



Sustainable and Resilient Communities Through Solid Waste Investments and Best Practices After a Disaster

CDBG-DR and CDBG-MIT Webinar Series

Summer 2020

Welcome and Speakers

- Session Objectives
- Participants will:
 - Learn what constitutes solid waste and solid waste management activities.
 - Better understand the criteria to determine if a project is eligible under CDBG-DR or CDBG-MIT funds.
 - Gain effective strategies to avoid common mistakes made when implementing a solid waste-related project.
- Speakers
 - Clay Lloyd, HUD DRSI
 - Melissa Kaps, Office of Resource Conservation and Recovery, EPA
 - Paul Fericelli, Caribbean Environmental Protection Division, EPA Region 2



Overview: HUD Requirements



CDBG-DR Purpose

The CDBG Program provides Grantees funds to develop viable communities by **providing decent housing and a suitable living environment**, and by **expanding economic opportunities**, principally for low- and moderate-income persons.

- Be a CDBG-eligible activity (or be eligible under a waiver or alternative requirement in this notice);
- Meet a national objective; and
- Address a direct or indirect impact from the major disaster in a Presidentially-declared county



CDBG-DR Housing Activities

Acquisition, demolition, rehabilitation, and new construction

- Multifamily Affordable Housing, Single Family Rehab, Buyouts
- Solid waste costs: recycling, construction debris, contractor debris removal

2017, 2018, 2019 Grantees:

- For new construction and replacement of substantially damaged residential buildings, a **Green Building Standard** must be met.
 - ❖ In many programs used to meet a Green Building Standard, the disposal of construction materials is considered “solid waste”.
- Non substantially damaged residential buildings will follow the guidelines in the **HUD CPD Green Building Retrofit Checklist**.



CDBG-DR Economic Development Activities

Create or retain jobs

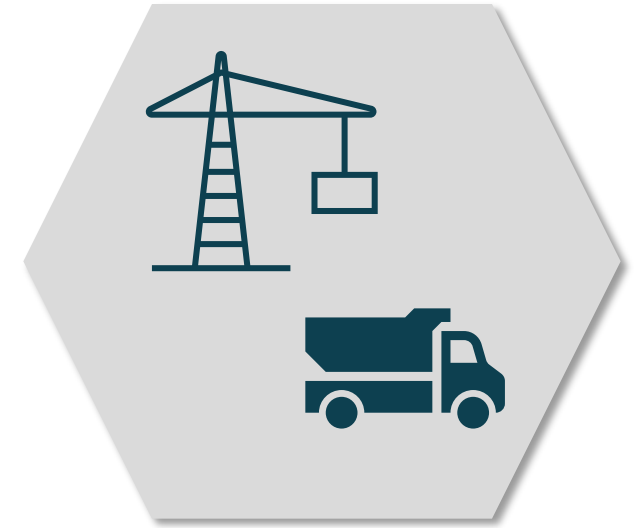
- Workforce training: housing trades, construction trades, also solid waste trades



CDBG-DR Infrastructure Activities

Public facilities and public improvements

- Water and sewage treatment plants, power and electrical grid work, solid waste management facilities



2017, 2018, 2019 Grantees:

- Disaster preparedness and mitigation measures should be integrated into **infrastructure activities**.
 - Including: how they will promote community-level and/or regional post-disaster recovery and mitigation planning



CDBG-MIT



CDBG-MIT Purpose

CDBG–MIT funds represent a unique and significant opportunity for grantees to use the assistance in areas impacted by recent disasters to carry out strategic and high-impact activities to **mitigate disaster risks** and **reduce future losses**.

- Meet the definition of a mitigation activity;
- Address current and future risks as identified in the grantee's mitigation needs assessment of most impacted and distress (MID) areas;
- Be CDBG-eligible activities or otherwise eligible pursuant to a waiver or alternative requirement; and
- Meet a national objective, including additional criteria for mitigation activities and covered projects



CDBG-MIT Purpose

CDBG-MIT funds may be used to:

- Support infrastructure projects, housing activities, public services, economic development, disaster preparedness, and planning efforts
- Increase resilience and reduce or eliminate risk
- 50% of CDBG-MIT funds must also be used to benefit low-to-moderate income (LMI) persons
- Green Building Standards are recommended in CDBG-MIT



References to Solid Waste – CDBG-MIT Notice

*“(1) Infrastructure. Typical infrastructure mitigation programs may include regional investments in risk reduction for flood, fire, wind and other hazards to develop disaster-resistant infrastructure; upgrading of water, sewer, **solid waste**, communications, energy, transportation, health and medical, and other public infrastructure to address specific, identified risks; financing multi-use infrastructure; and green or natural mitigation infrastructure development.”*

