Debris Management Pocket Guide for Public Assistance

State Emergency Response Team
“Failure is not an option”
# Table of Contents

- Purpose ................................................................. 3
- Eligibility ............................................................... 4
- Procurement ............................................................ 10
- Debris Forecasting and Estimating .................................. 12
- Documentation .......................................................... 15
- Debris Management Sites ............................................. 17
- Environmental and Historic (EHP) ..................................... 20
- Monitoring and Removal ............................................... 22
- Debris Types ............................................................ 25
- Program Updates ......................................................... 46
Purpose

This guide should be viewed as a tool to assist in providing overall direction and policy guidance to local officials after a declared debris-generating disaster or emergency event.

Why is Debris Management so important?

- It eliminates or reduces immediate threats to life, health, and safety to the public
- It eliminates or reduces immediate threats of significant damage to improved public or private property
- It supports or encourages economic recovery within the affected community

Debris and Public Assistance

The FEMA Public Assistance program provides assistance for debris removal, the implementation of emergency protective measures, and the permanent restoration of eligible facilities where authorized by the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended. This means that whenever a disaster or emergency occurs, and it is declared by the president, FEMA may act to support the affected jurisdiction with financial and/or material aid.

This support is often critical to the affected areas as it allows them to deploy, or request, resources as needed and disperse them to those locations with high priority issues. Under certain conditions FEMA may also provide Direct Assistance, meaning that they may provide either actual material aid without cost to the Applicant or they may fund at 100% any work done by the Applicant for a defined amount of time. Direct Assistance is generally difficult to acquire however and even when achieved it is very time limited.
Debris Eligibility Criteria: Authority

The Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, authorizes the FEMA Public Assistance Program to award Federal funding to State and local governments, Federally recognized tribes, and eligible private non-profit organizations in order to assist them in their response and recovery activities.

Debris removal is generally a major portion of the cost following a disaster and therefore requires careful consideration as to the rules and regulations governing debris removal and disposal to ensure that all eligible costs are reimbursed through the FEMA Public Assistance (PA) program. The chart below outlines the hierarchy by which these eligibility criteria are established and distributed through the Federal government and FEMA.
Debris Eligibility Criteria: Applicants

The funding for the Public Assistance (PA) program follows an identical path to the authority which authorizes it. Beginning at the top with the Federal Government and progressing through the State (Grantee) down to the local, tribal or private non-profit (PNP) entities (Applicants), each step in the process is accountable to the step(s) preceding it. The responsibility of requesting the assistance begins at the lowest level however, meaning the Request for Public Assistance (RPA) must flow upward from the Applicant through the various levels of government once a disaster declaration is made by the President.

Four types of Applicants are eligible to apply for Public Assistance grant funding:

<table>
<thead>
<tr>
<th>State Government Agencies (Grantee)</th>
<th>Federally Recognized Indian Tribes (as Grantee or Applicant)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Examples:</strong></td>
<td><strong>Examples:</strong></td>
</tr>
<tr>
<td>• Florida Department of Transportation</td>
<td>• Seminole Tribe of Florida</td>
</tr>
<tr>
<td>• Florida Department of Environmental Protection</td>
<td>• Miccosukee Tribe of Indians in Florida</td>
</tr>
<tr>
<td>• Florida Department of Education</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Private Non-Profit (PNP) Organizations (Applicant)</th>
<th>Local Governments (Applicant)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Examples:</strong></td>
<td><strong>Examples:</strong></td>
</tr>
<tr>
<td>• Educational</td>
<td>• Towns, Cities and Counties</td>
</tr>
<tr>
<td>• Medical</td>
<td>• Municipalities and Townships</td>
</tr>
<tr>
<td>• Utility</td>
<td>• Local Public Authorities</td>
</tr>
</tbody>
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*Please reference Chapter 2, Section II of the PAPPG for more detail*
Debris Eligibility Criteria: Facilities and Work

A key component of the eligibility criteria is whether or not the work being requested falls within FEMA’s approved description for debris removal. There are a total of 7 classifications of work identified in the PA program but only Category A (Debris Removal) applies to this pocket guide.

Additionally, the facility in question should fit at least one of the following descriptions:

**Eligible Debris Removal Work**
- The debris was generated by a major disaster event
- The debris is located within the designated disaster area
- The debris removal is the legal responsibility of an eligible applicant
- Publicly or privately owned building, works, system, or equipment (built or manufactured)
- Improved and maintained natural feature

**Ineligible Debris Removal Work**
- The debris is on unimproved property or undeveloped land
- The debris is on a facility that is not eligible for PA funding
- The debris is on federal lands or facilities that are the authority of another Federal agency or Department, such as Federal aid roads, USACE navigable waterways, or NRCS canals

Eligible debris work must also be in the public interest, which is defined by FEMA in the following way:

- 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 additions as needed to convert property acquired through a FEMA hazard mitigation program to uses compatible with open space, recreation, or wetlands management practices
Debris Eligibility Criteria: Reasonable Cost

‘Reasonable Cost’ is defined as simply being a cost which, in its nature and amount, does not exceed that which would be incurred by a prudent person under the circumstance prevailing at the time the decision was made to incur the cost. There are multiple ways to assess cost reasonableness for a product or service:

- Evaluating historical costs for similar work
- Analyzing costs for similar work in the region
- Reviewing published unit cost data for the work
- Comparing costs with the FEMA Schedule of Equipment Rates and Cost Codes

Along with the assessment of cost reasonableness there is also the nature of the work to consider when deciding what types of activities to perform. In general, the three following areas are considered to be within the nature of nearly all disaster recovery work activities: the Applicant’s force account labor, equipment, and materials; contracted services; and mutual aid agreements.

