



Houston-Galveston Area Council

STRATEGIC GUIDE TO DEBRIS MANAGEMENT AUGUST 2005



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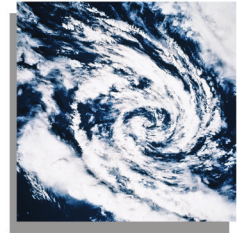
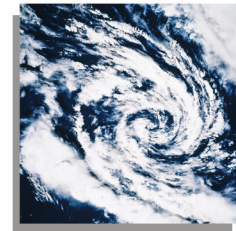


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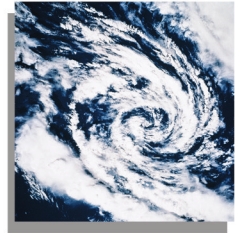
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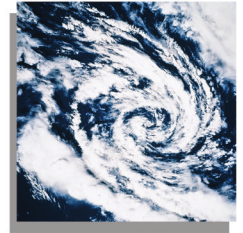
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Acronyms

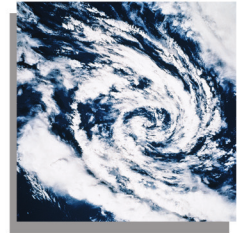
This is a list composed of acronyms seen in this document and from FEMA resources.

CBRA	Coastal Barrier Resources Act
CBRS	Coastal Barrier Resources System
C & D	Construction and Demolition
CEF	Cost Estimating Format
CFR	Code of Federal Regulations
DAE	Disaster Assistance Employee
DAR	Daily Activity Report
DEM	Texas Department of Emergency Management
DFO	Disaster Field Office
DRM	Disaster Recovery Manager
EAD	Executive Associate Director
EO	Executive Order
EPA	Environmental Protection Agency
ER	Emergency Relief
ESA	Environmental Site Assessment
FCO	Federal Coordinating Officer
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FEMA	Federal Emergency Management Agency
GAR	Governor's Authorized Representative
H-GAC	Houston-Galveston Area Council
HHW	Household Hazardous Waste
HMP	Hazard Mitigation Program
IA	Individual Assistance
INF	Immediate Need Funding
MAA	Mutual Aid Agreement(s)
MPH	Miles per hour



Acronyms

NEPA	National Environmental Policy Act
NEMIS	National Emergency Information System
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NRCS	Natural Resource Conservation Service
PA	Public Assistance
PAC	Public Assistance Coordinator
PAO	Public Assistance Office
PDA	Preliminary Damage Assessment
PL	Public Law
PNP	Private Nonprofit
PO	Project Office
PW	Project Worksheet
RC	Resource Coordinator
RCRA	Resource Conservation and Recovery Act
RD	Regional Director
RPA	Request for Public Assistance
ROW	Right(s)-of-way
SC	Special Consideration
SHPO	State Historic Preservation Officer
SOP	Standard Operating Procedure
SPAC	State Public Assistance Coordinator
SPAO	State Public Assistance Officer
SPO	State Project Officer
TAC	Technical Assistance Contractor
TCEQ	Texas Commission on Environmental Quality
TDSR	Temporary Disposal, Storage, and Reduction
TxDOT	Texas Department of Transportation
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service

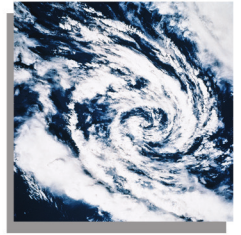


1.0 Introduction

In 1983, Hurricane Alicia made landfall on the west end of Galveston Island. According to the National Weather Service, Alicia was a Category 3 hurricane with sustained winds of 96 mph and gusts of 127 mph. The storm surge measured 12 feet at Seabrook on Galveston Bay. On the Gulf side, tides measured 7.5 feet at Galveston. The hurricane spun off 23 reported tornadoes. As a direct result of the hurricane, 22 people died and 3,094 were injured or became ill. A total of 3,008 homes were damaged and 2,297 were completely destroyed (National Weather Service). This was the final blow to the Brownwood subdivision in Baytown, which had suffered from subsidence. The subdivision was eventually purchased through the Federal Emergency Management Agency's (FEMA) buy out program. Overall, Hurricane Alicia caused \$3.9 billion (2005 dollars) in damages (Wikipedia on-line encyclopedia).

One of the largest expenses in recovering from a disaster, such as Hurricane Alicia and, more recent, Tropical Storm Allison, is debris removal. Debris removal often consists of vegetative, construction, and demolition debris. Debris removal must happen quickly and efficiently, so that people can move on with their lives and start to rebuild. However, debris removal can overwhelm a community of any size and errors made during this process can be costly. Therefore, the Houston-Galveston Area Council (H-GAC) has developed a toolbox, the H-GAC Strategic Guide to Debris Management that will help communities implement successful debris management plans. This guide contains the following nine sections to developing a debris management strategy, including:

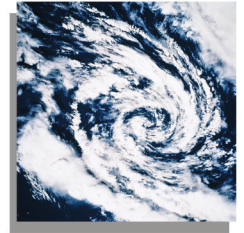
- Overview of Debris Management
- Organizing a Debris Management Team
- Developing a Debris Removal Strategy
- Timeline
- Overview of the FEMA Declaration and Public Assistance Process
- Understanding the Public Assistance Process
- Avoiding Common Mistakes
- Putting It All Together
- Appendices
 - Appendix A Pre-Disaster Checklists
 - Appendix B Post-Disaster Checklists
 - Appendix C Debris Websites
 - Appendix D Compact Disc, which includes the following documents:
 - Applicant Workbook
 - Checklists
 - FEMA Forms
 - FEMA Debris Management Guide
 - FEMA Debris Operations Job Aid



Introduction

- FEMA Policy Digest
- FEMA Public Assistance Guide
- H-GAC Regional Storm Debris Management Assessment 2002
- TCEQ Outdoor Burning in Texas
- Texas Department of Transportation and Federal Highway Administration Roads
- Texas Procurement Policies
- USACE Sample Contract Scope of Work

This guide is meant to help communities, both big and small, develop a debris management plan well before the start of the 2006 Atlantic hurricane season. A debris management plan should be put in place prior to June 1 (the start of Hurricane Season) and should allow enough time for implementation and training, and therefore, community preparedness.