- After disasters, the processing of disaster debris and solid waste can become overwhelmed due to damage or increased volume of processing
- Mitigation programs could address that identified risk
- Infrastructure activities include solid waste facility improvements
- Planning activities include developing risk reduction plans which can help with continuity of operations



Solid Waste Investments and Best Practices After Disaster

Melissa Kaps, Office of Resource Conservation and Recovery EPA



Sustainable and Resilient Communities Through Solid Waste Investments and Best Practices After Disaster



HUD-EPA Webinar
September 10, 2020

Eligibility of solid waste projects funded through CDBG-DR or CDBG-MIT and best practices for solid waste management to protect human health and the environment to make communities economically stronger, sustainable, and resilient



Disclaimer

This presentation does not:

- Impose any binding requirements
- Determine obligations of the regulated community
- Change or substitute for any statutory provision or regulation requirement
- Represent, change, or substitute for any EPA policy or guidance
- Control in any case conflict between this discussion and state, regulation, policy, or guidance

The views expressed in the presentation are those of the author(s) and do not necessarily represent the views or policies of the U.S. Environmental Protection Agency.



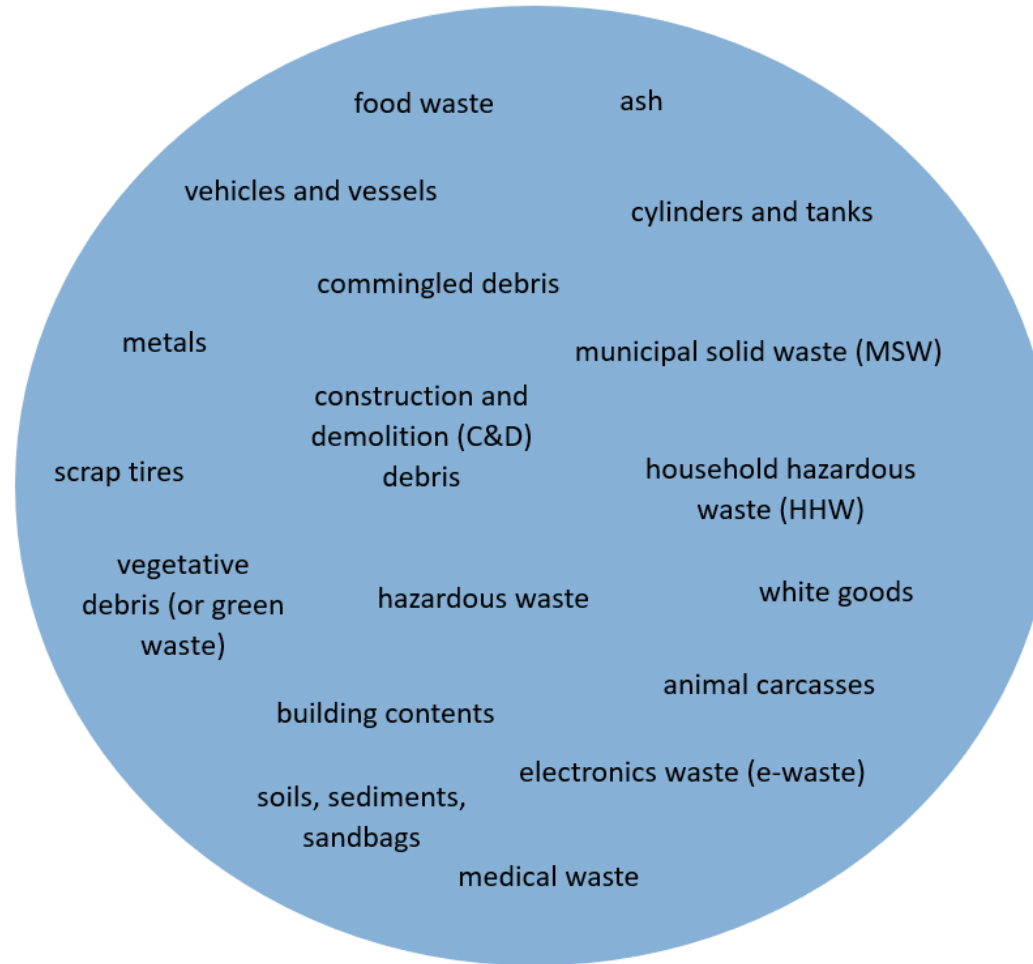
What is Solid Waste?

- “Solid waste” generally means any garbage or refuse resulting from industrial, commercial, mining, and agricultural operations, and from community activities.
- Nearly everything we do generates some kind of solid waste.