Summary of Debris Eligibility Criteria

Costs (Final Step)
Costs should be Reasonable and Necessary to accomplish the work, compliant with all laws and regulations and reduced by all applicable credits.

Work (Third Step)
Debris Removal, Emergency Protective Measures and Permanent Repairs that are a direct result of the disaster, within the declared area, and the Applicant’s legal responsibility.

Facility (Second Step)
Public or privately owned building, works, system, or equipment; qualifying maintained and improved natural features for which the Applicant is legally responsible.

Applicant (First Step)
State, tribal and local governments (and their agencies); certain PNP’s (critical and non-critical).
Debris Eligibility Criteria: Environmental and Historical Special Considerations

Below is a list of the environmental and historic preservation special considerations that relate to debris operations:

<table>
<thead>
<tr>
<th>Environmental Considerations</th>
<th>Historical Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Environmental Policy Act</td>
<td>Coastal Zone Management Act</td>
</tr>
<tr>
<td>Clean Water Act</td>
<td>Fish and Wildlife Coordination Act</td>
</tr>
<tr>
<td>Clean Air Act</td>
<td>Wild and Scenic Rivers Act</td>
</tr>
<tr>
<td>Coastal Barrier Resources Act</td>
<td>Executive Orders:</td>
</tr>
<tr>
<td>Resource Conservation and Recovery Act</td>
<td>• EO 11988</td>
</tr>
<tr>
<td>National Historic Preservation Act</td>
<td>• EO 11990</td>
</tr>
<tr>
<td></td>
<td>• EO 12898</td>
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</tbody>
</table>

Each of these special considerations plays a role in protecting a community before and after a disaster occurs. Although specific statutory exclusions and/or agency waivers can allow the applicant to bypass some of these items, FEMA still requires that each be addressed appropriately and documented adequately. This becomes especially important during the Debris Management Site (DMS) selection process, and later on during its usage and clean-up stages as well.

Federal, State and local regulations, laws and ordinances need to be addressed and followed for all environmental and historic preservation issues!

In addition to the above there is also the Duplication of Benefits issue to consider. Section 312 of the Stafford Act states that no Applicant may receive Public Assistance from FEMA for any loss in which financial assistance was received from another source. This includes assistance from other Federal agencies, State agencies and insurance settlements.
Debris Eligibility Criteria: Private Property

Private Property Debris Removal (PPDR) is in most cases not eligible for reimbursement because the debris does not typically present an immediate threat to life, health or safety to the general public. In addition, PPDR is the legal responsibility of individual private property owners and their insurance providers and therefore not generally eligible for reimbursement from the Public Assistance program.

When situations occur where it is in the best interest of the community to remove debris from private property then the following steps must be followed in order for the work to be eligible. The Applicant must:

• Submit a written request to the Federal Coordinating Officer via the State seeking approval authorizing private property debris removal from defined areas prior to performing any actual work
• Obtain a Right-of-Entry and an Indemnification form signed by the property owner before entering the property
  • If the debris represents an immediate threat to health and safety, or to improved property, then these documents may be waived by the FCO in order to perform the work if the owner can’t be found
• Take photos to show the condition of the property prior to the beginning of any work
• Obtain a PPDR assessment, which is a property specific assessment that establishes the scope of eligible work needed to address issues
• Maintain documentation of compliance with the Environmental and Historic Review process

Additional information regarding PPDR can be found in the PAPPG (Debris Removal from Private Property)
Procurement

Procurement is a key element in the debris removal and disposal process and as such is subject to a large number of regulations. FEMA has sought to provide general guidance on the methods of acceptable procurement and also the types of contracts it finds acceptable.

Methods of Procurement:

- **Procurement by Micro-Purchases** — The acquisition of supplies or services, the aggregate dollar amount of which does not exceed the micro-purchase threshold (2 C.F.R Part 200.67 Micro-Purchase).
- **Procurement by Small Purchase procedures** — Small purchase procedures are those relatively simple informal procurement methods for securing services, supplies, or other property that does not cost more than the Simplified Acquisition Threshold. If small purchase procedures are used, price or rate quotations must be obtained from an adequate number of qualified sources. (2 C.F.R. Part 200.320(b)) for detailed information.
- **Procurement by Sealed Bids** — A formal method where bids are publicly advertised and solicited, and the contract is awarded to the responsible bidder whose proposal is the lowest in price. (2C.F.R. Part 200.320 (d)) for detailed information.
- **Competitive Proposals** — Similar to sealed bid procurement in which contracts are awarded on the basis of contractor qualifications instead of on price. (2C.F.R. Part 200.320 subsection e) for detailed information.
- **Non-competitive Proposals** — A method whereby a proposal is received from only one source. These should only be used when the award of a contract is not feasible under small purchase procedures, sealed bids, or competitive proposals, and one of the following circumstances applies:
  - Item is available only from one source.
  - There is an emergency requirement that does not permit a delay.
  - Solicitation from a number of sources has been attempted, and competition is inadequate. (2 C.F.R. Part 200.320 (f)) for detailed information.