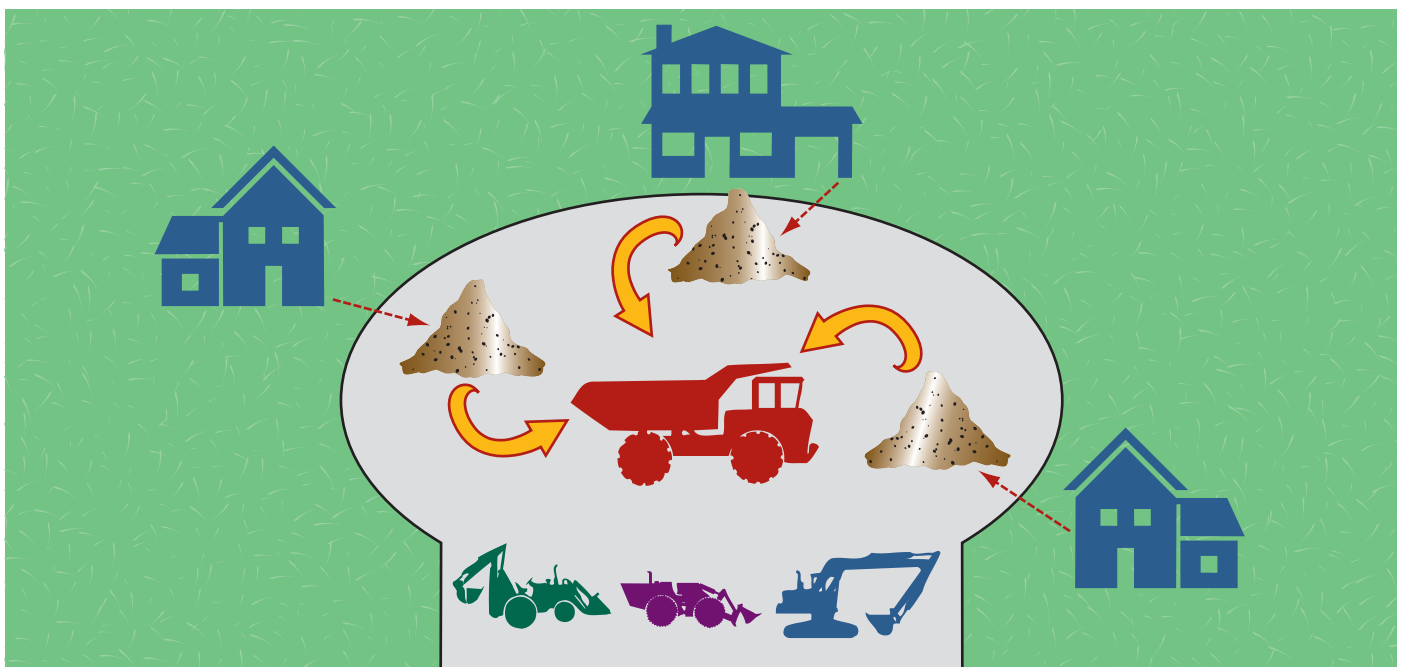
2.0 Overview of Debris Management

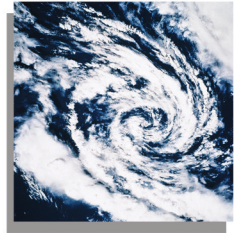
When a disaster strikes, local government is the first to respond. Most communities have an Emergency Operations Plan and should have a Debris Management Plan in place as well. A Debris Management Plan, like an Emergency Operations Plan, identifies key staff roles and responsibilities for managing the clearing, removal, possible storage and disposal of storm debris. There are roles and responsibilities before and after a natural disaster occurs.

Using the H-GAC Regional Storm Debris Management Assessment 2002, each community has the tools to estimate potential debris, determine potential storage sites, and locate processing and disposal facilities. Other critical elements in preparing for a storm event include determining labor and equipment needs. Procuring contractors prior to hurricane season increases a community's chances of hiring a qualified contractor. Once the disaster strikes, the local government can activate the contract without the delay of the procurement process.

During the recovery phase, a Debris Management Plan guides local government staff through the process of damage assessment, debris removal activities, and disposal. So how is debris removed? Figure 2.1 depicts a cul-de-sac and the equipment used to remove the debris. Also included in a debris removal site are monitors. While a FEMA monitor may not stay at one site the entire time, the local entity's debris management plan should include full-time monitors that are present at a loading site to be sure that the contractor is only removing debris from the right-of-way.

Figure 2.1 Overview of Debris Loading Operations

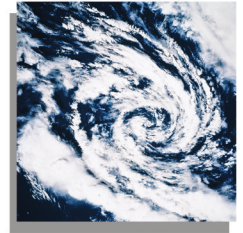




Overview of Debris Management

In the Gulf Coast region, often hurricanes quickly overwhelm local resources, and the local government must ask for immediate and long-term assistance from the State and Federal governments. When a local government asks for financial assistance from the Federal Emergency Management Agency (FEMA), documentation is required in order to receive funds. A local government must closely track staff time, load tickets, and contractors.

The goal of each community after a disaster strikes is to return to normal as soon as possible. The key tasks that will help a local government meet this goal are planning for the disaster, preparing for the debris removal, and tracking the paperwork. There are many guidebooks and web resources that can guide each local government through this process. This guide provides links to these resources and steps on how to plan, prepare and track.



3.0 Organizing a Debris Management Team

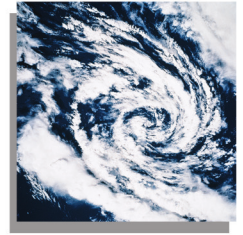
The first step in debris management preparedness is to organize a debris management team. A debris management team oversees the preparedness for and assists with recovery from a disaster. The debris management team meets periodically throughout the year to review responsibilities, timelines, and resources. Additionally, the team convenes after recovering from a disaster to review current policies and strategies and then takes steps to improve the recovery process.

The team consists of departments that are already involved in response and recovery, contracting, and waste removal, including Local Environmental Enforcement Agencies, Finance, Public Works and Solid Waste Departments. However, while staff from these departments may comprise the core team, other departments will need to be involved in supportive roles too.

Once a team is developed, the roles and responsibilities of each team member, as well as any tasks, deadlines, and expectations must be defined. Suggested pre-disaster tasks divided into checklists are located in Appendix A. Appendix B contains post-disaster checklists. Table 3.1 provides an example list of the potential roles and responsibilities of team members from various departments.

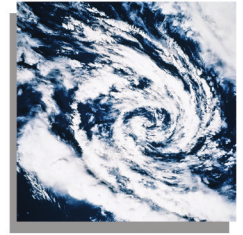
Table 3.1 Roles and Responsibilities

Department Roles	Debris Management Responsibilities
City Mayor or County Judge	<ul style="list-style-type: none"> Request disaster assistance from the State
City Manager or Chief Administrative Officer	<ul style="list-style-type: none"> Reports to the Mayor & Council or County Judge and Court Coordinates efforts between departments Develops policy Final administrative decision maker Signature authority for FEMA forms (may vary with community)



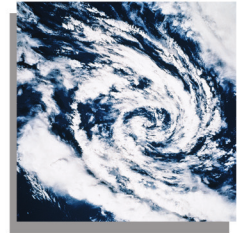
Organizing a Debris Management Team

Department Roles	Debris Management Responsibilities
Office of Emergency Management	<ul style="list-style-type: none"> • Helps with request for disaster assistance and is a liaison with providers/vendors • Manages on-site staff • Oversees FEMA claims and project application management • Manages the preparation of documentation for FEMA
Public Works: Planning and Solid Waste Departments	<ul style="list-style-type: none"> • Analyze amount and type of waste • Site selection for temporary storage sites • Environmental assessment of temporary storage site • Land use and zoning variances • Environmental review, permits, and control • Develop a debris processing strategy • Contacts potential haulers, brokers, and processors • Identify potential heavy equipment needs
Public Works: Engineering	<ul style="list-style-type: none"> • Detailed damage assessments • Scope of work and specifications for debris contracts • Preparation of cost estimates
Public Works: Road and Bridge and Water and Solid Waste Departments	<ul style="list-style-type: none"> • Removal of debris on roads and right-of-way (ROW) • Ensures the resumption of normal solid waste functions • Maintains street access by removal of debris • Manage and maintain equipment