What is Debris?

- “Debris” generally means the material and waste streams resulting from a natural disaster.

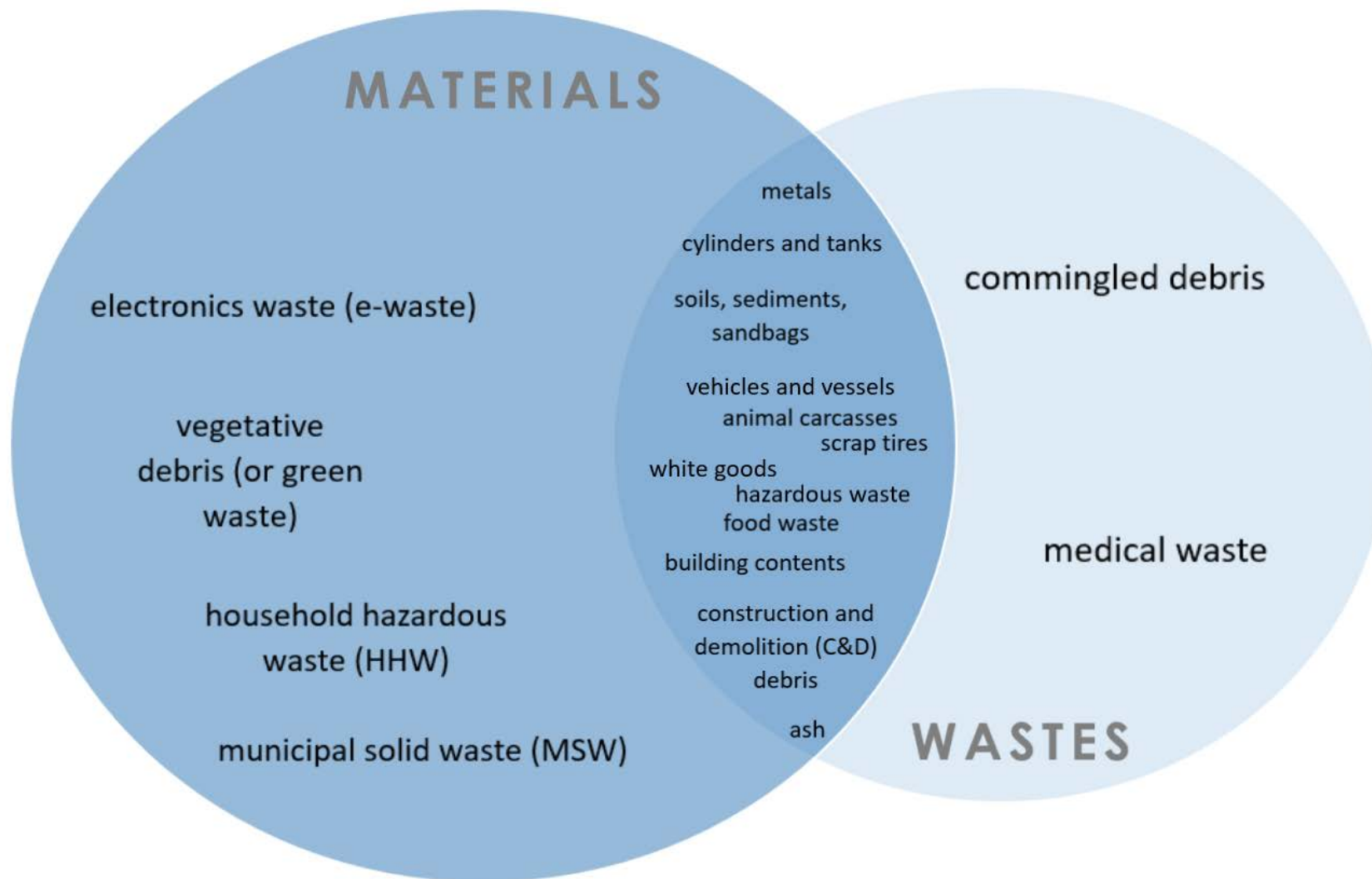
What is Debris?



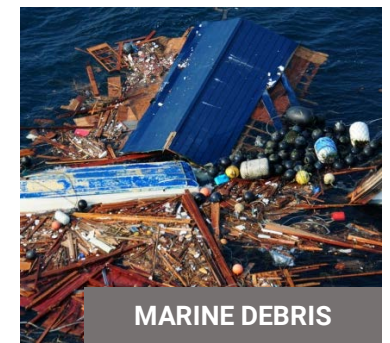
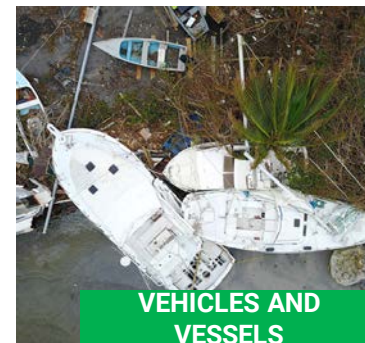
What is Debris?



