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Disaster Debris Management: Requirements, Challenges, and Federal Agency Roles

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Summary

Every year, communities in the United States are affected by disasters such as hurricanes, earthquakes, tornadoes, volcanoes, floods, wildfires, and winter storms. After a disaster, when a region turns its attention to rebuilding, one of the greatest challenges often involves properly managing disaster-related debris.

Disaster debris typically includes soils and sediments, vegetation (trees, limbs, shrubs), municipal solid waste (common household garbage, personal belongings), construction and demolition debris (in some instances, entire residential structures and all their contents), vehicles, food waste, "white goods" (refrigerators, freezers, air conditioners), and household hazardous waste(cleaning agents, pesticides, pool chemicals). Each type of waste may contain or be contaminated with toxic or hazardous constituents.

In the short term, debris removal is necessary to facilitate the recovery of a geographic area. In the long term, the methods by which these wastes are managed requires proper consideration to ensure that their management (e.g., by landfilling) will not pose future threats to human health or the environment.

Under a number of different conditions and authorities, several agencies may provide debris removal assistance to communities affected by a disaster. For example, under certain conditions, the Federal Emergency Management Agency (FEMA) provides funding for disaster debris removal and/or approves direct federal assistance to certain entities that do not have the capability to respond to a disaster. Also, under certain conditions, the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency (EPA) may assist communities with debris removal activities. For example, the Corps may perform right-of-way clearance, curbside waste pickup, private property debris removal, and property demolition, and EPA may help coordinate the collection and management of contaminated debris and household hazardous wastes.

This report focuses on the requirements applicable to disaster debris management and the challenges that communities face when attempting to manage it both quickly and safely. This report also provides an overview of the types of support provided by FEMA, the Corps, and EPA with respect to disaster debris removal. A discussion of the programs or statutory authorities under which that support may be provided is beyond the scope of this report. There are a number of conditions under which federal agencies may support communities with disaster debris removal. With respect to FEMA's involvement in debris removal assistance, this report focuses on support that may be provided after the President declares the incident to involve a "major disaster" under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act, P.L. 93-288, as amended).

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Introduction

Every year, disasters such as wildfires, floods, earthquakes, hurricanes, tornadoes, volcanoes, and winter storms affect American communities. In the aftermath of a major disaster, a potential threat to safety and obstacle to recovery is the presence of significant amounts of disaster debris. Depending on the type of disaster, debris may include waste soils and sediments; trees, limbs, and shrubs; man-made structures (e.g., collapsed homes, buildings, or bridges); and personal property. Residents' ability to return to the area and live in a safe and healthy environment may depend on how quickly and effectively a community manages its debris.

To avoid overburdening existing landfill space, many communities attempt to divert as much debris as possible from area landfills through recycling, burning, composting, or another method of volume reduction. The logistics of such diversion can prove complicated without proper pre-disaster planning.

Improperly managing debris can have detrimental long-term repercussions. During or after a disaster, some debris will likely become mixed with hazardous constituents. For example, under flooding conditions, household hazardous waste or sewage may contaminate otherwise benign personal property or building materials, such as drywall or carpeting. Improper disposal of contaminated debris may lead to future environmental, health, or safety problems, such as groundwater contamination.

This report provides an overview of federal and state waste management requirements relevant to debris removal, as well as the challenges that can make it difficult for communities to manage debris quickly *and* safely. To support those communities, a number of federal agencies may provide certain types of debris removal assistance. This report provides an overview of federal and state agency roles in disaster debris removal. A number of federal agencies are authorized to support communities with disaster debris removal. This report focuses on support provided by the Federal Emergency Management Agency (FEMA), the U.S. Army Corps of Engineers (the Corps), and the U.S. Environmental Protection Agency (EPA). Each agency that provides debris removal support may do so under a number of different conditions or statutory authorities.[1] A discussion of those various conditions or authorities is beyond the scope of this report.

Disaster Debris Management

Federal and State Waste Management Requirements

Federal waste management standards are established in the Solid Waste Disposal Act—more commonly referred to as the Resource Conservation and Recovery Act of 1976 (RCRA; 42 U.S.C. §6901 et seq.). Under Subtitle C of RCRA, EPA has primary authority to regulate solid waste identified as hazardous.[2] Non-hazardous solid wastes and wastes explicitly excluded from the Subtitle C requirements are regulated under Subtitle D of RCRA. EPA's role in regulating

[1] For example, FEMA's involvement in debris removal assistance most often occurs after the President declares the incident to involve a "major disaster," under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act, P.L. 93-288 as amended).