Additional information regarding PPDR can be found in **2 Code of Federal Regulations (Electronic Version) Title 2**.
Procurement (cont’d)

**Types of Contracts:**
- **Lump Sum** – Used for work within a prescribed boundary with a clearly defined scope and total price.
- **Unit Price** – Used for work done on an itemized basis with cost determined on a per unit basis.
- **Cost-Plus-Fixed-Fee** – Lump sum or unit price contracts with a fixed contractor fee added into price.
- **Time-and-Materials** – Contract where the contractor bills the Applicant for labor, equipment, materials, and overhead. This type of contract is generally used when the Lump Sum and Unit Price contracts are not as cost effective and/or appropriate for the amount and type of eligible work to be performed. If a time-and-materials contract is awarded the Applicant must:
  - Monitor and document contractor expenses.
  - Have a cost ceiling or “not to exceed” provision in the contract.
  - Debris monitoring contracts are generally time-and-materials due to the type of work being performed.

**Other Considerations:**
- ‘Piggyback’ Contracts - Though this may be legal under State law, FEMA does not favor these types of contracts and their use may jeopardize FEMA funding.
- Prohibited Contracts - The cost plus percentage of cost contracts are considered prohibitive by FEMA and should not be used.
- Payment Provisions - Contract payment provisions should address obligations between the contracting parties and not be contingent upon FEMA funding.
  - Contracts exceeding $10,000.00 must contain provisions for “Termination for Cause” and “Termination for Convenience”.
  - Contracts exceeding $100,000.00 must have the following minimum bonding requirements: *bid bond guarantee equal to 5% of the bid price*, *performance bond for 100% of the contract price*, and *payment bond for 100% of the contract price*.

Sub-recipients must use their own documented procurement policies as long as it conforms with 2CFR §200.318 through §200.326.
Debris Forecasting and Estimating

Debris Forecasting and Estimating are two very important elements in an Applicant’s pre-disaster preparedness effort. By attempting to establish ahead of time, or immediately following, the general amount and composition of disaster generated debris the Applicant can better prepare themselves for a response.

Forecasting: Buildings and Vegetation Multipliers

Following the establishment of parameters, specific debris volumes can be quantified by using historical information or forecasting models. Previous contracts for debris removal, recycling activities, volume reduction processing, and landfill disposal records should be reviewed thoroughly to determine the quantity of disaster debris that was generated for a particular disaster event. The United States Army Corps of Engineers (USACE) has developed a modeling methodology designed to estimate potential amounts of hurricane generated debris based on data from hurricanes that have occurred during previous years.

Several basic techniques have been established to forecast destroyed building debris quantities. These techniques can be used to forecast debris quantities prior to an event or, estimate quantities after a disaster.

The following page contains a few examples of commonly used formulae which provide general estimates of debris for various building types.
Debris Forecasting and Estimating (cont’d)

Residential Buildings: Demolished Single Family Home and Associated Debris

\[ L(\text{ft}) \times W(\text{ft}) \times S(\text{Height in Stories}) \times 0.2 \times \text{VCM(Vegetative Cover Multiplier)} = \text{CY} \]

The vegetative cover multiplier is defined as being one of four possible variables; None (1.0 multiplier), Light (1.1 multiplier), Medium (1.3 multiplier), and Heavy (1.5 multiplier).

Outbuildings: All Other Building Volumes

\[ \frac{L(\text{ft}) \times W(\text{ft}) \times H(\text{ft}) \times 0.33}{27} = \text{CY} \]

By utilizing estimating formulae like those above to assist in the forecasting and estimation of debris quantities the Applicant can then have a better idea of approximately how large of a response will be needed. This also allows for a better understanding of whether or not additional resources will be needed, be they in the form of contracted companies or as assistance from other municipalities through mutual aid agreements.
Debris Forecasting and Estimating (cont’d)

Estimating: Design Disaster Event
Design events are used for planning purposes in order to help calculate and forecast the amount of debris that will be generated, and can be customized for different sizes or types of disasters as needed. Historical data is most often used to determine the design event conditions for hurricanes, tornadoes, wildfires, floods, terrorism and any other disaster that may affect Florida. The design disaster event should be within reason and take into account historical events and any additional altered criteria that may affect the disaster scenario, such as mitigation efforts.

Consideration should be made for land use, terrain and accessibility of areas located within the Applicant’s geographic boundaries to determine the types of debris that will be generated and to establish effective debris collection programs.

Understanding how the local land is being used helps provide information about the types of debris that may be generated and also offers insight into the types of removal methods that would be necessary to safely manage the debris. An example being that rural areas may have more vegetative debris as opposed to urban residential areas, which may have more construction and demolition debris.

Other forecasting and estimating methods include:
• Remote Sensing (aerial photographs, satellite data, etc...)
• Geographic Information System map
Documentation Requirements

Documentation is an essential part of the cost reimbursement process as it provides the justification needed by FEMA so that funding can be issued. The information required for documentation describes the “who, what, when, where, why, and how much,” for each item of disaster recovery work. To help ensure this is done there should be a financial and record keeping system in place that can be used to track these elements. Below are some examples of documentation needed by FEMA.

Examples of Documentation Required by FEMA:
- G.I.S. Maps or Other Mapping System
- Photographs
- All Permits/Authorizations (Preauthorized DMS Notifications, Burn Permits, Final Disposal Permits, etc...)
- All Request for Proposal and Contract Documents
- Load Tickets and Load Ticket Summaries for Debris Hauled
- Time Sheets
- Equipment Logs with Proper FEMA Coding and Descriptions
- Truck Certifications
- Labor and Benefit Rates
- Personnel Pay Policy
- Invoices
- All Field Documentation That May Be Required for Eligibility Considerations

Important: Applicant must retain documentation for up to 5 years after the close of the grant (Ch. 119 and 257 FL Statutes).
Documentation Requirements (cont’d)

Due to the amount of documentation that may be needed when submitting a request for reimbursement to FEMA it is important to have a system in place which can easily and efficiently record and retain information.