What is Debris?



Possible Material and Waste Streams Resulting from Disasters



Disaster Debris Management Challenges

Larger Quantity of Debris



Wider Variety of Debris



Wider Area of Impact



Change in Public Perception





Impacts of Debris on Communities

- Debris removal is the third largest cost across FEMA's emergency response work (Cat. A), representing higher state matching costs.
- Debris and removal activities slow down response and recovery:
 - Large quantities of debris can make recovery efforts difficult by, for example, hindering emergency personnel, damaging or blocking access to critical infrastructure, and posing threats to human health and the environment.



Impacts of Debris on Communities

- Debris creates adverse social, economic, and environmental effects such as:
 - Soil, water, and air pollution
 - Spread of diseases
 - Promote illegal dumping and burning
 - Detracts future investments in the community
- Communities view debris as a stressful, visual reminder of the disaster's devastation.

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

PLANNING FOR NATURAL DISASTER DEBRIS



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

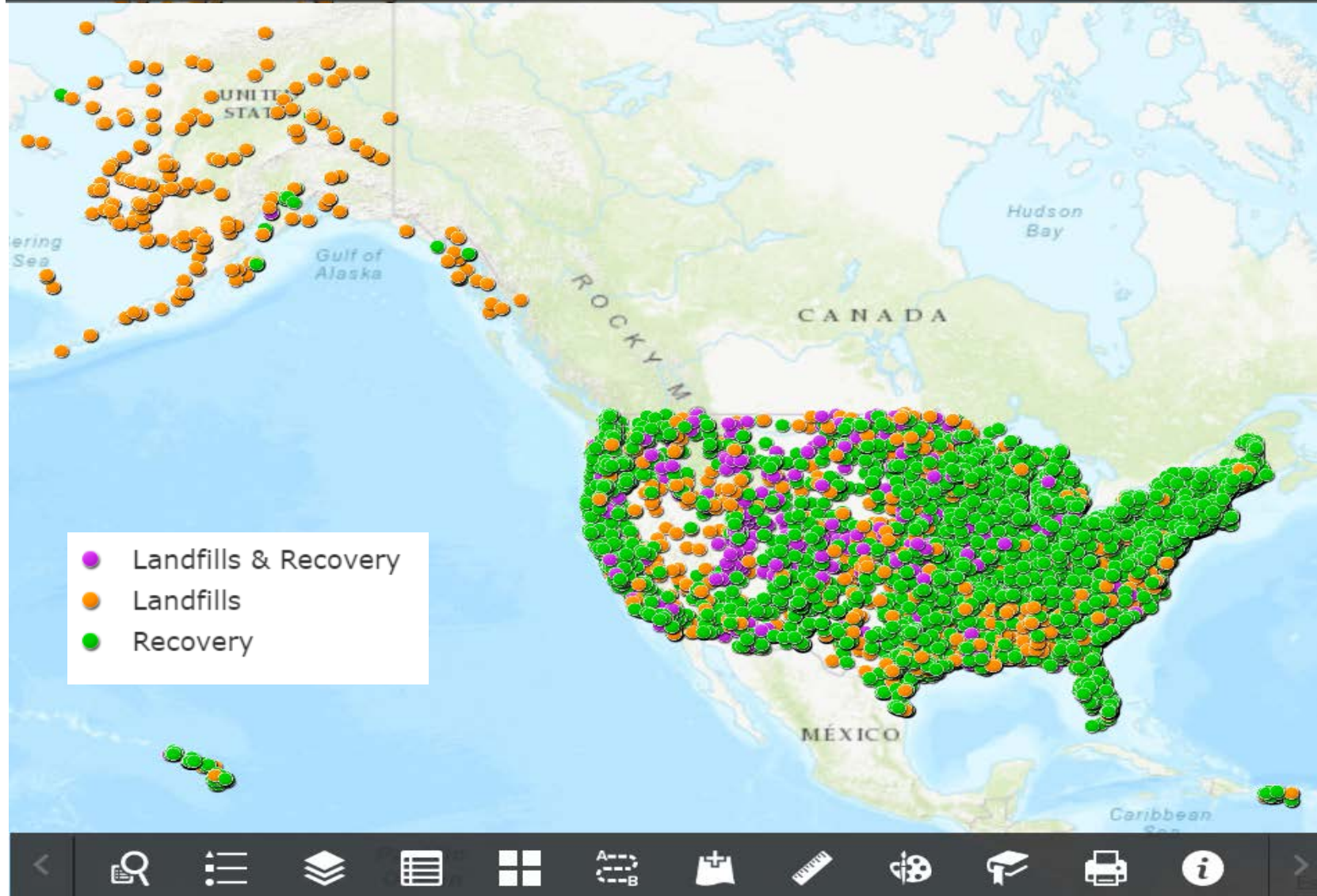


April 2019
EPA 530-F-19-003

<https://www.epa.gov/homeland-security-waste/guidance-about-planning-natural-disaster-debris>