[2] Solid waste is defined broadly under the law as "any garbage, refuse ... and other discarded material" (42 U.S.C. §6903). Hazardous waste, a subset of solid waste, is defined as a solid waste that is either specifically listed in the regulations (40 C.F.R. §§261.31-261.33) or meets specific criteria that make it toxic, ignitable (i.e., burns readily), corrosive, or reactive (e.g., explosive) (40 C.F.R. §261.3).

solid waste under Subtitle D has largely been to promulgate federal landfill criteria as necessary to meet RCRA's prohibition on "open dumping."[3]

Under Subtitle D, states have primary authority to regulate waste and to implement and enforce federal standards related to RCRA's open dumping prohibition. Generally, the overwhelming majority of disaster debris involves wastes regulated under Subtitle D. While not specifically defined in federal law, the term *disaster debris* generally refers to waste materials created by or in the aftermath of a natural or man-made disaster, such as:

- construction and demolition (C&D) waste from destroyed buildings;
- vegetative debris, soils, and sediment;
- rotting materials, such as food or dead animals (e.g., pets or livestock);
- damaged vehicles, consumer appliances, and electronic devices; and
- hazardous chemicals or products, including those released from commercial, industrial, agricultural, or residential sites.

These materials are handled by municipal waste management agencies every day—but not as they would be after a disaster that destroys homes, businesses, and institutions, potentially turning entire structures, their contents, and surrounding vegetation into waste.

Decisions about how the waste will be managed are made largely by local or state agencies. If requested by a state or local government, EPA and/or the Corps may provide technical assistance or operational oversight of the state's debris removal activities (see discussion in the "Federal Agency Roles" section). Ultimately, however, it is generally the state's decision how its debris will be managed.[4] Typically, management will include some activity to reduce its volume. Disaster debris reduction primarily involves open burning/incineration, recycling, chipping and grinding, or composting. The remaining waste is generally disposed of in a landfill.

The fact that disaster debris may not be subject to federal hazardous waste management standards does not mean the waste is not hazardous or will pose no risk to human health or safety or the environment. State agencies responsible for managing disaster debris can face a number of challenges in managing disaster debris quickly and safely.

Keys Challenges with Managing Disaster Debris

After a disaster, states generally attempt to manage disaster debris in a way that limits short- and long-term threats to public health and safety or to the environment. Those threats arise if the debris is not managed quickly, but they can also arise through improper reduction and disposal practices. There are a number of factors that may make it difficult to both quickly *and* safely manage disaster debris. After discussing several key challenges, **Table 1** at the end of this section lists the common categories of disaster debris and the challenges often associated with properly managing each category.

Volume

One of the greatest challenges facing a community recovering from a disaster is the overwhelming volume of debris generated. In 2005, Hurricane Katrina created more than 118

[3] 42 U.S.C. §6945(a).

[4] In this report, the term *waste management* is used to refer to any activities undertaken to remove disaster debris. That may include waste collection, separation, reduction (e.g., burning, shredding or recycling), or landfill disposal.

million cubic yards (CY)[5] of debris over a 93,000-square-mile area.[6] Most disasters have not generated debris on the scale of Hurricane Katrina (although Hurricane Harvey may). Still, many have, in a single incident, generated debris in amounts that were several times greater than a region would otherwise manage in an entire year.

The logistics of managing tens of thousands or millions of cubic yards of vegetative or C&D waste may be a daunting task, even in a community that is prepared for such an event. When not prepared, a region must coordinate the physical removal of debris and likely designate a temporary staging area to sort and separate the waste before determining the appropriate management method. If debris removal contractors have not already been identified, it may be time-consuming to find a sufficient number of waste haulers able or qualified to do the work. States generally try to lessen the burden on existing landfill facilities and potentially reduce costs by reusing and recycling high volume wastes. However, those communities may lack the physical space to fully implement reduction strategies. Also, if residents have begun to return to a disaster area, there may be significant opposition to burning by community members who would be affected by the smoke.[7]

Difficulty Separating Contaminated Wastes

The fact that most disaster debris is not subject to the RCRA Subtitle C hazardous waste management requirements does not mean that the waste poses no hazard. Debris may be inextricably mixed with or contaminated by harmful or hazardous constituents.