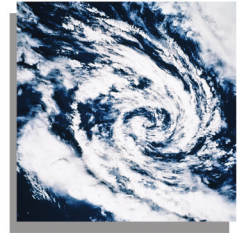
Organizing a Debris Management Team

Department Roles	Debris Management Responsibilities
<p>Finance: Contracting, Procurement, Accounting, Controller</p>	<ul style="list-style-type: none"> • Arrange for emergency budgets and loans • Assists with hiring temporary employees • Bidding Requirements • Advertisement for bids • Instructions for bidders • Review contracts • Review claims and insurance settlements • Track debris management related labor, including overtime, expenditures and equipment
<p>Legal Department</p>	<ul style="list-style-type: none"> • Reviews Contracts • Reviews regulations and ordinances • Advises on emergency actions and authorities • Right of entry permits • Community liability • Land acquisition for temporary site • Prepares new ordinances and regulations that allow for emergency staff authority, debris removal and temporary storage
<p>Public Information Office</p>	<ul style="list-style-type: none"> • Manage all media and outside communications • Inform the public about disruption and resumption of waste collection services • Informs the public of storm related debris pick-up services and deadlines • Inform public about disposal of household hazardous waste (HHW) • Issue timely reports on debris removal regulations, status, and other efforts



Organizing a Debris Management Team

Department Roles	Debris Management Responsibilities
Local Environmental Enforcement: Code Enforcement, Health Department, Police	<ul style="list-style-type: none"> • Assist in the siting and operation of temporary storage and processing sites by determining potential impacts • Secure sites and equipment • Identify required permits • Determine necessary environmental controls • Work with property owners on clean up
Household Hazardous Waste	<ul style="list-style-type: none"> • Work with Public Works to determine temporary storage for household hazardous waste (HHW) • Work with the Legal Department on contracts for haulers and processors
Administration: General Services and Procurement	<ul style="list-style-type: none"> • Communications between departments • Supplies and equipment • Vehicles • Support Contracts including temporary personnel
Parks Department	<ul style="list-style-type: none"> • Assess vegetative growth in parks • Assess damage in parks and other public facilities • Develop a plan for temporary storage and reduction of woody debris



4.0 Developing a Debris Removal Strategy

The greatest natural disaster threat to the H-GAC area is a hurricane. Flooding, storm surge, and sustained winds destroy homes and businesses, creating large amounts of debris. Debris is first classified as either woody debris or construction and demolition (C&D) debris. Woody and C&D debris are then classified as either burnable or non-burnable. The United States Army Corps of Engineers (USACE) has developed a debris-estimating model to project both the amount and type of debris associated with a hurricane. Debris associated with hurricanes is generally comprised of 30% clean wood debris and 70% mixed C&D debris. The 70% C&D debris is generally comprised of the following:

- 42% Burnable (requires sorting)
- 5% Soil
- 15% Metals
- 38% will require deposition in a landfill

TIP

Debris does not separate itself neatly into woody and C&D debris piles. Unless the decision is to go from debris loading site to landfill directly, debris will need to be separated first.

What does this mean for the municipality? Approximately 72% of all material is burnable or could be potentially reduced by chipping and grinding. This leaves 28% as non-burnable. During the pre-disaster waste analysis keep in mind there are four broad options for debris deposition:

- Landfill
- Incineration
- Chipping and grinding (mulching)
- Recycling

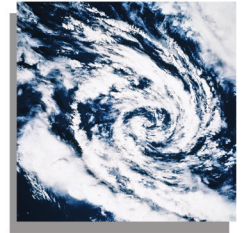
TIP

All Type I Landfills are permitted to accept Construction and Demolition Waste.

4.1 Determine the Projected Amount of Debris

Use the USACE Hurricane Debris Estimating Model to project the amount and types of wastes generated by each hurricane category. Refer to the H-GAC Regional Storm Debris Management Assessment 2002: Tab D Detailed County and City Debris Estimating Tables or <http://www.swg.usace.army.mil/em/mg/mguide.asp>. The USACE Debris Estimating Model provides the following information:

- Projected amounts of debris that will be generated for a Category 1 through Category 5 Hurricane.
- Debris volumes of woody versus construction and demolition (C&D) debris including the amount of burnable debris versus estimated landfill deposition quantities.
- Staging site requirements for Temporary Disposal, Storage, and Reduction (TDSR) Sites



Developing a Debris Removal Strategy

4.2 Identify Resources for Waste Deposition

Armed with the knowledge of the projected amount and type of debris in your area, it is now time to prepare a list of facilities in the area that can assist with the deposition of debris. Some facilities to consider include:

- Processing facilities for mulching or with the capability of chipping and grinding
- Recycling centers for metals
- Road departments that may need crushed concrete or other C&D material
- Landfills

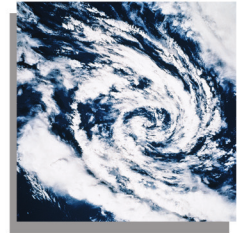
Unfortunately, while there are many debris deposition options, some portion of the debris generated by a hurricane will ultimately require a landfill, including incinerated debris ash and some types of C&D waste.

Develop a list of potential facilities including permitted landfills that are located within your county and neighboring counties. For each potential facility, list the following information:

- Name of the facility and contact information
- Accepted wastes
- Remaining capacity
- Limitations
- Distance (proximity to local entity)

A list of active landfills, including the type of debris they accept and the capacity, is available in the H-GAC Regional Storm Debris Management Assessment 2002: Table 13 Assessment of Remaining Capacity of Landfill Storage per County. This table is provided as a reference below. Two types of landfills are permitted within the H-GAC area at the time of this report (2005), Type I and Type IV.

- Type I landfills are the standard landfill for disposal of municipal solid waste.
- Type IV landfills are allowed to accept brush, construction and demolition waste, and rubbish that are free of putrescible and household waste.