U.S. EPA Disaster Debris Recovery Tool



Benefits of Mitigation

Communities can mitigate possible hazards created by disasters by having resilient solid waste infrastructure and sustainable materials management strategies.

- Recover faster, encouraging residents and businesses to stay in the area and helping a faster re-establishment of community lifelines.
- Contain less harmful materials that can be released, minimizing hazardous debris and possible contamination.
- Generate less debris, spending less money on cleanup and debris management.
- Use fewer resources to rebuild resulting in fewer emergency response and disaster recovery costs.



Relationships Between Solid Waste, Debris, Mitigation and Recovery



SOLID WASTE

Solid waste can generally be thought of as what is generated by a community daily from residences and industrial and commercial enterprises.

- Predictable day-to-day (quantity and composition)

DEBRIS

Debris can generally be thought of as what is generated as a result of natural disaster.

- Timing is unpredictable
- Quantity and composition are dependent on scale and type of natural disaster

SOLID WASTE AND DEBRIS

Solid waste and debris are comprised of many of the same material and waste streams.

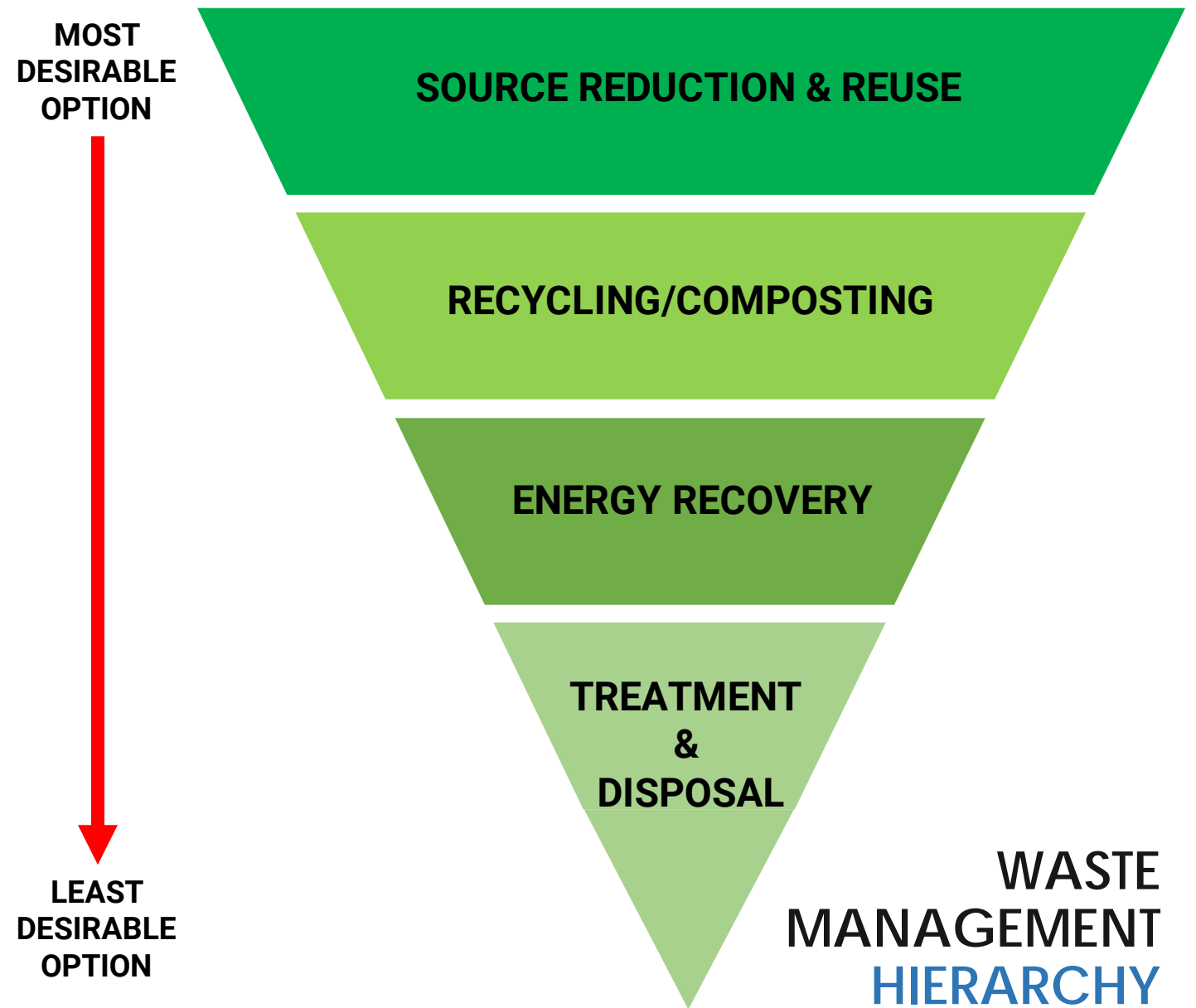
MITIGATION AND RECOVERY

Investing in planning, infrastructure, housing, and economic development can help prevent or reduce the negative impacts of solid waste and debris before and after a disaster.

Best practices to assist decision-making on solid waste investments

An important goal of waste management is to reduce the amount of waste and preserve valuable, limited resources and landfill space. This goal can be met by reducing the amount of waste generated and reusing and recycling as much material and waste as possible.

The [Waste Management Hierarchy](#) ranks the various management strategies from most to least environmentally preferred. The hierarchy places emphasis on reducing, reusing, and recycling as key to sustainable materials management of solid waste and debris.



Materials Recovery Facilities and Composting Facilities

- Paper and Paperboard
- Glass
- Metals
- Ferrous Metals
- Aluminum
- Nonferrous Metals
- Plastics
- Food
- Yard Trimmings
- Rubber and Leather
- Textiles
- Vegetative Debris
- Construction and Demolition Materials
- White Goods
- Animal Carcasses
- Other Materials