Safe management options, as well as the cost and time it takes to implement those options, will depend on whether, or the degree to which, the contaminated debris can be separated from more non-hazardous waste (see **Figure 1**). For example, vegetative debris often represents a significant proportion of disaster debris. When clean, it can be chipped or ground up for re-use. It is estimated that the volume of vegetative debris can be reduced by as much as 75% using this method of waste reduction.[8] Because of the potentially huge volume of vegetative debris following a disaster, burning may be a preferred method of waste-handling (which is estimated to reduce the waste by as much as 90%). However, burning or chipping for reuse may not be safe options for reducing vegetative debris contaminated with sewage, oil, or other contaminants.

In the past, a sizable proportion of disaster debris was classified as C&D waste. Under federal law, C&D waste is classified neither as hazardous waste nor as municipal solid waste (MSW). Therefore, C&D landfills are not subject to federal design and operational criteria. For example, C&D landfills are not required under federal law to have protective liners that an MSW landfill would have. Instead, states determine what criteria a C&D *landfill* must meet, as well as what materials constitute C&D *waste*. In the event of an emergency, a state may change the regulatory definition of C&D waste to more broadly include large volumes of debris generated in the wake of the disaster. If that C&D waste is commingled with hazardous materials, it may be disposed of at landfills that are not designed to accept such wastes.

[5] By way of comparison, a cubic yard is approximately the size of a conventional dishwasher.

[6] Memorandum from Matt Jadacki, Deputy Inspector General, Office of Disaster Assistance Monitoring, Department of Homeland Security, to Carlos Castillo, Assistant Administrator for Disaster Assistance, FEMA, August 13, 2007.

[7] The impact to the community depends on the burning method used. For example, air curtain pit incinerators have fewer environmental impacts than uncontrolled open-air burning.

[8] FEMA, *Public Assistance: Debris Management Guide*, FEMA-325, July 2007, p.23, https://www.fema.gov/media-library/assets/documents/25649.

EPA suggests, and most states generally attempt, to remove hazardous materials such as asbestos, lead-based paint, and other contaminated materials from C&D waste before landfill disposal.[9] States may also attempt to lessen the burden on disposal facilities and potentially reduce costs by reusing and recycling C&D waste. However, if hazardous materials are mixed with C&D waste to the point that they cannot be segregated (see photo of mixed disaster debris in **Figure 1**), that waste may end up being disposed in a landfill that is not meant to safely receive such waste.

Figure 1. Mixed Disaster Debris

Source: FEMA.

Potential for Limited Participation by Returning Residents

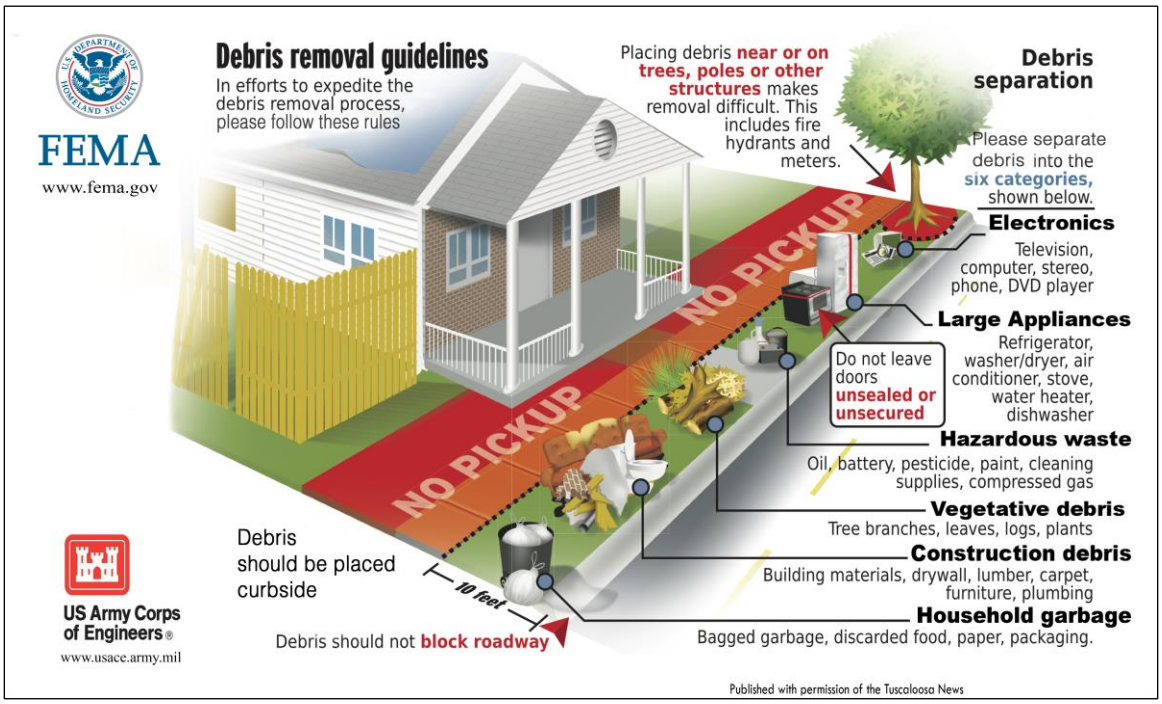
Generally, debris removal from private property does not qualify for federal funding because it is considered a responsibility of individual property owners that may be covered by private insurance. However, if home and business owners move disaster-generated debris to a public right-of-way, federal funding may be available for its removal. Therefore, the speed with which cleanup and rebuilding occurs may depend on how quickly residents are able to return to the area and assist in debris removal from private property.

