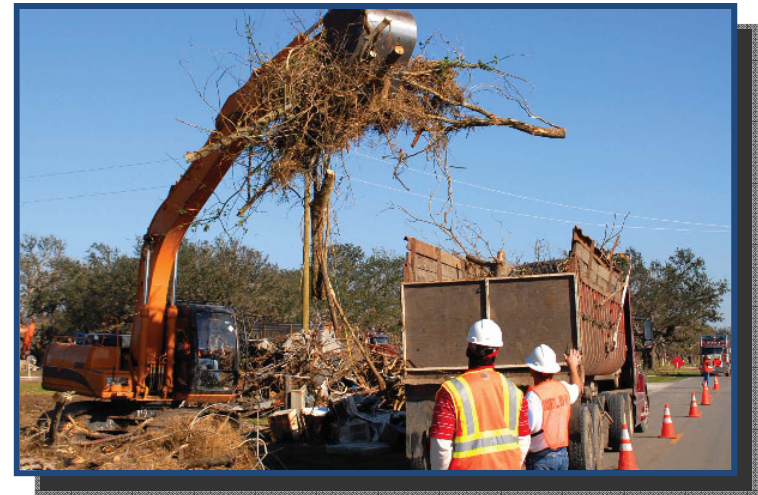


Coordination Between Debris Removal and Post Disaster Efforts

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Debris Management Overview

- Debris management is a significant concern after any major disaster.
- Disaster debris can overwhelm existing landfills and present daunting logistical challenges. The ability of residents to return and live in a safe and healthy environment depends on the quality of the debris response.
- Decisions made in the first few days after a disaster are critical in determining the success of a debris removal operation.



Local, State, and Federal Responsibilities

- What are local, state, and federal responsibilities before, during, and after disaster.
 - Local Government:
 - Responsible for all four phases of the emergency management cycle—preparedness, response, recovery, and mitigation
 - State Government:
 - Responsible for playing a supporting role in the immediate aftermath in addition to providing funding and guidance for long-term recovery and mitigation.
 - Federal Government:
 - Provides assistance only after local and state governments request federal aid.
- How are disasters assessed for funding?

Insurance Provider Responsibilities

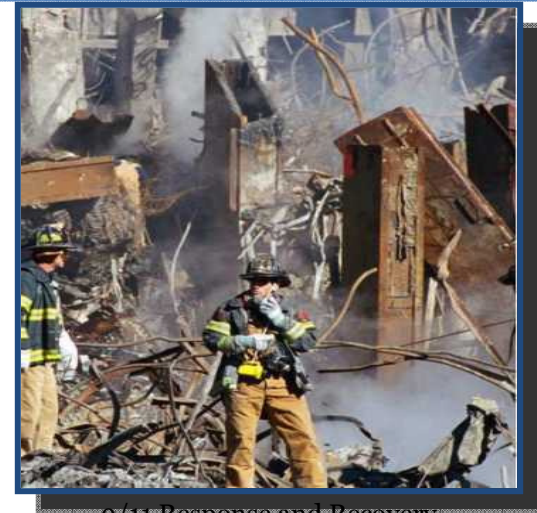
- Insurance providers have teams of personnel responsible for working on disaster claims.
- There are a variety of coverage genres that can assist in the recovery process, from natural disaster insurance, to homeowners insurance, and flood insurance.

Debris Removal Management Public Interest

- Eligible debris work must be in the public interest, which is defined as work necessary to meet the following:
 - Eliminate immediate threats to life, public health and safety
 - Eliminate immediate threats of significant damage to improved public or private property
 - Ensure economic recovery of the affected community to the benefit of the community-at large
 - Mitigate the risk to life and property by removing substantially damaged structures and associated appurtenances as needed to convert property to uses compatible with open space, recreation, or wetland management practices.

Goals for Debris Management Procedures

- Short-term Goal
 - Removal of debris to facilitate the immediate recovery of a region.
- Long-term goal
 - Proper consideration of the methods with which the waste is managed in order to ensure that their management will not pose a future threat to human health and the environment.