RECYCLING FACILITY



SCRAP TIRE RECYCLING



COMPOSTING FACILITY

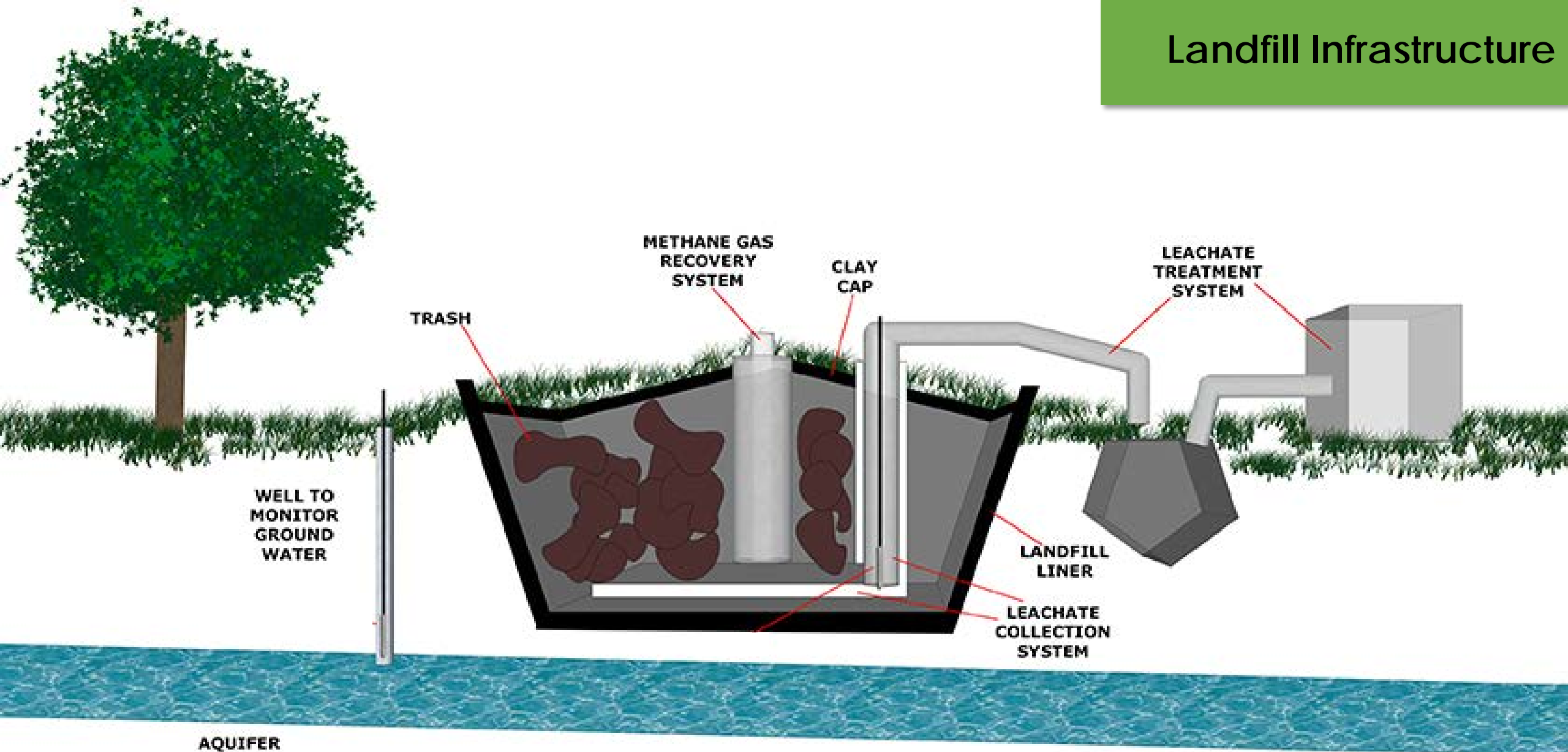
Planning

Assess solid waste management and infrastructure needs to provide information needed for creating a tailored plan for solid waste management before, during, and after a disaster

- Complete a waste stream assessment
- Forecast debris quantities
- Conduct a waste management vulnerability assessment
- Source reduction and recycling plan
 - Planning
 - Purchase of materials (e.g., collection bins)
- Illegal Dumpsite Elimination Plan



Landfill Infrastructure



Waste-to-Energy



Additional Sites Supporting Solid Waste and Debris Management

Transfer Stations

A transfer station is a building or processing site for the temporary deposition of waste for consolidation prior to transport to a processing or disposal facility.

Community Drop-off Centers

- Household Hazardous Waste
- White goods
- Electronics
- Others

Temporary Debris Sites

These sites are established when a disaster-affected community is not able to take debris directly from the collection point to its final destination, such as a landfill or recycling facility.



Planning

Develop plans implementing mitigation measures to prevent solid waste generation and contamination resulting from a disaster

- Develop and enforce ordinances regulating solid waste, junk vehicles, and other wastes of concern.
- Update building codes and incorporate resiliency.
- Implement local policies that provide incentives for building resiliently and sustainably managing materials.
- Develop a plan for community outreach and education materials to promote waste reduction best practices in general and safer alternatives to household chemicals
- Reduce and remove accumulation of materials and wastes of concern and other items and structures that could add to potential disaster debris or cause contamination.
- Planning for sustainable deconstruction of abandoned buildings and other buildings and land acquisition
- Planning for clean up open dumps and other hazardous sites

Community Outreach Program and Education Materials