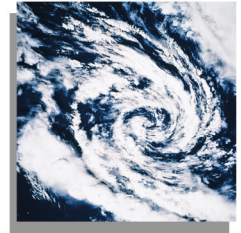


Developing a Debris Removal Strategy

Table 4.1 Assessment of Remaining Capacity of Landfill Storage per County

County Name	Type	Status	Full Permittee Name	Remaining Capacity (tons)
Coastal Counties				
Brazoria				
Hill Sand Company, Inc.	IV	A	Dixie Farm Road Landfill	1,378,682
Republic Services, Inc.	I	A	Brazoria County Landfill	3,200,040
			Subtotal	4,578,722
Chambers				
Chambers County	I	A	Chambers County Landfill	433,174
Waste Management of Texas, Inc.	I	A	Baytown Landfill	10,060,320
			Subtotal	10,493,494
Galveston				
Republic Waste Services	IV	A	North County Landfill	825,374
BFI Waste Systems of North America Inc.	I	A	BFI Galveston County Landfill	5,841,948
Waste Management of Texas, Inc.	I	A	Coastal Plains Recycling and Disposal Facility	15,096,360
			Subtotal	21,763,682
Matagorda				
No Landfills Currently Open/Operational				0
			Subtotal	0
			Sub-Regional Subtotal	36,835,898
Inland Counties				
Fort Bend				
Sprint Industries, Inc.	IV	A	Sprint Landfill	102,400
Sprint Industries, Inc.	IV	A	Fort Bend County Reclamation Landfill	1,908,058
BFI Waste Systems of North America Inc.	I	A	Blueridge Landfill	20,191,070
			Subtotal	22,201,528
Harris				
Casco Hauling and Excavation	IV	A	Casco Hauling and Excavation Landfill	1,021,504
Waste Corporation of America	IV	A	Greenbelt Landfill	426,187
Waste Management of Texas, Inc.	IV	A	Fairbanks Landfill	1,697,950
G.O. Weiss, Inc.	IV	A	Greenhouse Road Landfill	2,945,624
Waste Management of Texas, Inc.	IV	A	Cougar Landfill	2,346,200
Browning-Ferris, Inc.	I	A	McCarty Road Landfill	8,592,219
BFI Waste Systems of North America Inc.	I	A	Whispering Pines Landfill	7,165,300
Waste Management of Texas, Inc.	I	A	Atascocita Landfill	6,598,260
			Subtotal	30,793,244

Data collected from 2002. This data does not include any planned facilities or expansions.

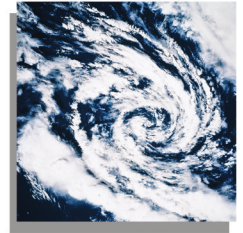


Developing a Debris Removal Strategy

Table 4.2 Assessment of Remaining Capacity of Landfill Storage Per County Continued

County Name	Type	Status	Full Permittee Name	Remaining Capacity (tons)
Liberty				
No Landfills Currently Open/Operational				0
			Subtotal	0
Wharton				
No Landfills Currently Open/Operational				0
			Subtotal	0
			Sub-Regional Subtotal	52,994,772
Upland Counties				
Austin				
No Landfills Currently Open/Operational				0
			Subtotal	0
Colorado				
Safety-Kleen (Altair), Inc.	I	A	Altair Landfill	29,659
			Subtotal	29,659
Montgomery				
Waste Management of Texas, Inc.	I	A	Security Recycling and Disposal	2,306,095
			Subtotal	2,306,095
Walker				
No Landfills Currently Open/Operational				0
			Subtotal	0
Waller				
No Landfills Currently Open/Operational				0
			Subtotal	0
			Sub-Regional Subtotal	2,335,754
			Total Remaining Landfill Capacity	92,166,424

Data collected from 2002. This data does not include any planned facilities or expansions.



Developing a Debris Removal Strategy

4.3 Assess Need for Temporary Disposal, Storage, and Reduction (TDSR) Sites

The purpose of using temporary disposal, storage, and reduction (TDSR) sites is to quickly and efficiently remove debris from roads and public rights-of-way to facilitate the recovery process. In order to better understand the role TDSR sites play in the debris removal process, review Figure 4.1.

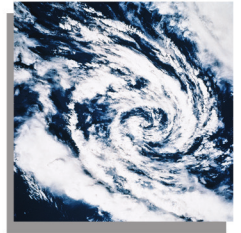
When should a TDSR site be used?

TDSR sites should be used when it is not feasible or practical to take the debris directly to the recycler, landfill, or processor. Review Table 4.3 on the amount of time needed for debris removal activities. Things to consider when determining the need for one or more TDSR sites:

- Distance to deposition is greater than 15 miles from the debris loading site
- May assist with debris volume reduction. TDSR sites are often great locations to incinerate, separate debris for recycling, or reduce woody debris volume by chipping and grinding (mulching)

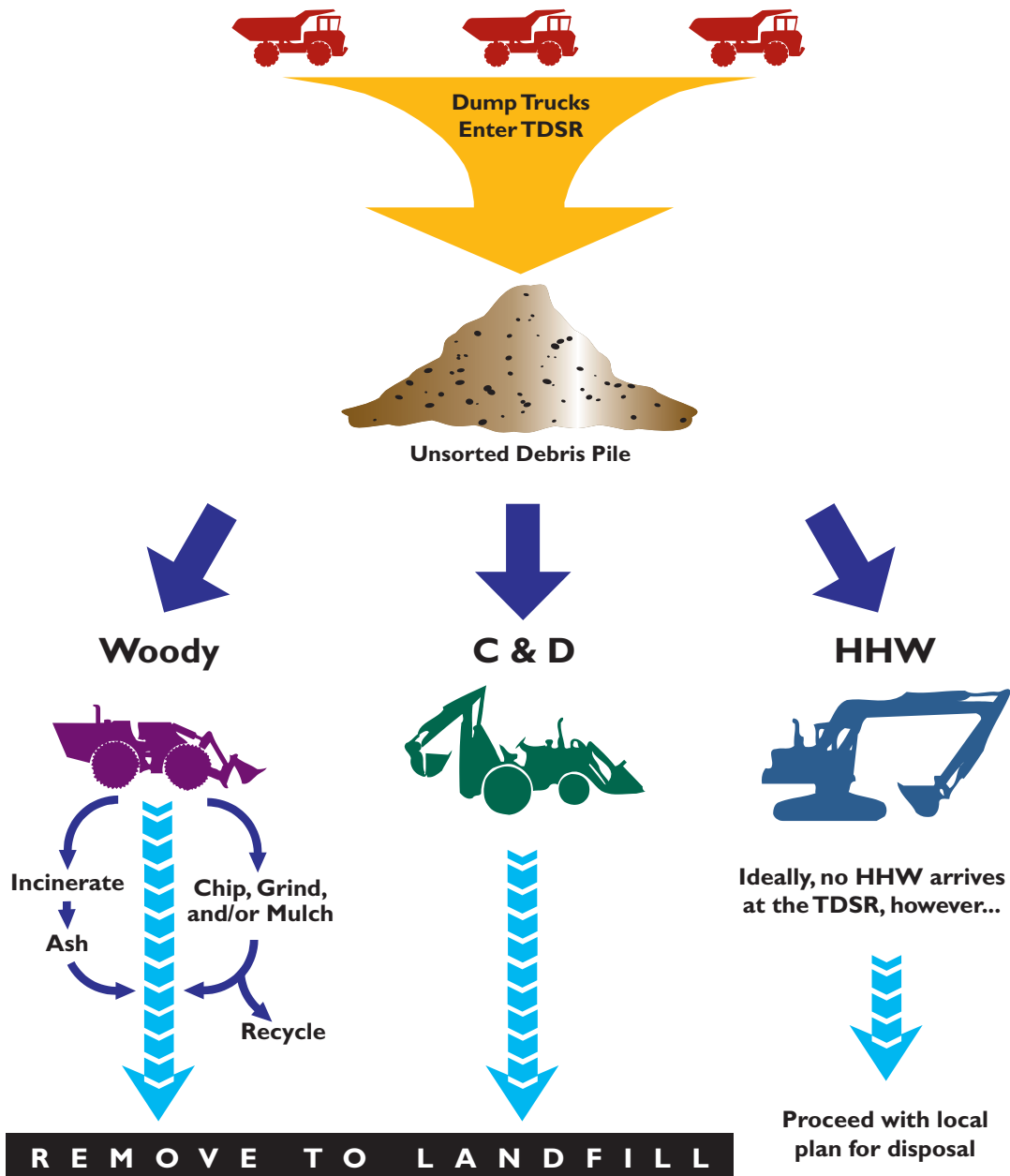
Table 4.3 Debris Removal Activity by Time