Paper records and filing systems are still used in many areas of the country, having been suitable in past events. However, as technology has increased so too have the demands that have been placed upon applicants to provide both the required amount of documentation as well as additional documentation where requested. For this reason many Applicants have turned toward automated and computerized record management systems.

Integrating a dynamic system of document creation and retention has always been and will continue to be the bottom line of any reimbursement submission. Without the ability to support a claim for an eligible cost the Applicant may ultimately miss out on a large portion of its legitimate cost reimbursement requests due to de-obligations from a lack of proper documentation.

Using new or existing technology to assist or amplify current capabilities is an integral part in any situation where speed and accuracy are important. Many private companies already offer automated record keeping systems as part of their basic services due to how important documentation is to the reimbursement process.
Debris Management Sites

Debris Management Sites are used as a location for applicants to temporarily store, reduce, segregate, and/or process debris before it is hauled to its final disposition. Locations for DMSs should be identified during the planning process, and a listing of the locations should be included in the debris management plan.

Site selection should be based on the following criteria:

- **Ownership:** Public lands should be considered first in order to avoid costly land leases, with proximity to existing disposal or recycling facilities being ideal locations.
- **Size:** The site should be large enough to safely accommodate the processing of various debris materials, the storing of heavy equipment, and the maneuvering of trucks and large processing equipment.
- **Location:** The location needs to be away from major transportation corridors, local business operations, residential neighborhoods or schools, and have good ingress/egress to accommodate heavy traffic.
- **Environmental and Historic Preservation Concerns:** All sites must be restored to their original condition upon site closeout, therefore it is critical that sensitive areas (wetlands, critical habitats, freshwater well fields, etc...) not be used for the DMS.

Baseline Data:

Once a site is selected the applicant must collect baseline data prior to it being used. This includes:

- Videotaping and/or photographing the environment before and during establishment of the site
- Documenting existing physical features such as fences, irrigation systems, and landscaping that will help evaluate possible damage claims made later
- Investigating historic significance by researching past use and ownership of the property to document any issues regarding the existence of historic structures or archeological sites
- Collecting soil and groundwater samples prior to use of the site in order to help restore the location to its original state later
Debris Management Sites (cont’d)

During the operational phase of the Debris Management Site additional data should be continuously collected and monitored with regard to efficiency and effectiveness. The collected data may be used to adjust the operation as necessary in conjunction with the following key operational elements.

- **Sketch Site Operation Layout**: Operations may grow larger or smaller depending on the phases of disaster recovery therefore it is important to track reduction, hazardous waste collection, fuel, and equipment storage in order to sample soil and water for contaminants. Periodically sketching changes in activity or areas of concern can help during environmental testing and sampling
- **Documentation of Quality Assurance Issues**: Documenting operations on site that will have a bearing on site closeout, such as petroleum spills at fueling sites, hydraulic fluid spills at equipment breakdowns, installation of water wells for stock pile cooling or dust control, discovery of HHW, and commercial, agricultural, or industrial hazardous and toxic waste storage and disposal
- **Restoration of Site**: Final restoration of the landscape must be acceptable to the landowner, but within reasonable expectations. Therefore, plan the landscape restoration as early as possible, preferably incorporating provisions within the lease

It is important to cross check any potential site against National, State and local databases to ensure that there are no issues when complying with the National Historic Preservation Act. Some sites which may have been compliant previously may have, over time, become historic resources and therefore no longer eligible for use as a Debris Management Site under FEMA policy.
Debris Management Sites (cont’d)

In addition Multiple permits may be required specifically for the operation of a temporary Debris Management Site as noted below:

- Waste Processing and Recycling Operations Permit
- Temporary Land-Use Permits
- Land-Use Variances
- Coastal Commission Land-Use Permits
- Fire Department Permits

- Water Quality Permits
- Air Quality Permits
- Traffic Circulation Strategies
- HHW Permits

An important element of the Establishment and Operations Planning phase is the creation of Operational Boundaries. Common uses for these boundaries include, but are not limited to, the following areas:

- Reduction
- Drop-off
- Recycling
- HHW
- Tipping
- Monitoring Tower
- Loading
- Equipment, Fuel, and Water Storage

By observing all of the many different considerations recommended by FEMA and other environmental agencies the Applicant can avoid making costly mistakes with respect to establishing and operating their Debris Management Site(s).
Environmental and Historic Preservation (EHP) Requirements

FEMA uses the term “Special Considerations” to describe issues other than basic program eligibility that affect the scope of work and funding for a project. Applicants have a critical role in identifying and resolving special consideration issues.

Environmental issues range along a wide variety of Federal, State and local regulatory guidelines. Contacting the appropriate authority is critical for the Applicant prior to engaging in any projects which disturb environmentally sensitive areas. In addition, historical considerations must be factored into any site planning for a potential project due to continuously updated regulations at all levels of government.