Develop programs and education materials that can help provide awareness to the public, private businesses and industries about waste minimization strategies.

- Sustainable materials management
 - Sustainable packaging
 - Structural retrofits
- Disaster debris management
- Pollution prevention



Planning

Support pre-incident planning to increase sustainable materials management

- Develop and implement a disaster debris management plan to manage solid waste and debris using EPA's Planning for Natural Disaster Debris guidance.
 - Determine temporary staging areas for segregated waste/debris piles.
 - Contact nearby solid waste management and materials management facilities to determine whether they accept disaster debris. EPA's [Disaster Debris Recovery Tool](#) can help with this.
- Develop reuse and recycling markets (e.g., market analysis, electronics recycling, construction and debris, food waste management)

Planning



Capacity plans to support a strong operation of solid waste infrastructure and management

- Solid waste facility operation plan (e.g., waste placement schedule, runoff & runout, slope stability)
- Closure and Post-closure Cell Care Plan
- Smart curbside pick-up routes
- Solid waste operation and emergency response plan
 - Collection and Transfer, Landfill and Landfill gas, Recycling and Special Waste, Safety

Infrastructure

Strengthen solid waste infrastructure for day-to-day operations, which would translate to more effective and efficient management of solid waste and debris streams generated by a disaster.

- Assessment and construction of solid waste processing and disposal facilities (e.g., transfer station siting, landfill expansion through new cell, Waste-to-Energy facility)
- Improvements for closure of open dumps (cover installation, stormwater control, gas control, leachate monitoring, and groundwater monitoring)
- Capture methane in landfills for energy production (energy generation feasibility study)
- Implement adaptation measures to extreme climate events at waste management facilities

Infrastructure

Strengthen solid waste infrastructure for day-to-day operations, which would translate to more effective and efficient management of solid waste and debris streams generated by a disaster.