9/11 Response and Recovery



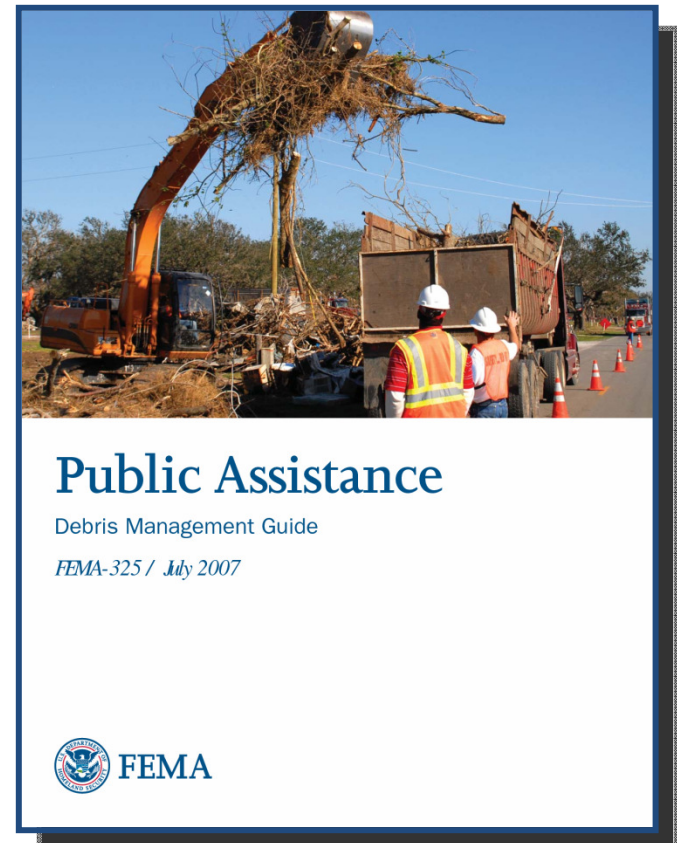
9/11 Memorial

Debris Management Processes

- The debris removal process may involve several activities occurring simultaneously including:
 - Waste separation
 - Hauling
 - Landfill disposal
 - Burning
 - Recycling
- The debris removal process involves effective communication capabilities in order to efficiently coordinate the efforts.
- Any debris removal operation has three primary phases: Planning, initiation, and implementation.

Debris Management: Planning

- Debris planning aids communities in better preparing for a disaster.
- Elements of a sound debris plan include:
 - A clear definition of roles and responsibilities of the major participants
 - An identification of debris staging and final disposal sites
 - A process for handling various types of vegetative and non-vegetative debris
 - A process for handling hazardous waste
 - At least two prequalified contractors to remove debris.

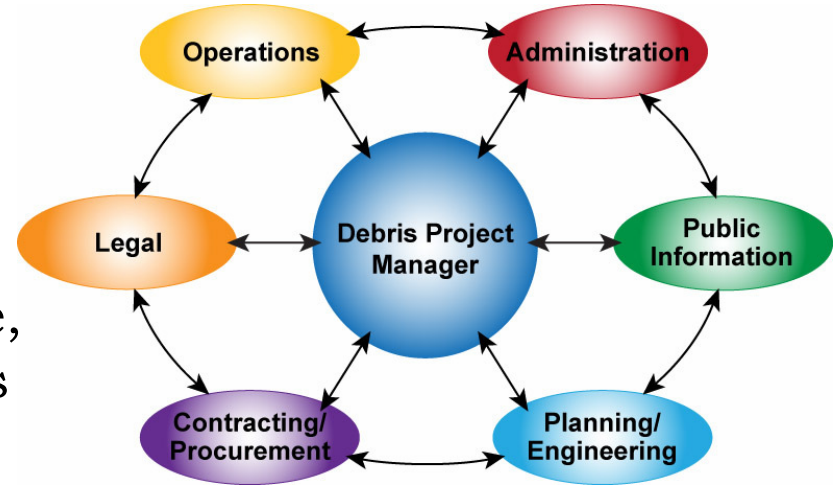


Coordination Among Stakeholders

- Collaboration and coordination is essential, both internally, between agencies within a jurisdiction and externally between agencies that have regulatory authority over debris management activities.
- It is crucial for various internal and external stakeholders to be engaged in the planning process, and for the plan to establish an organizational structure for managing disaster debris which appropriately addresses the roles and responsibilities of the various stakeholders.

Responsibilities and Governance Structure

- The success or failure of a debris management program relies on the quality of leadership and an effective governance structure.
- The size and composition of a staff organized to manage debris clearance, removal, and disposal issues depends on the magnitude of the disaster and the size of the jurisdiction.