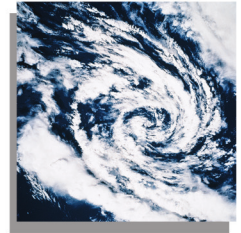
Debris Removal Activity	Time (minutes)
Load Time	10
Dump Time (Weigh Time or Tower Validation)	5
Travel Time to Landfill or TSDR from Pickup (15 Miles)	20
Travel time From Landfill or TSDR to Pickup Site (15 Miles)	20
Wait time, traffic, etc.	5
Total:	60



Developing a Debris Removal Strategy

Figure 4.1 Temporary Disposal, Storage, and Reduction Site Overview





Developing a Debris Removal Strategy

4.3.1 TDSR Sites Distance Summary

Distance is the greatest factor when determining if there is a need for a TDSR site. Consider the following when making the determination:

- ❑ Deposition of debris **LESS THAN 8 MILES** from debris pickup locations:
 - TDSR sites are not recommended since TDSR sites generally require double handling increasing both cost and labor.
 - The exception is when using TDSR site for incineration or when another volume reduction method can be proven to be more cost effective.
- ❑ Deposition of debris **RANGES FROM 8 TO 15 MILES** from debris pickup locations:
 - Evaluate land use: For urban settings or rural settings where frequently used roads are affected, it may be beneficial to use a TDSR site to quickly remove debris from these areas and stockpile the debris temporarily at a site.
 - For areas that are rural or where major routes are not affected, consider removing debris directly to deposition location.
- ❑ Deposition of debris **GREATER THAN 15 MILES** from debris pickup locations:
 - Unless the area is extremely rural and the road is seldom used, it is likely that multiple TDSR sites and processing may be needed before deposition.

TIP

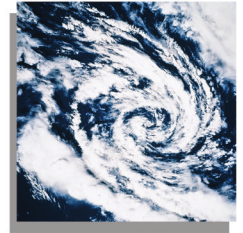
The greatest factor for using a TDSR site is distance. If the landfill is fifteen miles away, the roundtrip from debris site to landfill to debris site may take an hour or more!

TIP

Trips from the initial loading site does not necessarily equal loads to the landfill. Chipping and grinding the woody debris reduces the volume on average of 75%.

4.3.2 Positive and Negative Aspects of Using TDSR Sites

- ❑ TDSR sites may allow the local entity to remove debris from roads and public ROWs quicker than taking it directly to a landfill or other final deposition location.
- ❑ If incinerating woody debris, recycling, or landfills require separation of debris. TDSR sites allow for a central location to perform all these functions.



Developing a Debris Removal Strategy

- ❑ Without any form of volume reduction, a TDSR sites may increase costs significantly.
- ❑ Generally there are additional costs associated with setup and closing TDSR sites.
- ❑ TDSR may often develop the same public perception as a landfill. **NOT IN MY BACKYARD (NIMBY)** philosophy. Public education will likely be required to assure the public that the site is not permanent. It is also important to notify the public of the materials accepted at the site and hours of operation.

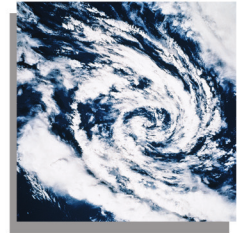
4.3.3 TDSR Site Location Considerations

When evaluating TDSR site locations, there are many factors to evaluate. Below is a list of some key factors, which should be taken into consideration:

- ❑ Land ownership – ideally the site should be owned by the local entity.
- ❑ Access – evaluate access and egress issues of the site.
- ❑ Neighbors – if the site is located next to a residential community keep in mind the “NIMBY” philosophy.
- ❑ Site assessment -- Collect soil and groundwater samples PRIOR to beginning work.
- ❑ Size and planned operations: depending on operations at the site (i.e. temporary storage/separation or incineration and separation), a large site area may be required. Plan the space according to the processing method to ensure sufficient space for:
 - Processing equipment and the trucks to maneuver;
 - Material segregation to avoid contamination; and
 - Materials that require special handling and transportation to a more appropriate recycling or disposal site.

TIP

TDSR total site size is estimated in the H-GAC Regional Storm Debris Management Assessment 2002: Tab D Detailed County and City Debris Estimating Tables



Developing a Debris Removal Strategy



Reality Check: Time

Question:

How long will it take Friendswood, Texas to recover from a Category 3 Hurricane?

The USACE Debris Estimating Model indicates that Friendswood, Texas would have a total of 258,278 cubic yards of debris following a Category 3 Hurricane.

Answer:

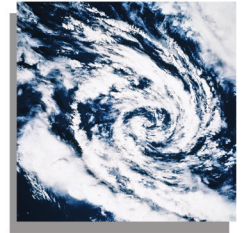
If the landfill is 15 miles away (keeping with the example) and Friendswood uses between 25 and 50 standard 18 cubic yard dump trucks, it will take one to two months.

Table 4.4 Time Required for Debris Removal Based on Number of Trucks

Number of Trucks	Trips Per Day	Total CY/Day	Days Required for Debris Removal
100	10	18,000	14
75	10	13,500	19
50	10	9,000	29
35	10	6,300	41
25	10	4,500	57
15	10	2,700	96

Things to Consider

- Why an 18 cubic yard truck and not a larger truck? Many local entities, especially local Homeowners Associations, have weight restrictions on the size of trucks allowed in their neighborhood. Generally, 18 cubic yard trucks are the maximum allowed by these communities.
- Friendswood is a fairly large community. Why only 25 to 50 trucks? Unless contracts are drawn up ahead of time with a specified number of trucks, **YOU ARE IN COMPETITION WITH EVERYONE ELSE** for these trucks.



Developing a Debris Removal Strategy

4.4 Determine Effective Deposition of Debris

To determine the most effective deposition of debris, it is important to understand how debris is classified. Debris is first classified as either woody debris or C&D debris. These two categories are then further separated into burnable or non-burnable. The USACE Debris Model estimates debris from a hurricane would be comprised of:

- 30 % Woody Debris and
- 70 % C&D; further separated into:
 - 42% Burnable, but requires sorting
 - 5% Soil
 - 15% Metals
 - 38% will require deposition in a landfill

Based upon the USACE Debris Model, up to 72% of debris from a hurricane may be burnable (30% woody + 42% burnable C&D).

Understanding the general makeup of the debris from each local entity is an important factor when determining the most effective deposition for each area. Essentially there are four options for debris deposition:

- Recycling
- Chipping and grinding (mulching)
- Incineration
- Landfill

✓ Generally requires one or more TDSR sites

Another consideration to keep in mind when considering debris deposition is whether contracts will be let using **cubic yards or tons**. Generally the driver for cubic yards versus tons is how the landfill measures waste. If the landfill does not have the ability to weigh debris then

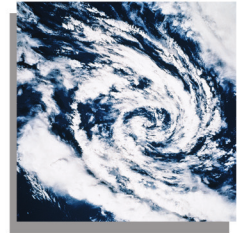
costs will be based upon cubic yards. This is an important consideration when considering debris deposition. If waste deposition is based upon total volume, it may prove to be much more cost effective to reduce the overall volume of the debris by recycling, chipping and grinding, or incineration PRIOR to disposal.

TIP

FEMA prefers that a local entity use tons versus cubic yards. There is less room for interpretation when using tons.

TIP

Recycling may offer the local entity an opportunity to recover costs in addition to reducing cost for landfill non-burnable debris.



Developing a Debris Removal Strategy

4.4.1 Recycling

Recycling is an excellent option when it has been researched and adopted as part of the pre-disaster preparation. It may also work following a disaster if identified early in the recovery stage.

Hurricanes commonly have four products that may lend themselves to recycling:

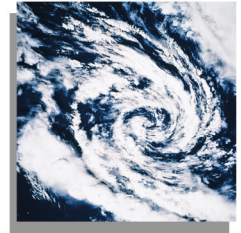
Metals	<p>Approximately 15% of debris generated from a hurricane will be comprised of metal. Common sources of metal associated with a hurricane are metal frames and siding associated with both mobile homes and buildings. Metal may be sold to recoup costs or may also be salvaged by local firms, which may offer to pick up metals once the debris pile is separated.</p>
Soil	<p>Debris operations often pick up large portions of soil which when combined with the other organic material in the debris pile may be used to replace topsoil or once tested may be used for cover at local landfills.</p>
Wood	<p>Wood debris from parks and rural areas may be ground or chipped into mulch.</p>
Construction Material	<p>Construction material including concrete block or asphalt material may be ground and used for road base, landfill cover, riprap, or other purposes.</p>

TIP

Due to the amount of mixed C&D found in urban areas, it is likely that woody debris will require separation prior to recycling for mulch.

Positive: Recycling may present an opportunity to reduce the overall cost of debris operation.

Negative: Contracts must be carefully written and monitored to ensure that recyclers comply with local, State, and Federal regulations.



Developing a Debris Removal Strategy

4.4.2 Grinding and Chipping

Grinding and chipping is a good method for volume reduction, averaging a 75% reduction. Ground and chipped clean woody debris can be converted to mulch and used to replenish topsoil or recycled.

Mulching is best to do when the loading location is from one of the following:

- Park
- Stream or river channels
- Rural areas

Debris from parks and stream/river channels often lends itself to grinding and chipping in place. Depending on the quality, the resulting mulch may be used for topsoil recovery.

In urban settings, woody debris that has been reduced by chipping, grinding, and/or mulching often is not usable or recyclable unless generated in a park since it may have a large number of contaminants (i.e. shingles, glass, plastics, dirt, nails, or HHW).

Grinding and chipping may also be used to reduce the overall volume of both woody and mixed C&D prior to going to a landfill. When performed at a central TDSR site, this step reduces the amount of equipment and labor needed to move the debris from the site to a landfill, resulting in fewer trips.

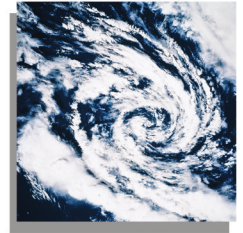
TIP

Volume Reduction: 4 Cubic Yards of woody debris is equivalent to approximately 1 Cubic Yard of mulch.

TIP

If working under a Declared Disaster (FEMA is involved) . . .

- Eligible Area Only includes, areas that are improved and maintained by the entity or where failure to eliminate or reduce debris will result in threat to life/public health or significant damage to improved property.
- Trees should be cut off at the base, leaving stumps. Tree stump removal may not be eligible for FEMA assistance.
- Pruning or shaping trees and other landscaping activities are generally considered to be an aesthetics issue and are not eligible.



Developing a Debris Removal Strategy

4.4.3 Incineration

When landfills are greater than 15 miles away, incineration may be the most effective volume reduction method. In addition, it may offer local entities the most cost effective method for debris deposition since it can reduce 95% of the total volume of debris, leaving only the ash for disposal.

Before burning, it is extremely important that the debris is carefully separated into burnable and non-burnable materials. In both rural and urban areas, household hazardous waste (HHW) or small heating oil/petroleum tanks are frequently mixed in with debris and are not burnable. Once separated, there are two primary burning methods: controlled open burning and air curtain pit burning.

Uncontrolled open burning is not recommended. Below is a brief discussion on each method.

TIP

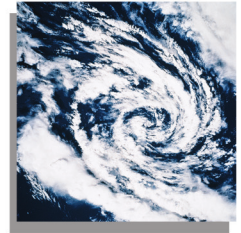
Check into local ordinances and with the Texas Commission on Environmental Quality (TCEQ) to determine if it is feasible to incinerate debris. Harris and Galveston County are both within non-attainment areas. Permits may be issued at the discretion of the TCEQ in a time of emergency.

Controlled Open Burning

- This is most effective in rural areas when used for reducing woody debris.
- With approval from the Department of Agriculture and county agricultural agent, ash may be recycled as a soil additive.
- Controlled open burning is not suitable for burning mixed debris, such as treated lumber, poles, nails, bolts, and metals.
- Negative:** There are usually environmental and local concerns associated with air pollution, since this type of burning has no smoke control.

Air Curtain Pit Burning

- Air curtain pit incineration substantially reduces the environmental concerns of controlled open burning.
- How it works: blower units are placed adjacent to a pit (the pit must be above the water table). The blower units deliver air at a predetermined and sufficient velocity to provide a “curtain effect”, which contains smoke and feeds air to the fire in the pit.



Developing a Debris Removal Strategy

- ❑ Air Curtains may be custom built at the site or portable air curtain incinerators may be used. The only difference is that portable incinerators utilize a pre-manufactured pit in lieu of an onsite constructed earth/ limestone pit. To minimize liabilities to the local entity, ensure training on equipment is sufficient. Consider using a contractor to provide and operate air curtain.
- ❑ Key considerations:
 - There are no industrial standards for air curtain pit incinerator operators. It is a custom setup.
 - Pits must be constructed of highly compacted material that will retain their shape despite temperatures over 2,200 degrees Fahrenheit.
 - Public awareness and education will likely be required.

