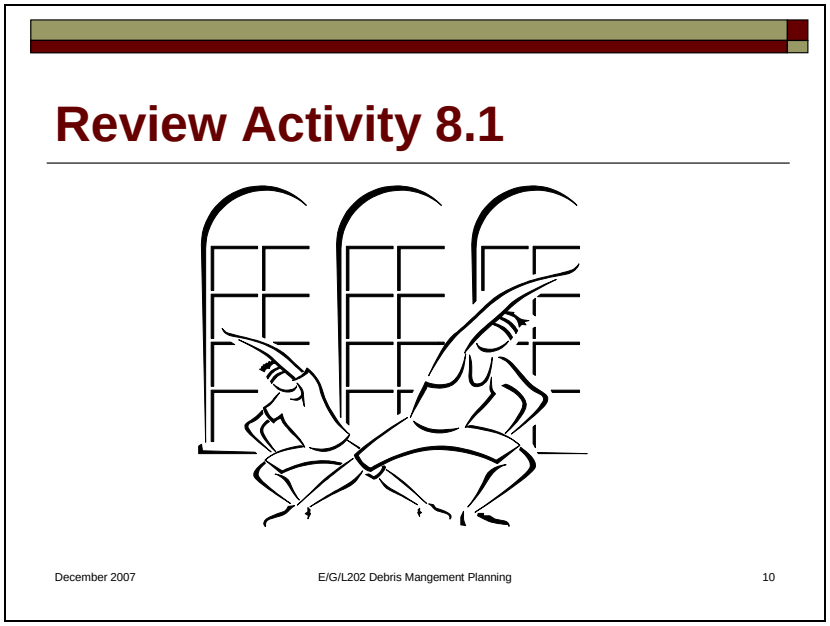
- The Debris Management Plan is considered a living document. Once written, the following actions must be taken:
  - The plan must be approved by the implementing agencies and departments, and adopted according to city/county requirements.
  - The community must ensure there are procedures for providing training.
  - The plan must be exercised to ensure it works.
  - The plan should be dynamic, and reviewed and updated on an established, periodic basis.

## APPENDICES

- Some of the information that supports the Debris Management Plan may be included in appendices. The following are examples of information that might be included in an appendix (continued on next slide):
  - A contact list of individuals and telephone numbers
  - Location and status of pre-selected Debris Management Sites (with maps)
  - Location and capacities of existing landfills (with maps)
  - Environmental and historic requirements (or plan)
  - List of stand-by contractors, or pre-qualified contractors
  - Sample contracts or scopes of work. Some entities have one basic contract that covers several potential requirements, with various scopes of work.
  - Copies of stand-by contracts with the individual's name (and backup) that has the authority to implement the contract.
  - Copies of forms: Rights-of-entry and hold harmless letters, letters of insurance coverage, etc.

  - Copies of agreements: mutual aid agreements, inter-agency agreements, etc.

- The preparation of maps is an effective tool to ensure all parties are knowledgeable about the location of:
  - Pre-approved Debris Management Sites
  - Permanent disposal sites
  - Emergency routes and facilities
  - Critical routes and facilities on both a local and regional basis
  - Critical environmental and historic sites
- These maps must be updated, as appropriate, and copies made available to appropriate parties, including contractors performing work.




**Activity 8.1—Debris Management Plan**

- Turn to Activity 8.1 in your Student Manual, Volume II (Group Activity Materials).

Notes: