

**Disaster Preparedness
in the Age of the Superstorm:
Creating a Disaster Debris
Management Plan**

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The Wake of a Major Hurricane Disaster

Harvey
Irma
Maria



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Disasters Can Take Many Forms

- **Hurricanes**
- **Tornadoes**
- **Floods**
 - Flash
 - Riverine
- **Acts of Terrorism**
- **Wildfires**
- **Ice Storms**
- **Tsunamis**
- **Volcanoes**
- **Earthquakes**



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Disaster Debris

- Vegetative debris
- Soil, mud, and sand
- Sandbags
- Construction and demolition (C&D)
- Utility system debris
- Household furnishings and personal effects
- Hazardous waste
- Metal debris
- White goods
- Vessels and boats
- Putrescent Debris
- Vehicles
- Infectious waste
- Household hazardous waste (HHW)



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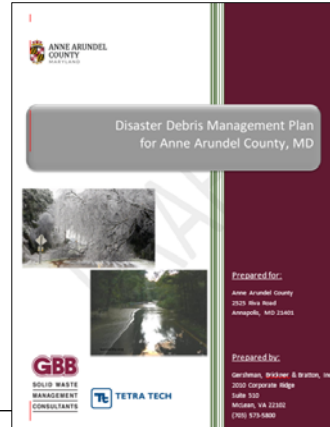
What Can You Do?



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What is a Disaster Debris Management Plan (DDMP)?

A written document that establishes procedures and guidelines for managing disaster debris in a coordinated, environmentally-responsible, and cost-effective manner.



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Importance of a DDMP

- Facilitates response and recovery activities
- Facilitates the quick return of a community to normalcy
- Reduces impacts to humans and the environment
- Ensures effective use of resources
- Helps to control and minimize costs
- Aids in complying with applicable local, state/tribal/territorial, and Federal regulations



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Elements of DDMP



- Overview
- Types of Likely Incidents (and Assumptions)
- How Debris will be Collected and Removed
 - Specific Information about Removal from Private Property
- Public Information and Development Schedule
- Health and Safety Precautions
- Environmental Considerations
- Personnel and Contract Resource Inventory and Schedule
- Monitoring Debris Operations



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Overview

- Purpose of the DMP and its overarching goals
- How the DMP was developed and who participated in the development
- Whether the DMP is officially adopted by the governing body

How does it fit the overall Emergency Management Plan?



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Incidents and Assumptions

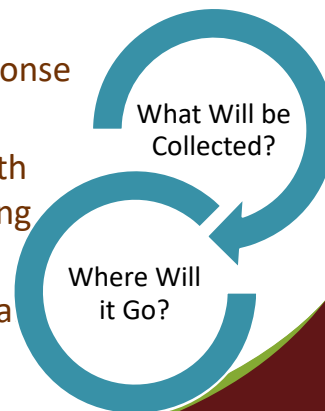
- Types and severity of incidents most likely to occur along with estimates of types of debris and amounts generated
- Types of handling and equipment necessary to safely manage the debris
- Description of general terrain, land use, and accessibility for areas most likely to be impacted and how these characteristics might affect debris operations



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Debris Collections & Removal

- Identify and prioritize facilities that may be impacted by debris
- Define the priorities during both response and recovery operations
- Describe the coordination process with other entities responsible for managing debris
- Identify roles and responsibilities for a entities and departments involved



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Debris Collections & Removal

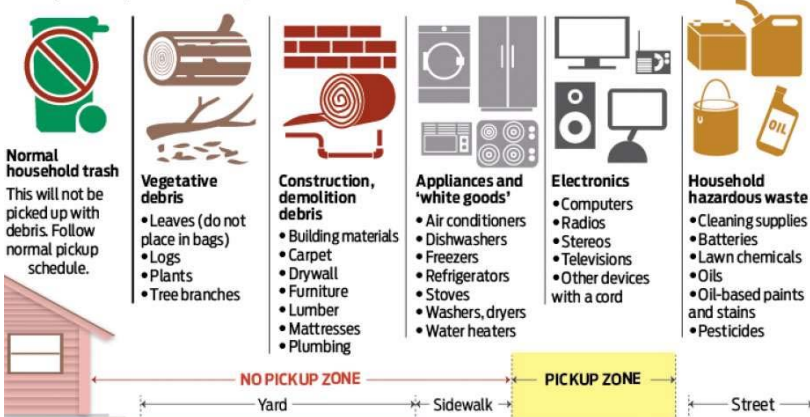
- Describe the methods that will be used to collect debris (e.g., curbside collection, community drop-off bins)
- Private Property Plans
 - Identification of the circumstances under which the jurisdiction will take such action
 - The enabling laws that allow government to intercede in private property matters
 - The process the jurisdiction will use to obtain permissions to enter onto private property
 - The process the jurisdiction will undertake to recoup costs (such as insurance proceeds)