Figure 4.2 Air Curtain Operations

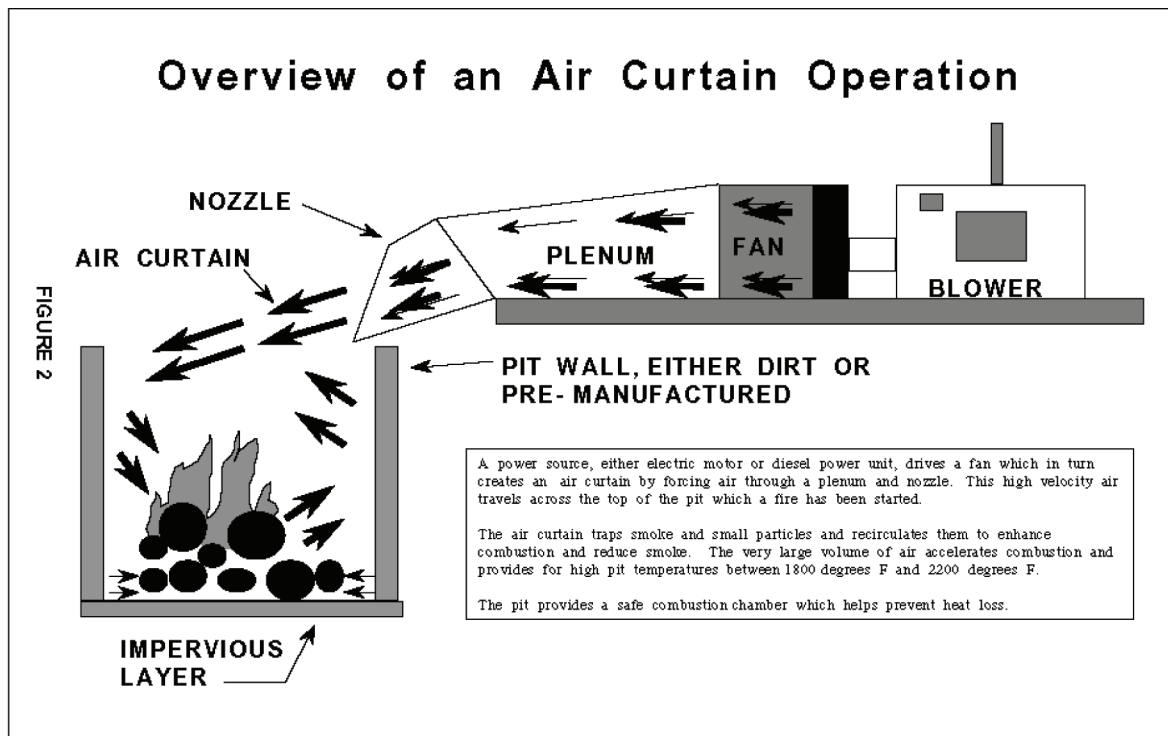
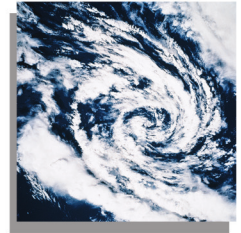


Figure 2 from Appendix H, Scope of Work Example, FEMA Public Assistance, Debris Management Guide, FEMA 325



Developing a Debris Removal Strategy

4.4.4 Landfill

As described previously about TDSR sites in Section 4.3, the number one factor in determining the primary deposition for debris is distance. If the local entity has sufficient access to equipment and is within 8 miles of a landfill that accepts woody and/or C&D debris, taking the debris directly to the landfill may be the most efficient and cost effective method.

Landfills also may be an effective method when combined with one of the volume reduction methods outlined above (recycling, chipping and grinding, or incineration). Except in rare cases, some portion of debris generated will require deposition in a landfill. As a result, it is important to refer to the list of landfills in your vicinity that was generated as part of Section 4.2 Identify Resource for Waste Deposition.

There are generally two costs associated with landfill deposition. The first cost is the debris removal process, which may involve TDSR sites and/or volume reduction. The second cost is tipping fees at the landfill. The tipping fee is a fee charged by the landfill based on weight or volume of debris deposited to cover their operating and maintenance costs. Based upon a survey conducted by Reed, Stowe & Yanke, LLC of Texas cities in 2002 regarding multiple municipal solid waste issues the **average tipping fee for the H-GAC area is \$23 per ton.**

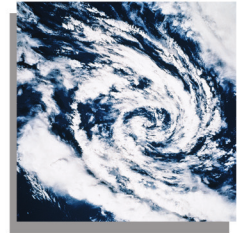
4.5 Assess Internal Capabilities and the Need for Debris Contractors

After assessing the type and amount of debris and method of reduction and disposal, the next concern is how to complete day-to-day activities and debris removal with existing staff. Review Figure 4.3 and the following bullets to determine if your local government should use internal resources or hire a contractor:

- How long will it take to remove the debris?
- If using internal personnel and equipment, consider how the normal day-to-day workload will be affected.
- Identify staff and equipment that would be required to perform debris operations. In addition to the equipment, this includes management, operators, and debris monitors. Does the local entity have enough dump trucks and earth moving equipment to respond quickly to a disaster? Two limiting factors are the capacity and number of dump trucks.