As noted, safe and efficient management of disaster debris may be difficult if different types of debris cannot be separated. Returning residents are generally asked to separate debris as much as possible (see FEMA Debris Removal Guidelines illustrated in **Figure 2**).

[9] EPA, *Planning for Disaster Debris*, March 2008, p. 22-24, https://www.epa.gov/homeland-security-waste/guidance-about-planning-natural-disaster-debris.

Figure 2. FEMA Debris Removal Guidelines

Separation after residents return



Source: FEMA

The greater the devastation, the longer it may take before residents can return and, in turn, the greater the chance that some wastes will become contaminated and/or cannot be safely or easily separated. If residents do not or cannot separate their waste, waste management contractors or landfill operators may have to do so. Separating debris at a staging area or disposal facility is a time-consuming, costly, and potentially dangerous process. (See **Figure 3**, a photo of mixed debris left by residents in the right-of-way after Hurricane Sandy.)

Figure 3. Waste Removal by Returning Residents

Source: FEMA.

Table 1 lists the categories of disaster debris and factors that may affect the management options, including factors that may affect whether it can be safely or efficiently separated to reduce its volume by burning, recycling, or reuse or disposed in a landfill that may not meet federal standards of protection.

Table 1. Types of Disaster Debris and Factors Affecting Management

Debris Category	Description	Factors That Can Affect Management
Construction & demolition (C&D) waste	Components of damaged or destroyed buildings, roads, and other man-made structures, such as lumber, gypsum wallboard, glass, metal, roofing material, tile, carpeting, pipe, concrete, asphalt, utility poles, wires, furnishings, and fixtures. The definition of C&D debris may vary between states and waste management agencies within a state.	May contain materials that must be removed and handled in accordance with federal standards, such as asbestos-containing insulation or tiles or transformers containing polychlorinated biphenyls (PCBs). C&D waste may also be mixed with materials that affect whether the debris can be safely recycled, reused, or burned (e.g., lumber or wood products that are chemically treated or coated with lead-based paint or that contain termites).
Municipal solid waste (MSW)	Personal belongings and general household trash.	May be generated in volumes that overwhelm existing landfill capacity or contaminate otherwise non-hazardous wastes.
Vegetative debris	Downed trees, branches, shrubs, and logs.	May require immediate removal when they affect public access routes and critical infrastructure. Often generated in large amounts that can be substantially reduced by burning or chipping. Reduction and reuse options may be limited if contaminated.