Information on national and State of Florida historical sites, and instructions for requesting historical evaluations, can be found at the Florida Department of State.
Environmental and Historic Preservation (EHP) Requirements (cont’d)

Requirements that should be observed in order to pass FEMA’s Environmental and Historic Preservation Review Process:

- Identification and disclosure of the location of Debris Management Site(s) to ensure approval by the Florida Department of Environmental Protection
- Initial and closing evaluations of the site to ensure that the land is returned to its original condition
- Compliance with federal, state and local regulations when collecting, transporting and disposing of debris
- A ‘Burn Authorization’ must be obtained from the Florida Forest Service, or certain authorized local fire departments, for vegetative debris

Specific requirements for DMSs and Final Disposal Sites include:

**Debris Management Sites**

- Copy of the Pre-authorization from FDEP for use of the TDSRS
- Copy of the final closure inspection by FDEP indicating that the DMS was remediated to pre-disaster conditions
- Verification that debris will not be staged or disposed of in floodplains or wetlands

**For Final Disposal Sites**

- Verification that final disposition is in a FDEP permitted facility (name, address, facility identification number) or in a manner consistent with FDEP rules
- Documentation of the contractor that handled and disposed of the debris
Debris Monitoring

Debris Monitoring is a critical element of the Recovery effort and can involve Federal, State, local and private entities providing a range of services. Debris Monitors need to understand FEMA PA policies and guidelines, including eligibility issues and specifically those relating to debris eligibility.

**FEMA Debris Monitors are responsible for:**
- Safety – Identifying health/safety risks and requiring proper field safety gear
- Eligibility – Verifying overall compliance with PA eligibility criteria
- Compliance – Checking debris loading, staging, reduction, and disposal sites as well as reporting any non-compliance
- Debris Operations – Validating truck certifications, evaluation operational efficiency, and overseeing documentation

**State Debris Monitors are responsible for:**
- Safety – The contractor is complying with public and employee safety standards during debris operations
- Compliance – Work must comply with all ordinances including environmental and historic preservation
- Debris Operations – Truck measurements, loading, and load ticket completion
- Management and Oversight – Sites must be properly administered and accurate records must be kept

**Applicant Debris Monitors are responsible for:**
- Loading Site Monitoring – Perform on-site, street-level debris monitoring at all loading sites
- Tower/Site Monitors – Debris Monitors stationed at DMSs which monitor Safety, Compliance, Debris Operations and Communication
- Field Supervisor – Responsible for scheduling and deploying the loading and tower Monitors, and overseeing their daily activities

**Important:** FEMA debris specialists do not direct field operations on behalf of the Applicant, it is the Applicant’s responsibility to do so by implementing and managing debris monitoring activities.
Debris Removal

When conducting a Debris Removal operation it is important to identify any Critical Facilities and Priority Routes that need to be addressed first. These facilities and routes should be included as part of the Debris Management Plan that FEMA encourages all Applicants to have.

Debris Removal should be organized into 2 phases:
• Initial debris clearance activities necessary to eliminate life and safety threats
• Debris removal activities as a means to recovery

More Specifically:
• Initial Response Phase begins during the disaster event, when crews may be activated to clear debris on emergency access roads; usually this is vegetative debris that is cut and tossed to the right-of-way
• Transition period from initial to debris removal depends on magnitude of the disaster impact
• Debris Removal Recovery Phase begins after the emergency access routes are cleared and police, firefighters, and other first responders have the necessary access

Collection of vegetative debris is eligible for reimbursement if it is within the public rights-of-way and collected by an eligible applicant.

Important: Applicants normally limit the number of times the debris is collected (usually called passes). The Applicant needs to discuss with FEMA the number of passes that may be eligible.
Vegetative Debris

**Definition:** Whole trees, tree stumps, tree branches, tree trunks, and other leafy material.

**Vegetative Debris**
Vegetative debris generally accounts for a large chunk of the cost associated with post-disaster clean-up. This section will seek to identify the many different types of vegetative debris encountered as well as the various reduction and disposal methods that are most typically used. The outline below contains a brief summary of what to expect.

**Vegetative Debris Types:**
- Hazardous Trees (Leaners)
- Hazardous Limbs (Hangers)
- Hazardous Stumps

**Reduction Methods:**
- Chipping and Grinding
- Incineration

**Disposal:**
- Recycling
- Debris Management Site (DMS)
- Landfill
Vegetative Debris: Types

Common Vegetative Debris

- Generally consists of large amounts of tree limbs and branches that are piled on the public rights-of-way by residents
- Applicants normally limit the number of times the debris is collected by conducting two passes before resuming regular collection activities, however if more are warranted then FEMA should be consulted to ensure the eligibility of additional passes
- Depending on the size or amount of the debris, collection may require the use of flat bed trucks, dump trucks and grapple loaders

Important: Pruning, maintenance trimming, and landscaping are not eligible costs.
Vegetative Debris: Hazardous Trees (Leaners)

Hazardous Trees (Leaners)
Has a diameter at breast height of 6 inches or greater and one or more of the following criteria are met:

- More than 50% of the crown damaged or destroyed
- Split trunk or broken branches that expose the heartwood
- Fallen or been uprooted within a public-use area
- Leaning at an angle greater than 30 degrees

Important: Trees determined to be hazardous that have less than 50% of the root-ball exposed should be cut flush at ground level, with the cut portion of the tree included with regular vegetative debris.
Vegetative Debris: Hazardous Limbs (Hangers)

Hazardous Limbs (Hangers)
May be determined to be eligible if the following conditions are met:
• Hanging over or onto improved public property
• Greater than two inches in diameter at the point of breakage
• Still hanging in a tree and threatening a public-use area

Documentation needed for grant consideration:
• Show the immediate threat using photos of hanging limbs
• Clearly define the scope of work to remove the immediate threat
• Specify the location using the nearest building or GPS coordinates
• Denote date, labor and equipment used to perform work

May be determined ineligible if the following situations occur:
• Classified as pruning, maintenance trimming and landscaping
• Removing hanging limbs from a tree already determined to be a hazard and scheduled for removal
• Removing more of a hanging limb than the scope of work calls for
• The limbs on a tree do not extend over the public right-of-way

