

Sustainable Materials Management  
(SMM) Web Academy Webinar:  
The Disaster Debris Recovery Tool -  
Materials Management for Debris  
Planning and Emergency Response

## Overview of EPA's Planning for Natural Disaster Debris Guidance (PNDD)

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PLANNING  
FOR  
NATURAL  
DISASTER  
DEBRIS



# Disaster Debris Management Challenges

**Larger Quantity of Debris**



**Wider Variety of Debris**



**Wider Area of Impact**



**Change in Public Perception**





## *Planning for Natural Disaster Debris, April 2019*

- **Purpose:** To assist communities (including cities, counties, states, tribes) in planning for debris before a natural disaster occurs to:
  - Increase community preparedness
  - Enhance community resiliency
  - Significantly aid decision-making during a response
- **Contents:**
  - EPA's comprehensive, pre-incident planning process to help prepare communities for effective disaster debris management
  - Recommended components of a debris management plan
  - Suggested management options for various natural disaster debris streams
  - A collection of case studies that highlights how several communities prepared for and managed debris generated by recent natural disasters
  - Resources for natural disaster debris planning and response, including resources on community resiliency and planning, debris management facilities, federal disaster assistance, and health and safety



# Possible Natural Disaster Debris Streams



- Asbestos-containing material
- Ammunition and explosives
- Animal carcasses
- Ash
- Asphalt
- Building contents
- Commingled debris
- Construction and demolition (C&D) debris
- Cylinders and tanks
- Electronics waste
- Food waste
- Hazardous waste
- Household hazardous waste
- Lead-based paint
- Marine or waterway debris
- Medical waste
- Metals
- Mixed waste
- Municipal solid waste (MSW)
- PCB-containing waste
- Pharmaceuticals
- Radiological-contaminated waste
- Scrap tires
- Soils, sediments, and sandbags
- Treated wood
- Used oil and oil-contaminated waste
- Vegetative debris
- Vehicles and vessels
- White goods

Natural disaster debris refers to the material and waste streams resulting from a natural disaster

# Range of Debris Management Activities

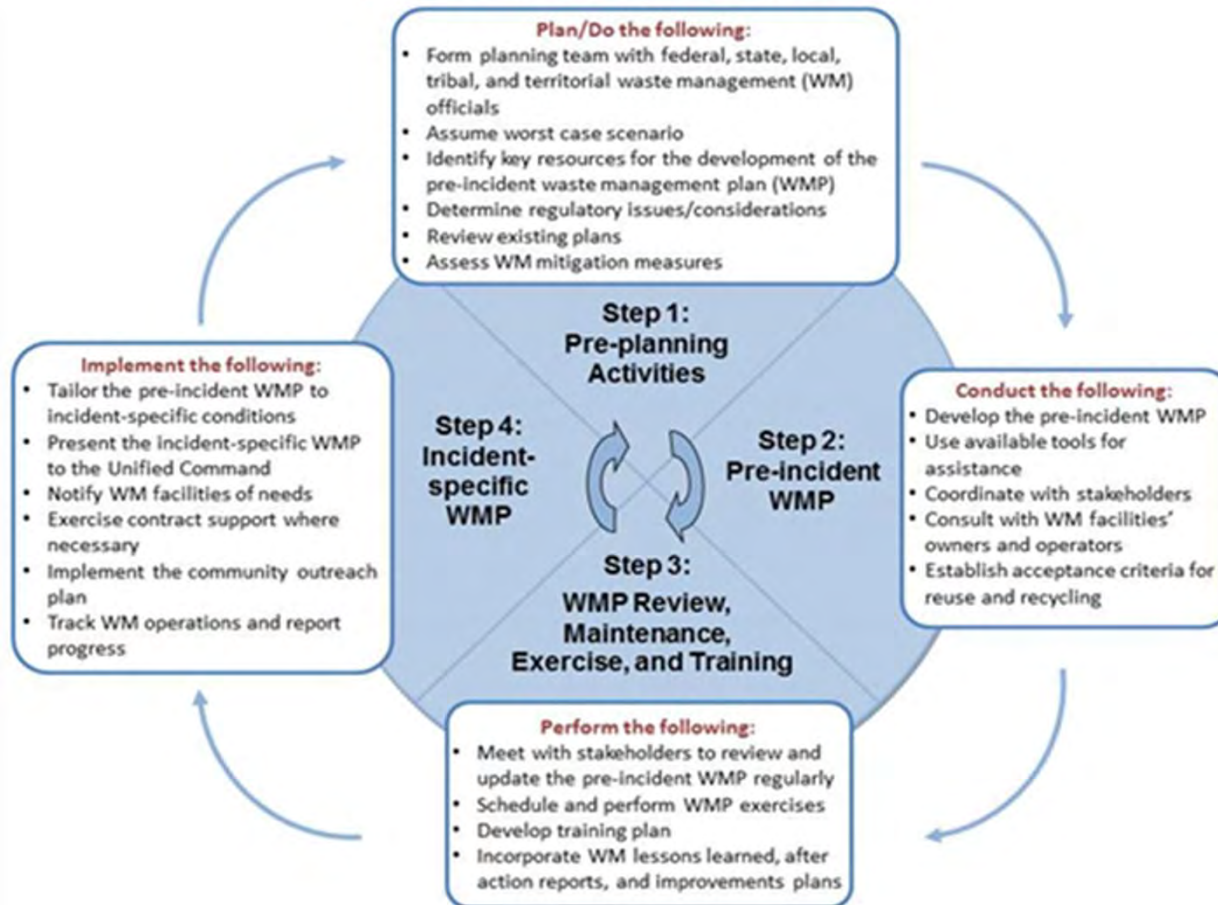
- Estimating debris quantities
- Assessing debris management options
- Triaging debris management
- Segregating debris into different material and waste streams
- Identifying debris management sites and facilities and their available capacities
- Collecting and hauling debris from the field and/or curb
- Removing debris from waterways and sensitive habitats (e.g., shorelines, wetlands, marshes)
- Sampling and analysis of debris
- Characterizing debris, including identifying hazardous waste, for proper management
- Obtaining emergency permits
- Processing debris (e.g., volume reduction, refrigerant removal, asbestos removal)
- Packaging and labeling debris for transport
- Transporting debris to debris management sites and facilities
- Managing debris through reuse, recycling, treatment, and/or disposal
- Monitoring incoming debris at debris management sites and facilities
- Tracking debris from the original deposited point to final destination
- Conducting debris management oversight activities at debris management sites, including:
  - site visits
  - inspections
  - environmental monitoring
- Communicating with the public about debris collection and other management activities