Debris Category	Description	Factors That Can Affect Management
Soil, mud, and sand	Earthen material deposited on property and rights-of-way by floods, landslides, high winds, or storm surges.	May be reused as fill on residential or agricultural land. Options for reuse may be limited if contaminated with sewage, pesticides, fertilizers, or other chemicals that make it unsafe for reuse.
Putrescibles	Materials that will rot or decay quickly, such as fruits and vegetables, meats, dairy products, and other produce from grocery stores, restaurants, schools, hospitals, and residences. It can also include animal carcasses, such as pets or farm animals.	May be composted or rendered to reduce volume, but must be collected and managed quickly to avoid attracting disease vectors, such as rodents and flies. If not managed quickly, putrescibles may contaminate otherwise benign waste streams.
White goods	Destroyed or discarded household appliances such as refrigerators, freezers, air conditioners, washers, dryers, ovens, ranges, heat pumps, water heaters, and dishwashers.	Can generally be recycled but may contain substances that must be removed according to federal law (e.g., PCB capacitors, ozone-depleting refrigerants, or compressor oils). Refrigerators may be contaminated with putrescibles that must be removed. Proper management may be challenging when white goods are generated in tremendous numbers.
Vehicles and vessels	Cars, trucks, and boats that are damaged, destroyed, or abandoned as a result of the incident.	Can generally be recycled if title and ownership issues are addressed and hazardous fluids or materials (such as motor oil, gas and gas tanks, lead-acid batteries, tires, airbags, and mercury switches) are drained or removed.
Household hazardous waste(HHW)	Household products that contain corrosive, toxic, ignitable, or reactive ingredients, such as motor oil, automobile batteries, paints and solvents, household cleaners and drain openers, swimming pool chemicals, pesticides, and compressed gas tanks (such as propane and oxygen).	The presence of HHW can increase the overall cost of waste management if it is not collected and managed separately. States generally prefer to do so, but it can become mixed with and contaminate relatively benign household wastes.
Electronic Waste (e-waste)	Computers, monitors, televisions, printers, stereos, DVD players, and telephones.	States generally separate electronic waste for recycling because it often contains heavy metals such as lead, chromium, cadmium, mercury, and zinc and brominated flame retardants.
Infectious waste	Waste capable of causing infections in humans, such as contaminated animal waste, human blood and blood products, medical and pathological waste, and discarded sharps (needles, scalpels, or broken medical instruments).	It may become mixed with and/or contaminate otherwise benign waste and pose a risk to waste handlers unaware of its presence.
Commercial or industrial hazardous waste	May include petroleum or other hazardous substances that pose significant risk to human health, safety, or the environment released from above ground or underground storage facilities or containers (tanks or drums) or from commercial or industrial facilities (e.g., gas stations or dry cleaners).	May become mixed with and/or contaminate otherwise benign waste. May contaminate surface or groundwater if not quickly contained, cleaned up, and properly managed.

Source: CRS, using information in FEMA's, *Public Assistance Program and Policy Guide*, Appendix D: Debris Management Plan Job Aid, April 2017, https://www.fema.gov/media-library/assets/documents/111781; and EPA guidance *Planning for Disaster Debris*, March 2008, https://www.epa.gov/homeland-security-waste/guidance-about-planning-natural-disaster-debris.

Agency Roles in Supporting Debris Removal

Federal Agency Roles

Federal debris removal assistance is most commonly provided in accordance with provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (P.L. 93-288, as amended, the Stafford Act).[10] The Stafford Act and its implementing regulations set forth a process for a governor to request and the President to declare an "emergency" or "major disaster"[11] when an event beyond the combined response capabilities of the state and affected local governments occurs.[12] The presidential declaration may also authorize all federal agencies, as necessary, to provide assistance to respond to a disaster, including support for debris removal activities.[13]

Federal agencies may provide technical or other forms of assistance to communities affected by a disaster under authorities other than those provided in the Stafford Act. The Department of Homeland Security's National Response Framework (NRF)[14] presents the guidelines under which all authorized federal agencies may respond to any disaster (i.e., not just those involving a presidential declaration). Among other functions, the NRF summarizes the roles and responsibilities of federal agencies to respond to an incident, under their existing authorities, and establishes coordinated processes for agencies to take action within their respective areas of expertise.

The NRF identifies and groups the capabilities of federal departments and agencies into 14 Emergency Support Functions (ESFs).[15] The ESFs provide the structure for coordinating federal interagency support for the federal response to an incident. The ESFs are mechanisms for providing the planning, support, resources, program implementation, and emergency services most likely to be needed. Two ESFs include debris removal missions:

1. ESF #3, Public Works and Engineering. This includes infrastructure protection and emergency repair, infrastructure restoration, engineering services, construction management, and critical infrastructure liaison. The Corps is the lead agency to complete this ESF.[16]
2. ESF #10, Oil and Hazardous Materials Response. This includes oil and hazardous materials response and environmental safety and short- and long-term cleanup. EPA is the lead agency to complete this ESF; the Corps provides support.[17]

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[10] 42 U.S.C. §§5121-5206.