Important: Only the minimum amount of work necessary to remove the hazardous limb is eligible for reimbursement, requiring efficient execution of the scope of work.
Vegetative Debris: Hazardous Stumps

Hazardous Stumps
May be determined hazardous and eligible as a per-unit cost for removal if:
• 50% or more of the root-ball is exposed
  • If less than 50% exposed the stump should be cut flush with the ground
• Greater than 24 inches in diameter, as measured 24 inches above the ground
• On improved public property or a public right-of-way
• An immediate threat to life, public health and safety

FEMA may reimburse a reasonable cost to remove, transport, dispose of, and fill the hole from a stump more than 24 inches in diameter if:
• All parties agree the stump is hazardous according to the eligibility criteria
• FEMA approved the removal in advance (preferred but not always required)
• A Hazardous Stump Worksheet is completed and submitted for FEMA approval
Vegetative Debris: Hazardous Stumps

If a hazardous stump must be removed prior to FEMA approval then the following information must be submitted for Public Assistance grant consideration:

- Photos and GPS coordinates that establish location on public property
- Specifics of the threat
- Diameter of the stump 24 inches from the ground
- Quantity of material needed to fill the resultant hole

Stumps measuring 24 inches in diameter or less do not require special equipment for removal and are reimbursed at the regular vegetative rate, with volume calculated using the Stump Conversion Table (Archived FEMA DAP9523.11) developed by FEMA. Stumps placed on the rights-of-way are reimbursed at the normal vegetative unit cost rate.
Vegetative Debris: Reduction Methods

Reducing and/or recycling debris from a disaster has financial and environmental advantages. The overall cost of debris removal can be decreased by reducing the amount of material that is taken to a landfill. Additionally, recycling potentially useful products for specific markets may offset the cost of operations even more.

Chipping and Grinding:
The Vegetative Debris Reduction Process is completed by Chipping and Grinding vegetative debris before burying it in preapproved locations or using it for various projects. Below are some points to be aware of when dealing with this type of debris:

- Chipping and Grinding reduces the volume of vegetative debris by 75%
- The mulch created from this reduction method can be used for agricultural purposes but must be of a certain size and not contain any paper, plastic or dirt
- There is no permit required for Chipping or Grinding Vegetative Debris
- Costs to reduce vegetative debris are eligible for Public Assistance grant funding only if they are found to be reasonable
- The final product from chipping and grinding may be used for parks, recreational facilities, and other maintained natural landscapes
  - It can also be sold as salvage material to third parties in order to generate revenue
Vegetative Debris: Reduction Methods (cont’d)

Revenue gained from salvage no longer must be deducted from grant funding if the Applicant chooses to participate in one of the Public Assistance Alternative Procedures Pilot Program options. The program is temporary however and the Applicant should consult with a FEMA representative when assessing options following a disaster.

Important: The ability to utilize revenue from salvaged or recycled materials for FEMA sanctioned purposes should not be underestimated, especially if the debris happens to be of a valuable nature. The ability to utilize revenue from salvaged or recycled materials for FEMA sanctioned purposes should not be underestimated, especially if the debris happens to be of a valuable nature.
Vegetative Debris: Reduction Methods (cont’d)

If incineration is the reduction option chosen then there must be a valid burn permit issued from the Florida Forest Service or an appropriate authority. The process of incineration can reduce the volume of vegetative debris by up to 95%.

<table>
<thead>
<tr>
<th>Portable Air Curtain Incinerator</th>
<th>Air Curtain Incinerator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best method</td>
<td>Second best method</td>
</tr>
<tr>
<td>Pre-manufactured pit and blower</td>
<td>Uses a pit and blower to incinerate debris</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controlled Open-Air</th>
<th>Uncontrolled Open-Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third best method</td>
<td>Least desirable method</td>
</tr>
<tr>
<td>Contains the burn in a fixed area</td>
<td>No control over time of burn</td>
</tr>
</tbody>
</table>
Construction and Demolition Debris

**Definition:** Damaged components of buildings and structures such as lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and floor coverings, window coverings, pipe, equipment, etc.

**Construction and Demolition Debris (C&D)**
This type of debris can sometimes be classified hazardous (asbestos, lead pipes, etc...) and must be subjected to the same Federal, State and local laws and regulations that regular hazardous waste is prior to being disposed of in a C&D specific landfill. There are many uses for construction and demolition debris however, and finding ways to reuse or recycle them can result in the following scenarios:

- Cost savings to everyone involved with the operation
- Conservation of landfill space by reducing the bulk material placed there
- Providing a source of revenue or construction material to the applicant depending on their needs

To be eligible for reimbursement C&D debris must be a result of a Federally declared disaster. Documentation of the debris origin, any processing (reduction or recycling), and the final disposition is required for Public Assistance funding consideration.

**Important:** Removal of construction by-products generated by repairs or rebuilding is covered by insurance policies or included in the overall cost for reconstruction projects; therefore, it is not eligible for Public Assistance grant funding under debris removal. It may, however, potentially be reimbursed as part of the permanent work for the reconstruction of an eligible project.
Hazardous Waste Debris

**Definition:** Waste with properties that make it potentially harmful to human health or the environment.

**Hazardous Waste**

Hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA) and is generally identified by the similarity of its characteristics to the following four categories: Ignitibility, Corrosivity, Reactivity or Toxicity. Funding may be available for measures that address widespread hazardous materials contamination, such as:

- Retrieval and proper disposal of orphan drums
- Pumping water contaminated with hazardous materials
- Control or stabilization of oil or other hazardous material releases
- Cleanup and disposal of hazardous materials

Certified hazardous waste technicians should handle, capture, recycle, reuse, and dispose of hazardous waste in accordance with Federal, State and local requirements. Public assistance funding is not available to test for mold or contaminants in water, air, or soil for the purposes of long-term cleanup actions.