Debris Management Planning Resources

ADDITIONAL PLAN DEVELOPMENT RESOURCES

General Debris Management

<http://www.fema.gov/government/grant/pa/demagde.shtm>
<http://www.fema.gov/government/grant/pa/dmgbroch.shtm>

Federal Debris Removal Funding

<http://www.fema.gov/government/grant/pa/policy.shtm>
<http://www.fhwa.dot.gov/programadmin/erelief.cfm>

Debris Forecasting

<http://www.fema.gov/plan/prevent/hazus/index.shtm>
<http://www.englink.usace.army.mil>

Debris Management Plans

<http://www.epa.gov/epaoswer/non-hw/debris-new/pubs/pnodd.pdf>
<http://www.fema.gov/plan/ehp/regioniii/debris.shtm>

Environmental Requirements

<http://www.epa.gov/oecaagct/lcla.html>
<http://www.epa.gov/garbage/debris.htm>
<http://www.epa.gov/garbage/recycle.htm>

Health and Safety Requirements

<http://www.osha.gov/>

FEMA Training

<http://training.fema.gov>

Debris Management: Initiation

- Debris project initiation begins immediately following a disaster, consisting of activities which may have significant financial implications to a locality or state. These activities may occur in a compressed and stressful period when search and rescue operations are under way and the community is providing basic services to citizens.
- Key activities in the initiation phase include:
 - Organizing government and contractor resources and personnel
 - Conducting preliminary damage assessments and estimates
 - Preparing and executing competitively bid contracts for debris removal and monitoring
 - Developing management and operational protocols and processes.

Debris Management: Implementation

- The implementation phase consists of two primary elements:
 - Debris removal- A combination of contractor and government personnel and equipment, and consists of removing and disposing of debris
 - Debris monitoring- A combination of contractor and government personnel which consists of verifying the eligibility, volume, and basis for cost of debris removal and disposal activities



Debris Management: Training

- It is essential that individuals involved in the debris management process are presented with as much training as possible. Additionally, prior to any event, training should be offered that interfaces local debris coordinators with other agencies responsible for debris clearance, removal, and disposal activities:
 - The National Guard
 - The State department of transportation
 - The State police
 - The State emergency management office
- FEMA provides training to state and local officials to in developing a debris management plan.
 - FEMA's Debris Management Planning Workshop

Zoning and Rebuilding Regulations

- Questions:
When normalcy returns how are zoning and building permits managed? At what point does a locality enforce codes in order to rebuild and grow?
- Response:
In order to effectively plan for zoning and rebuilding efforts after a disaster, local emergency operations plans must be developed to address the geographical layout and topography of a locality.

Case Study: Hurricane Katrina

- Prior to Hurricane Katrina the greatest recorded amount of disaster-generated debris in the United States resulted from Hurricane Andrew in 1992, which produced 43 million cubic yards of debris in Florida's Metro-Dade County. Hurricane Katrina generated more than 100 cubic yards of disaster debris.
- Mississippi and Louisiana removed disaster debris utilizing specific disaster debris management plans and emergency declarations



Hurricane Katrina Debris

- Debris created by flooding is often quite different from debris created by other disaster or storms. Disaster debris generated by Hurricane Katrina and subsequent flooding, as a result of levee failure, included:
 - Municipal solid waste – general household trash and personal belongings
 - Construction and demolition- building materials, drywall, lumber, carpet, furniture, mattresses, and plumbing
 - Vegetation- trees, branches, shrubs, and logs
 - House hazardous waste- oil, pesticides, paints, and cleaning agents
 - White goods- refrigerators, freezers, washers, dryers, stoves, water heaters, dishwashers, and air conditioners
 - Electronic waste- computers, televisions, printers, stereos, DVD players, and telephones

FEMA's Public Assistance Program

- Through FEMA's Public Assistance program, funding and technical assistance is provided for debris removal, implementation of emergency protective measures, and permanent restoration of eligible facilities and infrastructure.
- In order to qualify for federal assistance, the following criteria must be met:
 - A presidential declaration of disaster
 - Occurred within the designated disaster area
 - Be the legal responsibility of the applicant at the time of the disaster, and be in the public interest.

Conclusion

- Debris removal is an integral facet of an effective emergency response and recovery effort
- In order to efficiently prepare for debris removal, a debris management plan must be developed and personnel must be trained.
- There are a variety of resources available to assist in the debris management planning process, from the development of the plan to personnel training.