[11] Assistance for debris removal is most commonly authorized after a major disaster declaration rather than an emergency declaration.

[12] For more information, see CRS Report R41981, *Congressional Primer on Responding to Major Disasters and Emergencies*, by Jared T. Brown.

[13] Section 407; 42 U.S.C. §5173. The Stafford Act and implementing regulations use the term *debris removal* in a broad sense to encompass the entire process of removing, handling, recycling, and disposing of debris (44 C.F.R. §206.224).

[14] See Department of Homeland Security, *National Response Framework*, 3rd. ed., June 2016, https://www.fema.gov/media-library/assets/documents/117791.

[15] ESF's are listed on FEMA's "Emergency Support Function Annexes" webpage at https://www.fema.gov/media-library/assets/documents/25512.

[16] See FEMA, *National Response Framework*, "Emergency Support Function #3—Public Works and Engineering Annex," https://www.fema.gov/pdf/emergency/nrf/nrf-esf-03.pdf.

[17] See FEMA, *National Response Framework*, "Emergency Support Function #10—Oil and Hazardous Materials (continued...)

The following sections provide an overview of the role that FEMA, the Corps, and EPA may play in providing support to a local or state government's disaster debris removal activities.[18]

FEMA

FEMA serves two primary roles in debris removal operations. First, it provides funding to eligible applicants for eligible debris removal activities. Second, it may approve direct federal assistance to an applicant (state or local government) that does not have the capability to respond to a presidentially declared disaster.[19]

Federal funding for disaster-related debris removal is coordinated and provided by FEMA primarily through its Public Assistance (PA) Grant Program.[20] Under that program, FEMA provides grant assistance to reimburse state, tribal, and local governments and certain types of private nonprofit organizations for their response and recovery efforts. To be eligible for PA funding, the debris removal work must be:

- required as a result of the disaster event,
- located within a designated disaster area, and
- the legal responsibility of an eligible applicant.[21]

Activities eligible for assistance must be in the public interest, defined as activities that will:

- eliminate an immediate threat to lives, public health, and safety;
- eliminate immediate threats of significant damage to improved public or private property;
- ensure the economic recovery of the affected community to the benefit of the community at large; or
- mitigate the risk to life and property by removing substantially damaged structures and associated appurtenances as needed to convert property acquired through a FEMA hazard mitigation program to uses compatible with open space, recreation, or wetlands management practices.[22]

If a local or state government determines that it lacks the capability to perform or contract for eligible debris removal activities, the applicant may ask for assistance from the federal government to complete the work.[23] If FEMA approves the request, it may call upon another federal agency to complete the activity. Support provided by outside agencies for debris removal may be done in accordance with a "mission assignment" from FEMA. The assignment functions as a work order issued by FEMA to another federal agency to assist with disaster response.[24] The

(...continued)

Response Annex," https://www.fema.gov/pdf/emergency/nrf/nrf-esf-10.pdf.

[18] As noted, each agency may provide debris removal assistance in accordance with various laws, regulations, or executive orders, the discussion of which is beyond the scope of this report.

[19] 42 U.S.C. §5172.

[20] For information, see CRS Report R43990, *FEMA's Public Assistance Grant Program: Background and Considerations for Congress*, by Jared T. Brown and Daniel J. Richardson.

[21] 44 C.F.R. §206.223(a).

[22] 44 C.F.R. §206.224(a).

[23] See procedures in 44 C.F.R. §206.203(b).

[24] Requirements for "direct federal assistance" are specified at 44 C.F.R. §206.208.

Corps and EPA are the agencies most commonly mission-assigned responsibilities involving disaster debris removal.