- Make waste management facility improvements to support permits, operations and environmental compliance
- Retrofit existing structures and hazardous sites (e.g., sites that store chemicals such as industrial facilities, underground storage tank sites)
- Expand reuse and recycling operations
- Expand anaerobic digestion and composting operations
- Information and technology (IT) system infrastructure to support management, operation and economic activities resulting from solid waste and disaster debris management.
- Clean up open dumps and other hazardous sites

Economic Development



Improve economic growth in communities through green businesses and job opportunities

- **Raising the local workforce** in disaster impacted areas on environmental skills trades needed for the recovery of the community and securing job placement through community benefit agreements.
 - **pollution prevention, reduction and removal** (e.g., sanitation, recycling and reuse occupations).
 - **natural resources conservation** (e.g., sustainable forestry, land management, stormwater management)
 - **construction & deconstruction** (e.g., sustainably deconstruction techniques, inspectors, green building)
- **Small Business Incubator Program**
Establishing a program that help startup businesses grow and succeed by providing free or low-cost workspace, mentorship, expertise, access to investors, and in some cases, working capital in the form of a loan to implement sustainable materials management strategies and ideas.



Housing

- Repairs and improvements to make structures resilient to natural disasters
- Sustainably deconstruct buildings and land acquisition



Examples of HUD CDBG-DR and CDBG-MIT Types of Activities Interacting with Solid Waste and Disaster Debris

	Planning	Infrastructure	Economic Development	Housing	Public Service
Assess solid waste management and infrastructure needs to provide information needed for creating a tailored plan for solid waste management before, during, and after a disaster.	✓				
Develop plans implementing mitigation measures to prevent solid waste generation and contamination before, during, and after a disaster.	✓				
Support pre-incident planning to increase sustainable materials management	✓				
Strengthen solid waste infrastructure for day-to-day operations, which would translate to more effective and efficient management of solid waste and debris streams generated by a disaster.		✓			
Capacity plans to support a strong operation of solid waste infrastructure and management	✓				
Improve economic growth in communities through green business and job opportunities			✓		
Community outreach program and education materials					✓
Repairs and improvements to make structures resilient to natural disasters		✓		✓	

Strategies for Leveraging Federal Funding Sources

- Build capacity on grant writing and grant management in your community.
- Capitalize on disaster recovery funds **AND** federal recurrent funds.
- Include in your planning the sequencing of funding available.
- Implement federal match programs.

Get the private sector involved

- Support planning, infrastructure, housing and economic development investments (e.g., education programs, reuse of recovered materials after a disaster).



FEMA



EPA





FEMA

Get Your Mitigation Projects Listed in the Local Mitigation Plan

Solid waste mitigation projects that are listed in the local mitigation plan **become eligible for certain federal funding**





Success Stories

Puerto Rico Housing Department

CDBG-DR

- **Infrastructure programs** that provide the possibility of solid waste infrastructure investments
 - Non-Federal Match, City Revitalization
- **Planning programs** may provide funds for the various planning activities interacting with solid waste and disaster debris at a regional, local and community scale
- **Economic Development programs** including a workforce development and small business incubator and accelerator program This program may provide funds and technical assistance to small businesses implementing strategies for sustainable materials management

CDBG-MIT

- **Engagements** with federal agencies, central government departments, local governments and stakeholders to learn about solid waste and disaster debris needs, challenges and opportunities to support development of the Action Plan



QUESTIONS AND ANSWERS

EPA Panel



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Resources



Resources

EPA Resources for Solid Waste and Disaster Debris Management

1. Facts and Figures about Materials, Waste and Recycling

<https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling>

2. Managing Materials and Wastes for Homeland Security Incidents

<https://www.epa.gov/homeland-security-waste>

3. Disaster Debris Planning

<https://www.epa.gov/large-scale-residential-demolition/disaster-debris-planning>

4. Tools for Preventing and Diverting Wasted Food

<https://www.epa.gov/sustainable-management-food/tools-preventing-and-diverting-wasted-food>

5. Sustainable Materials Management

<https://www.epa.gov/smm>



Upcoming Trainings

DRGR Workshop for Disaster Recovery	Sept. 15, 2020 2:00 - 3:30 PM EDT
Developing Your Infrastructure Projects – from Procurement to Closeout	Sept. 17, 2020 2:00 - 3:30 PM EDT
Duplication of Benefits: Understanding and Applying the Requirements	Sept. 22, 2020 2:00 - 3:30 PM EDT
Effective Regional Coordination and Engagement Approaches	Sept. 24, 2020 2:00 - 3:30 PM EDT





Thank you!

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