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Heavy haul

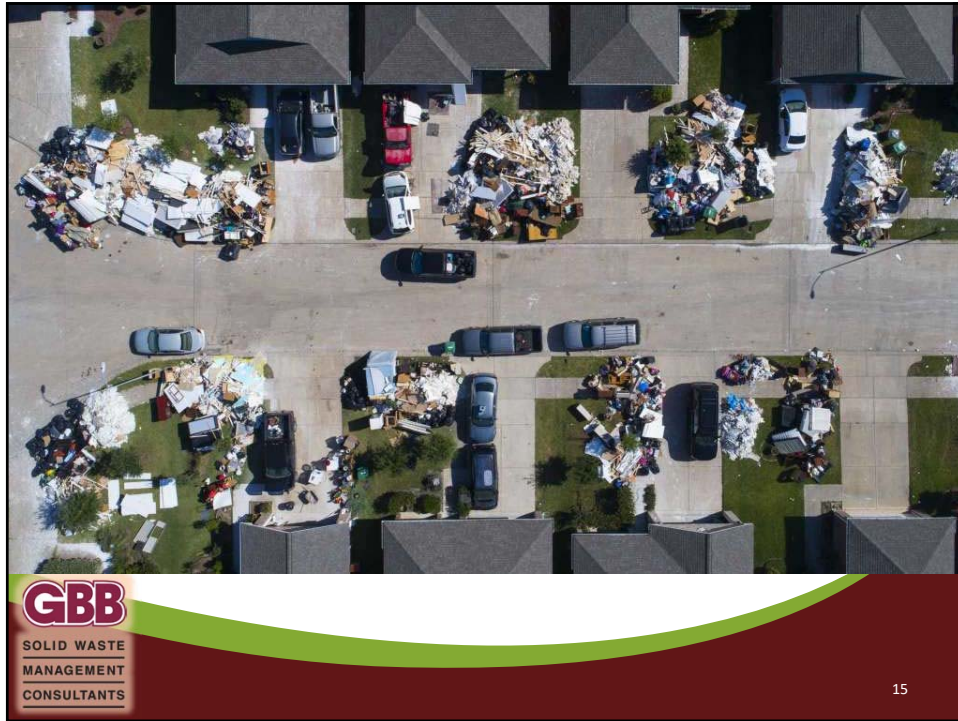
Officials said storm debris that will be hauled off by crews should be divided into five categories, and placed along roadways – but not in the road – and away from parked cars, trees and other obstructions.



Source: City of Houston Solid Waste Management

Ken Ellis / Chronicle

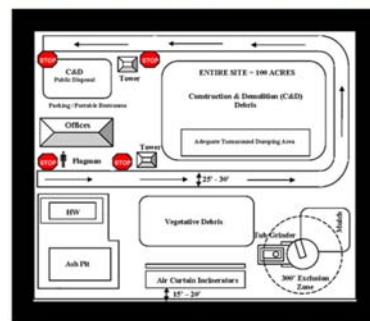
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Temporary Debris Storage and Disposal Sites

- Identify locations where debris will be segregated, reduced, and disposed and whether it will be recycled
- Identify the potential permits that will be required to establish a facility
- Address traffic circulation at each of the disposal sites, disposal capacity, and how debris will be managed if there is a lack of landfill capacity
- Identify the final disposal site of whole, reduced, or recycled debris

Sample Debris Management Site Layout



Source: emilms.fema.gov/IS0633/groups/8.htm



Public Information

- Identify the public information strategy to ensure residents receive accurate and timely information about the parameters, rules, and guidelines for debris removal



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Health & Safety Requirements

- Specific details on safety rules and procedures to protect workers and the public
- Specific measures for adherence to safety rules and procedures



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Environmental & Regulatory Compliance



- Identify all debris operations that may trigger compliance with environmental and historic preservation laws, regulations, and Executive Orders
- Identify how compliance will be achieved



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Force Account and Contract Resources



- Identify the types of work that the jurisdiction will perform with staff resources versus contracted services
- Describe the process and procedure for acquiring competitively procured contracted services
- Identify specific contract requirements and explain how contractor qualifications are established



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Monitoring Debris Operations

- Detail to how the jurisdiction will monitor its debris removal contractor at pickup sites and all disposal sites
- Identify who will perform the monitoring and describe each monitoring task
- Identify measures to avoid conflicts of interest in awarding monitoring contracts and between monitoring and debris removal contractors



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Disasters Happen

But, if you Plan Ahead . . .

You Can Avoid a TOTAL Disaster

Yikes!

Planning

Years of Landfill Life Lost

\$ Millions Lost

Saves Resources

Gains \$ Reimbursed

Timely Response



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Questions and comments?

Thank you!

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