The Corps

The Corps generally provides debris removal assistance after receiving a mission assignment from FEMA. As delineated under ESF#3, the Corps may coordinate federal public works and engineering-related support, as well as provide technical assistance, engineering expertise, and construction management to prevent, prepare for, respond to, and/or recover from domestic incidents. Depending on issues specific to the disaster, such as the type and scope of damage, FEMA may mission assign to the Corps the responsibility to remove disaster debris from rights-of-way (e.g., roads and bridges), private property, or drainage structures or undertake emergency demolition activities.[25]

The Corps may also provide technical assistance by helping local agencies develop debris removal contracts. It may also provide personnel for debris removal teams, obtain contractors to execute the mission, coordinate landfill and burn sites and the final disposal of debris, and train and coordinate FEMA and local government debris monitors (entities tasked with ensuring that debris is managed in a way that complies with the Stafford Act, federal and state waste management requirements, or any other applicable law). If the debris is contaminated, the Corps may coordinate with EPA to ensure that it is managed properly.

Apart from its potential to provide disaster assistance via a mission assignment from FEMA, the Corps is responsible for maintaining navigable channels and waterways. With respect to debris removal, the Corps is authorized to:

- develop projects to collect and remove drift and debris from federally maintained commercial harbors and land and water immediately adjacent to those areas,[26]
- remove sunken vessels or other obstructions from navigable waterways under emergency conditions,[27] and
- assist with debris removal from flood control works as necessary to protect human life and improved property or to help communities recover from the effects of disasters.[28]

EPA

As delineated in ESF #10, Oil and Hazardous Materials Response, EPA may respond to incidents involving oil or hazardous materials. More specifically, EPA may respond to actual or potential discharges of oil, hazardous substances, pollutants, and contaminants that may present an imminent and substantial danger to public health or welfare. Such a response would be carried out

[25] See U.S. Army Corps of Engineers, "Debris Management," http://www.usace.army.mil/Media/Fact-Sheets/Fact-Sheet-Article-View/Article/475474/debris-management/.

[26] 33 U.S.C. §426m.

[27] See Sections 15, 19, and 20 of the Rivers and Harbor Act of 1899, as amended (33 U.S.C. §§409, 414, and 415). In accordance with its interpretation of these sections, Corps policy to use its emergency authorities to remove a sunken vessel only if the owner/operator cannot be identified or cannot remove it in a timely and safe manner.

[28] 33 U.S.C. §701n.

in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan, more commonly referred to as the National Contingency Plan.[29]

Also, EPA may be mission assigned activities to ensure that hazardous wastes or materials are managed properly.[30] If requested by a local or state agency, EPA may assist with locating proper sites for debris separation and disposal, managing contaminated debris and regulated wastes such as refrigerants or asbestos-containing materials. EPA may help monitor debris management methods (e.g., landfilling or burning) to ensure they are not implemented in a way that poses a risk to human health or the environment. EPA may also work with other federal agencies (particularly the Corps and the Coast Guard) to facilitate waste collection, segregation, and disposal.

State and Local Agency Roles

States help coordinate local government requests for federal assistance and work with FEMA to define the mission. The Corps coordinates with state representatives regarding operational issues. Alternatively, state or local governments may accept the debris removal mission themselves and apply to FEMA for reimbursement.

State environmental protection agencies or departments of environmental quality are the environmental regulatory arms of state governments. A state environmental agency may issue its own declaration of emergency after a disaster. A state declaration would specify how debris removal operations should be carried out for the particular disaster. For example, after Hurricane Katrina, the Louisiana Department of Environmental Quality expanded the definition of C&D waste to essentially allow the entire contents of flooded homes in New Orleans to be disposed of in C&D landfills. As noted, each state is authorized to implement its own waste management program that includes making decisions about siting and regulating debris handling and disposal sites.

Local agencies are generally responsible for providing rights-of-entry permits to allow the Corps or its contractors to enter private property for debris removal activities (consistent with Corps authorities), establishing criteria and procedures for classifying different types of debris, selecting disposal methods, approving disposal operations, condemning properties, providing demolition plans, and designating the appropriate type of landfill.

Federal Role in Debris Management Planning

Without proper pre-disaster planning, managing potentially huge volumes of mixed debris can be complicated for an already overwhelmed community. According to FEMA, communities with a proper plan in place are better prepared to restore public services and ensure the public health and safety in the aftermath of a disaster and are better positioned to receive the full level of assistance available to them from FEMA.[31]

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[29] For more information, see CRS Report R43251, *Oil and Chemical Spills: Federal Emergency Response Framework*, by David M. Bearden and Jonathan L. Ramseur.