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# Planning Process for Natural Disaster Debris

## Pre-incident All-hazards Four-step WM Planning Process



# EPA's Suggested Debris Management Plan Outline

- I. Plan Overview (e.g., contact list, roles and responsibilities, regulatory requirements)
- II. Materials and Debris Streams
- III. Debris Quantities
- IV. Waste Characterization Sampling and Analysis
- V. Debris Management Strategies/Options (e.g., segregation, collection, storage)
- VI. Waste Management Facilities (e.g., pre-selected facilities)
- VII. Transportation (e.g., hauler information)
- VIII. Debris and Material Tracking and Reporting System
- IX. Community Communications/Outreach Plan
- X. Health and Safety for Debris Management Activities
- XI. Resource Summary (e.g., equipment and staffing needs, pre-negotiated contracts, mutual aid agreements)

Recommended Appendices (e.g., job aids for debris management staff positions, maps of waste management facilities and transportation routes)



# Planning with Limited Time and Resources

- Planning is not an all-or-nothing effort
- Planning activities that may provide the greatest benefit include:
  - Consulting with interested stakeholders
  - Identifying potential debris streams and possible quantities
  - Evaluating existing reuse and recycling programs
  - Considering waste collection strategies
  - Determining locations (or criteria) and capacities for debris management sites
  - Selecting potential reuse, composting, recycling, treatment, and disposal facilities
  - Creating a debris management-focused community outreach plan
  - Addressing health and safety considerations



# Lessons Learned: Beneficial Practices



- Planning before a disaster occurs
- Contacting waste management facilities to determine what debris they will accept
- Reusing and recycling disaster debris as much as practicable
- Segregating the debris as early as possible

# Lessons Learned: Adverse Practices

- Not working with the whole community
- Keeping debris commingled instead of segregating the debris by type, hazard, and/or contamination
- Not pre-selecting locations or criteria for debris management sites
- Relying on one or only a few debris management facilities



## Managing Materials and Wastes for Homeland Security Incidents

Waste management is a critical part of preparation for and response and recovery following homeland security and smaller incidents. These may include an act of terrorism involving chemical, biological and radiological agents, a large-scale natural disaster or an animal disease outbreak. This site provides public and private emergency planners, managers and responders with all-hazards information they can use to increase their communities' resiliency to these incidents.

### Waste Management Planning and Preparation



- [Benefits of planning](#)
- [Planning and preparation activities](#)
- [Writing a pre-incident waste management plan](#)

### Waste Management Considerations and Options



- [Waste management decision-making process](#)
- [What to consider in the decision-making process](#)

### Waste Management Options



- [Waste management hierarchy](#)
- [Possible destinations for waste](#)

### Waste and Climate Change



- [How planning can mitigate the impact of climate change on waste](#)

### Tools and Resources



- [U.S. Environmental Protection Agency Resources](#)
- [Centers for Disease Control and Prevention Resource](#)
- [Federal Emergency Management Agency Resources](#)
- [U.S. Army Corps of Engineers Resource](#)
- [U.S. Department of Agriculture Resources](#)
- [U.S. Nuclear Regulatory Commission Resource](#)

### Related Information



- [EPA Homeland Security \(HS\)](#)
- [EPA HS Research](#)
- [EPA's Sustainable Materials Management Program](#)
- [EPA Reuse and Recycling](#)
- [EPA Emergency Response](#)
- [EPA Water](#)

#### Highlights

- **NEW** [Learn about how the Disaster Debris Recovery Tool can help find materials and waste management locations before and after a disaster strikes](#)
- [Check out the updated Planning for Natural Disaster Debris guidance](#)

#### Scope of Waste Management

Waste management includes waste staging, sampling, characterization, packaging, transportation, reuse, recycling, treatment and disposal.

#### An All-Hazards Planning Approach



This graphic shows that different hazards have similar effects on the environment. Thus, emergency officials should plan for all hazards.

# Additional Resources

- **Pre-incident All-hazards Waste Management Plan Guidelines: Four-Step Waste Management Planning Process**
  - Describes the cyclical and ongoing process of waste management planning for homeland security incidents, including natural disasters
  - Provides a suggested outline for an all-hazards waste management plan
- **All-hazards Waste Management Decision Diagram**
  - Describes the waste management decision-making process during homeland security incidents, including natural disasters
- **Online Waste Management Planning Tool**
  - Assists communities with preparing and updating a waste management plan
  - Walks through the development of the most critical elements of a plan



# Questions?

For more information:

- Contact:
  - Melissa Kaps at [kaps.melissa@epa.gov](mailto:kaps.melissa@epa.gov) or 703-308-6787, EPA's Office of Resource Conservation and Recovery (ORCR)
- Visit:
  - ORCR's Managing Materials and Wastes for Homeland Security Incidents website at <https://www.epa.gov/homeland-security-waste>