**Procedures for Removal of Hazardous Waste**

- The responsible party for generating the waste is also the responsible party for cleaning and disposing of it
- The responsible party must coordinate with FDEP and all other applicable agencies for cleaning and disposal
- The responsible party must ensure the waste is transported according to Federal, State, and local regulations
- The responsible party must ensure the waste is disposed, recycled, or reused consistent with regulations

**Important:** FDEP, EPA and the USCG (coastal waterways) provide first response functions in cases of commercial, agricultural, industrial, and toxic waste spills.
Household Hazardous Waste Debris

Definition: Hazardous products and materials that are used and disposed of by residential, rather than commercial or industrial consumers.

Household Hazardous Waste (HHW)
Household Hazardous Waste is found in nearly every household and can therefore be a major problem if a large disaster occurs. Below are some examples of what would be considered to be HHW:

- Paints
- Stains
- Varnishes
- Solvents
- Pesticides
- Products or materials containing volatile chemicals that catch fire, react, or explode under certain circumstances, or that are corrosive or toxic

Electronic Waste (E-waste)
Electronic waste refers to all of the electronics that contain hazardous materials in a household, such as cathode ray tubes, computer monitors and televisions.

HHW/E-waste Removal and Disposal Steps
- Should be collected by a contractor with knowledge of correct handling/disposal procedures
- Must be transported according to Federal, State, and local regulations
- Must be disposed, recycled, or reused in a manner consistent with environmental regulations
- If temporarily stored prior to disposal then the collection site should be lined to avoid contaminants leeching into the soil
White Goods Debris

**Definition:** Discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters.

**White Goods (WG)**
Many white goods contain ozone-depleting refrigerants, mercury, or compressor oils. The Clean Air Act prohibits the release of refrigerants into the atmosphere, and requires that Certified Technicians extract refrigerants from white goods before they are disposed of or recycled.

Care should be taken ahead of time to ensure that certified recycling centers permitted to take white goods are located in advance if possible. This helps to avoid any confusion regarding how to handle this category of debris, as failing to adhere to the removal and disposal guidelines can cause a loss of grant funding unnecessarily.

**White Goods Removal and Disposal Steps**
- Ensure that certified recycling and disposal centers are located ahead of time
- Carefully load white goods for transportation to pre-designated centers
- Ensure that only certified technicians are responsible for removing refrigerants and other machine fluids regulated by FDEP and the EPA
Soil, Mud and Sand Debris

**Definition:** The remains of disturbed land caused by floods, landslides or storm surges deposited on improved public property or public rights-of-way.

**Soil, Mud and Sand**
This type of debris is common when water is part of the disaster profile. Coastal communities especially must be prepared for this type of debris as a storm surge can deposit tons of sand over a large area in a very short amount of time. Facilities commonly impacted by this type of debris may include the following:

- Streets
- Sidewalks
- Storm and Sanitary Sewers
- Water Treatment Facilities
- Drainage Canals and Basins
- Parks
- Swimming Pools

The amount of Public Assistance grant funding is based on the quantity of debris that was deposited due to the disaster. In order to determine the debris quantities resulting from the disaster the applicant should provide regularly scheduled maintenance reports that indicate the pre-disaster soil, mud and sand levels. Additionally, though Public Assistance grants do not provide funds for random surveys they may cover inspections to determine the extent of the damage and method of repair.

**Important:** If a flood control work or water control facility falls under another Federal jurisdiction, it is generally not eligible for Public Assistance grant funding.
Vehicles and Vessels Debris

**Definition:** Any vehicle or vessel which is abandoned as a result of disaster related damage.

**Vehicles and Vessels**
For removal of vehicles or vessels to be eligible the applicant must demonstrate that:
- The vehicle or vessel presents a hazard or immediate threat that blocks ingress/egress in a public-use area
- The vehicle or vessel is abandoned, as in the vehicle or vessel is not on the owner’s property and ownership is undetermined
- The applicant followed local ordinances and State law by securing ownership
- The applicant verified chain of custody, transport and disposal of the vehicle or vessel

For navigational vessels applicants must:
- Follow their hazard abatement laws
- Coordinate with the requirements of the marine and harbor patrol agencies
- Comply with local laws governing navigational vessels (FWC General Order 21)

**Important:** All supporting documentation relating to removal of abandoned vehicles and vessels must be submitted to FEMA for Public Assistance grant consideration.
Vehicles and Vessels Debris

Handling Vehicles and Vessels
FEMA may fund the removal and disposal of eligible disaster generated debris, wreckage, and sunken vessels from the coastal zone or inland zone, non-Federally maintained navigable waterways and wetlands by an eligible applicant if:

• The debris, wreckage, or sunken vessel is the direct result of a Presidentially declared disaster
• The removal is in the public’s interest
• Another Federal agency does not have specific authority to perform or fund the work

Important: In order to be eligible for public assistance an eligible applicant must provide documentation of this work, to include:

• A public interest determination
• Legal responsibility
• Debris types and quantities to be removed
• Debris removal locations
**Putrescent Debris**

**Definition:** Any debris that will decompose or rot, such as animal carcasses, unrefrigerated meat and other fleshy organic matter.