[30] See News Release from EPA Region 7, "EPA Teams Collected Nearly 3,000 Tons of Residential Debris and Hazardous Materials from December Flooding in St. Louis," https://www.epa.gov/newsreleases/epa-teams-collected-nearly-3000-tons-residential-debris-and-hazardous-materials.

[31] See FEMA, *Public Assistance: Debris Management Guide*, FEMA-325, July 2007, p. i, https://www.fema.gov/media-library/assets/documents/25649.

FEMA encourages state, territorial, tribal, and local governments to establish a Debris Management Plan (DMP), written procedures and guidance that the governments will use to manage debris in an expeditious, efficient, and environmentally sound manner.[32] FEMA provides technical assistance to communities to develop DMPs and will approve plans that meet its required criteria.[33] Among other elements, a FEMA-approved DMP must identify the types of incidents likely to occur in the region and the types of debris that would likely be handled after those incidents. It must also identify the existing state or federal laws that would apply to the handling and disposal of the types of debris likely handled.

On January 29, 2013, President Obama signed into law the Sandy Recovery Improvement Act of 2013 (P.L. 113-2). The law amends the Stafford Act to add Section 428, which authorizes "alternative procedures" for FEMA's Public Assistance program through a pilot program.[34] More specifically, the law directed FEMA to adopt alternative procedures that would further the goals of:

- reducing costs to the federal government of providing assistance,
- increasing flexibility in administering assistance,
- expediting the process of providing assistance, and
- providing financial incentives and disincentives for the timely and cost-effective completion of projects.[35]

Section 428 allows FEMA to take a number of actions to meet those goals with respect to debris removal activities.[36] For example, FEMA is authorized to fund debris management planning and to provide incentives to state, tribal, or local governments to prepare a DMP for FEMA approval. The incentive for having a FEMA-approved DMP is a one-time, 2 percent increase in funding above the approved federal cost share for debris removal activities. Currently, FEMA is implementing debris-related alternative procedures in accordance with pilot programs authorized through June 27, 2018.[37]

For Additional Information

The following information may be useful to understand requirements and federal agency roles in various aspects of disaster debris removal:

- FEMA, April 2017 *Public Assistance Program and Policy Guide*, https://www.fema.gov/media-library/assets/documents/111781. See particularly the discussion of issues and requirements related to debris removal on pages 43-61 and "Appendix D: Debris Management Plan Job Aid."

[32] See FEMA, *Public Assistance Program and Policy Guide*, FP-1-4-009-2, April 2017, pp. 47-48, https://www.fema.gov/media-library/assets/documents/111781.

[33] Ibid. Details about required elements of a FEMA-approved DMP are provided in "Appendix D: Debris Management Plan Job Aid."

[34] 42 U.S.C. §5189f.

[35] See "Goals of the procedures" codified at 42 U.S.C. §5189f(c).

[36] Criteria required to be included in alternative procedures for debris removal assistance are codified at 42 U.S.C. §5189f (e)(2). Also see FEMA, *Public Assistance Program Alternative Procedures Pilot Program Guide for Debris Removal*, June 28, 2017, https://www.fema.gov/media-library/assets/documents/115868.

[37] FEMA, *Public Assistance Program and Policy Guide*, p. 46.

- FEMA, *Public Assistance: Debris Management Guide*, FEMA-325, July 2007, https://www.fema.gov/media-library/assets/documents/25649.
- FEMA, "Debris Removal and Demolition Fact Sheet," https://www.fema.gov/media-library/assets/documents/90745.
- FEMA, "Alternative Procedures", https://www.fema.gov/alternative-procedures.
- Army Corps of Engineers, "Debris Management," http://www.usace.army.mil/Missions/Emergency-Operations/National-Response-Framework/Debris-Management/.
- FEMA, "FEMA and U.S. Army Corps Debris Mission," Video discussing the Corps' mission assignment to manage debris removal from Hurricane Sandy. Posted Nov. 22, 2012, https://www.fema.gov/media-library/assets/videos/81313.
- EPA, *Planning for Disaster Debris*, March 2008, https://www.epa.gov/homeland-security-waste/guidance-about-planning-natural-disaster-debris.
- CRS Report R43990, *FEMA's Public Assistance Grant Program: Background and Considerations for Congress*, by Jared T. Brown and Daniel J. Richardson.
- CRS Report R41981, *Congressional Primer on Responding to Major Disasters and Emergencies*, by Jared T. Brown.

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