**Putrescent Debris**

The cost of putrescent debris collection and disposal may be eligible to applicants. Disposal of this debris must be in compliance with applicable Federal, State, and local requirements to be eligible for Public Assistance grant funding. The USDA’s Natural Resources Conservation Service has developed specific disposal guidelines for animal carcasses, which can be found at: [http://www.nrcs.usda.gov/](http://www.nrcs.usda.gov/)

Before burying or composting, the disposal site should be evaluated for the following:

- Soil Type
- Depth of Bedrock
- Presence of Fractured or Cavernous Bedrock
- Depth to a Seasonal High Water Table
- Flooding Hazard
- Proximity to Bodies of Water (Rivers, ponds, etc.)
- Proximity to Wells
- Distance to Public Areas
Putrescent Debris (cont’d)

Dead Animal Burial Sites Should Be
- At least 300 ft. up gradient or 150 ft. down gradient from any well
- At least 165 ft. from a property line or public use area
- At least 100 ft. from a water body, stream, or drainage way and no closer than 2 ft. to bedrock or the seasonal high water table
- In soils with a permeability of less than 2.0 in/hr (soils with greater permeability will be avoided or will have a liner installed)

Site Approval
Contact the local NRCS office for an on-site assessment to establish a suitable burial site. In the event of a catastrophic loss, notify the State veterinarian for approval to use the burial site prior to disposal.
Infectious Waste Debris

**Definition:** Waste capable of causing infections in humans, including contaminated animal waste, human blood and blood products, isolation waste, pathological waste and discarded sharps (needles, scalpels or broken medical instruments).

**Infectious Waste**
Infectious waste can be a very difficult threat to deal with. When combined with the lack of a readily identifiable methodology for dealing with this waste it can quickly become a much larger issue then it might first appear.

**Guidance When Dealing With Infectious Waste**
- The clearance, removal, and disposal of infectious waste may be within the authority of another Federal agency.
- Upon review of applicable Federal statutes, regulations and policies governing infectious waste, FEMA will determine eligibility on a case by case basis and may develop disaster-specific guidelines when appropriate.
CBRN: Chemical, Biological, Radiological and Nuclear Debris

Definition: CBRN contaminated debris is debris contaminated by chemical, biological, radiological, or nuclear materials as a result of a natural or man-made disaster.

Chemical, Biological, Radiological, and Nuclear Debris can be devastating to a community due to the harmful secondary effects that can linger for long periods of time. Eligibility determinations on the clearance, removal and disposal of CBRN contaminated debris will be made by FEMA based on applicable Federal statutes, regulations, policies, and other guidance documents. Depending on the nature of the disaster and the debris it generates, FEMA may develop additional or disaster specific eligibility guidance.

Examples of CBRN Events:
- Chemical spill
- Release of biologically harmful organisms
- Nuclear power plant leak or explosion
- Weapon of Mass Destruction (WMD)
**Garbage**

**Definition:** Waste that is regularly picked up by an applicant such as food, packaging, plastics and papers.

Garbage

Garbage is a normal, routine maintenance element within a community. Whether a disaster does or does not occur, garbage will still need to be removed from households and businesses. For this reason, garbage is not considered to be eligible for grant funding and should instead be collected through regular municipal waste collection methods.

It is important to notify the community during media outreach efforts to only place eligible disaster related debris along the public right-of-way, as regular household garbage may lead to loss of funding for the applicant if it is picked up as well.
Disposal

Debris Estimating/Forecasting

Collection

Debris Management Site (DMS)

Reduction and Recycling

Potential Salvage Materials (Recyclables)

Final Disposal

Example of a DMS Layout
Recent Changes in Debris Management

PA Pilot Program
If the Sub-grantee has acquired a FEMA reviewed debris management plan before the date of the disaster declaration incident period FEMA will make available the option to choose a one-time incentive of a 2 percent cost share adjustment applied to debris removal work completed within the first 90 days of a disaster. This one-time incentive will not be available to the same Sub-grantee again during the course of the pilot program. This procedure can be used with any of the other pilot program options or on its own. In order to become eligible to qualify for this option FEMA must have reviewed the Applicant’s DMP as presented through the Grantee and then provide an approval letter upon a successful review for use when submitting the initial request for public assistance.

The following elements are what FEMA checks for when conducting a Debris Management Plan review:

- Events and assumptions
- Debris collection and removal plan
- Debris disposal locations and debris management sites
- Debris removal on private property
- Use and procurement of contracted services
- Use of force account labor
- Monitoring of debris operations
- Health and safety requirements
- Environmental considerations and other regulatory requirements
- Public information

If these elements are included and appropriately addressed within the DMP then the applicant will receive a letter from FEMA stating that the plan met with the basic recommended FEMA policies.
Recent Changes in Debris Management (cont’d)

The legislation addressing the pilot program also requires a Sub-grantee to have at least one or more pre-qualified contractors. Any debris contract award must comply with Federal procurement requirements, as outlined in 44 CFR §13.36. Federal procurement compliance may have more stringent requirements than State or local requirements, the Applicant should take care to ensure that the most stringent criteria are applied to avoid potential issues.

In addition, the content of the plans will vary and depend highly on State and local ordinances and zoning, as well as the location of critical infrastructure, emergency services, disposal locations, and other localized factors. FEMA will review the plans to ensure that Sub-grantees have considered the elements listed above. FEMA review of the plan does not mean it is approving any operational component of the plan and does not commit the Federal government to funding any aspect of the plan.