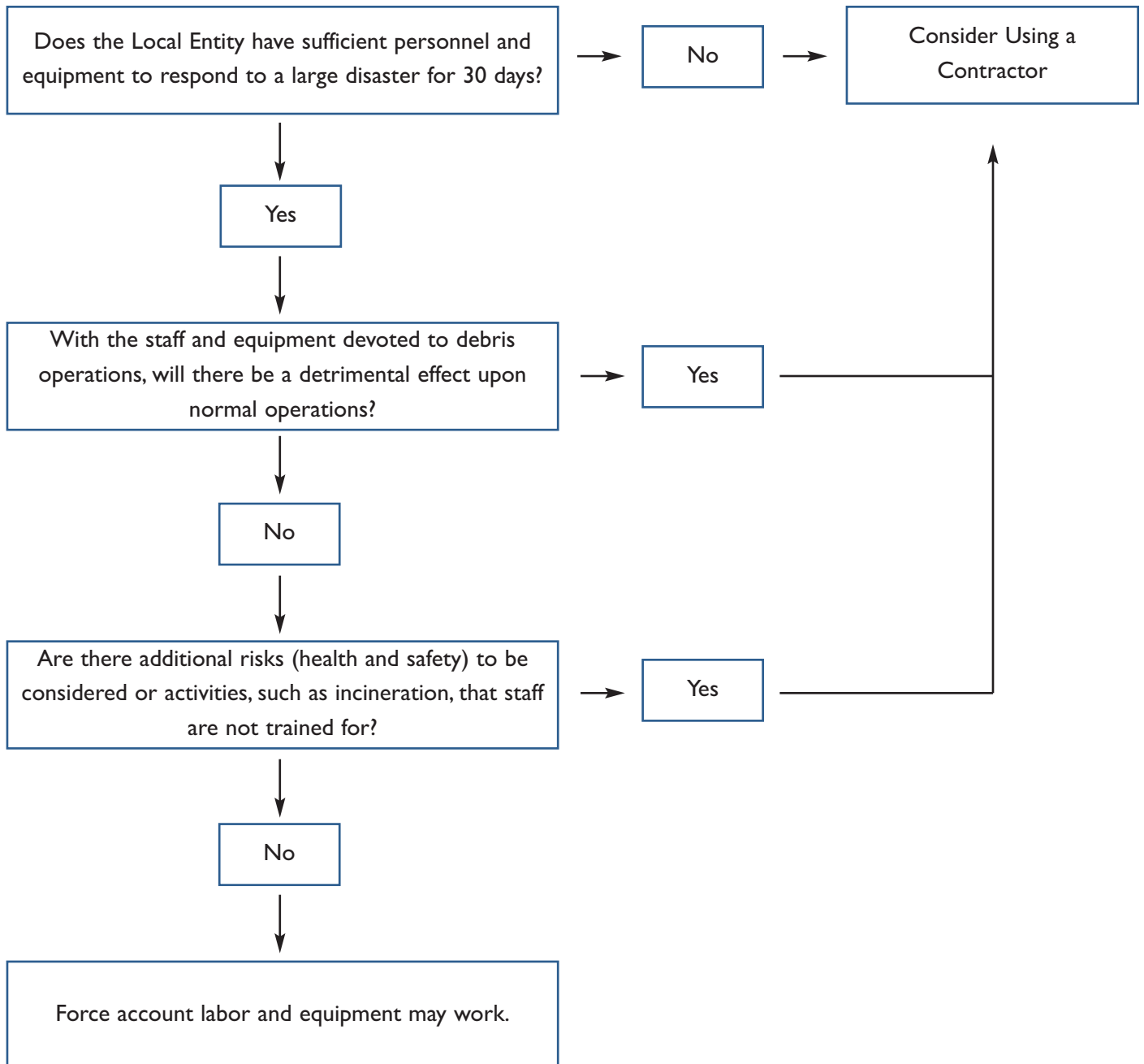
TIP

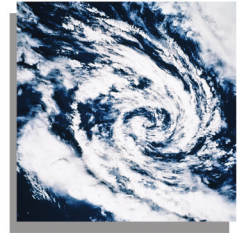
Debris operations following a Category 1 and 2 Hurricane may take up to three months!



Developing a Debris Removal Strategy

Figure 4.3 Do You Need to Use a Contractor?





Developing a Debris Removal Strategy

- It is likely that if a hurricane strikes the Texas coastline the President of the United States will issue a disaster declaration. It is important to consider FEMA guidelines when assessing internal capabilities. Some basic FEMA guidelines:
 - Contracting – After the first 70 hours (7 – 10 hour days) following the disaster, FEMA encourages the use of unit price contracts and discourages any time and material contracts. A sample unit price contract scope of work is located on the attached CD. FEMA may review the contract and contracting process to determine if it meets State and local regulations. Appendix D contains Texas State procurement guidelines for competitive bidding.
 - Force Account Labor – Only overtime for nonexempt employees is eligible. The first 40 hours (depending on pay policy) is generally not reimbursable. Exempt employees are not eligible for overtime unless stated in the internal policy.
 - Force Account Equipment – Internal equipment time is eligible for both regular and overtime use. FEMA has established equipment rates that can be found at http://www.fema.gov/rrr/pal/fin_eq_rates.shtm. The FEMA equipment rates include both wear and tear plus the cost of fuel. Maintain a list of internal equipment to include type, capacity, horsepower, etc.
 - Supplies -- Supplies that are purchased or obtained from the with entity/applicant's stock and used during performance of work may be eligible. Invoices or receipts should be maintained to show expense.
 - Temporary Employees – Several debris operation tasks, such as debris monitors, may be performed by temporary employees. Unlike permanent employees, both the temporary employees' regular and overtime hours are eligible.
 - Donated Resources -- Volunteer labor and donated equipment may be used to offset the state and local cost share for emergency work. Maintain a detailed list of volunteers, equipment type, and hours used.

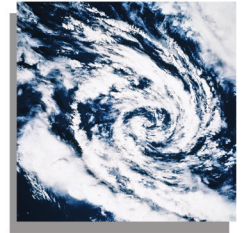
TIP

Temporary employees offer a good public relations opportunity. Local residents who've lost their jobs due to the hurricane may qualify for temporary positions.



Reality Check: Dump Truck Check

One 18 cubic yard dump truck (standard size) making 10 trips a day can only remove 180 cubic yards of debris a day. Compare this to projected amount of debris and number of trucks owned by the local entity. Will it be enough?



Developing a Debris Removal Strategy

4.6 Accounting -- Pay Policy

When assessing your internal capabilities it is always good policy to review your pay policy with an eye towards how the local entity will manage a large-scale storm debris effort. There are two drivers here: cost and employee relations.

Managers generally are exempt employees. Exempt employees typically do not receive overtime. Following a disaster, managers are generally actively assisting in the recovery efforts and work 60 to 80 hour weeks. Does the pay policy address compensation for managers? For example, will compensation time be offered or will an exception be made allowing exempt employees to receive straight pay for time worked?

Does the pay policy address “lockdown” for emergency operations personnel? For example, what if the fire department is identified as the department to remove debris and downed lines from critical roads during the first 48 hours following a disaster? The fire department staff may be on an 18-hour workday with six hours of mandatory rest where staff must remain on-site in case of emergency. How does the pay policy address the six hours of rest?

TIP

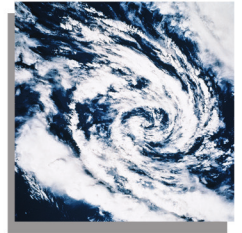
If disaster is declared, FEMA is only able to compensate based upon the local entity’s pay policy.

Review the overtime policy. Be sure the policy reflects current practices.

4.7 Other Pre-Disaster Preparation Considerations

4.7.1 Funding Options

For a Category 3 hurricane, it is likely that the local entity is looking at an expense of more than two million dollars. It is important to consider if private funds or loans will be available to cover the costs. It is not recommended to count on FEMA for 100% funding assistance. FEMA reimbursement is generally provided following the submittal of the Project Worksheet. Contractors must be paid prior to requesting reimbursement from FEMA. In rare cases, Immediate Needs Funding (INF) may be offered, but it is the exception.

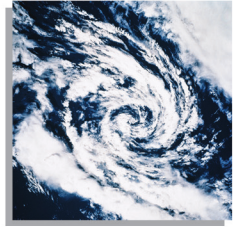


Developing a Debris Removal Strategy

4.7.2 Mutual Aid Agreements

Mutual aid agreements (MAA) are another tool that can be used by a local government if the need for equipment and labor exceeds the entity's capability. Several government entities have existing mutual aid agreements (MAA) in place with their neighboring communities. MAA are often employed to assist with emergency operations, such as the clearing of roads. An example would be a county-owned road that is very close to a city's boundaries. It may be beneficial for the city to remove debris for 2 to 3 miles outside the city limits to allow for access to a highway or other main access routes. A written agreement between the city and the county may exist as an MAA. Keep in mind that prior to clearing the road, when using the above example, the county must request assistance through the MAA by the city. If this is not done formally, funding under the FEMA program may be in jeopardy.

Developing a debris removal strategy prior to hurricane season can save time and money. Section 9.0 Pulling It All Together, is a simple guide to developing a debris management team and removal strategy. See the timeline in the following section and the checklists in Appendices A and B to assist in setting a schedule for the strategy development.

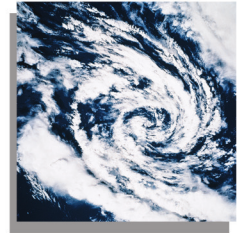


5.0 Timeline

Creating a schedule is useful to keeping the debris management team focused. Figure 5.1 is a timeline that gives a general overview of the months in which certain activities should occur. Attached in Appendices A and B is a group of checklists, related to section 4.0 Developing a Debris Removal Strategy, that can be used as a guide in organizing activities to be completed by the debris management team. Set up a special calendar and timeline to help the debris management team set goals and review progress made on tasks. When reviewing the checklists, note tasks that are critical to the completion of other tasks. These tasks, known as critical path tasks, should be completed early on in the preparedness phase. Set goals for each month and inform each team member what is expected of them that month. Continue to follow up with monthly meetings.

Figure 5.1 Overview of Timeline

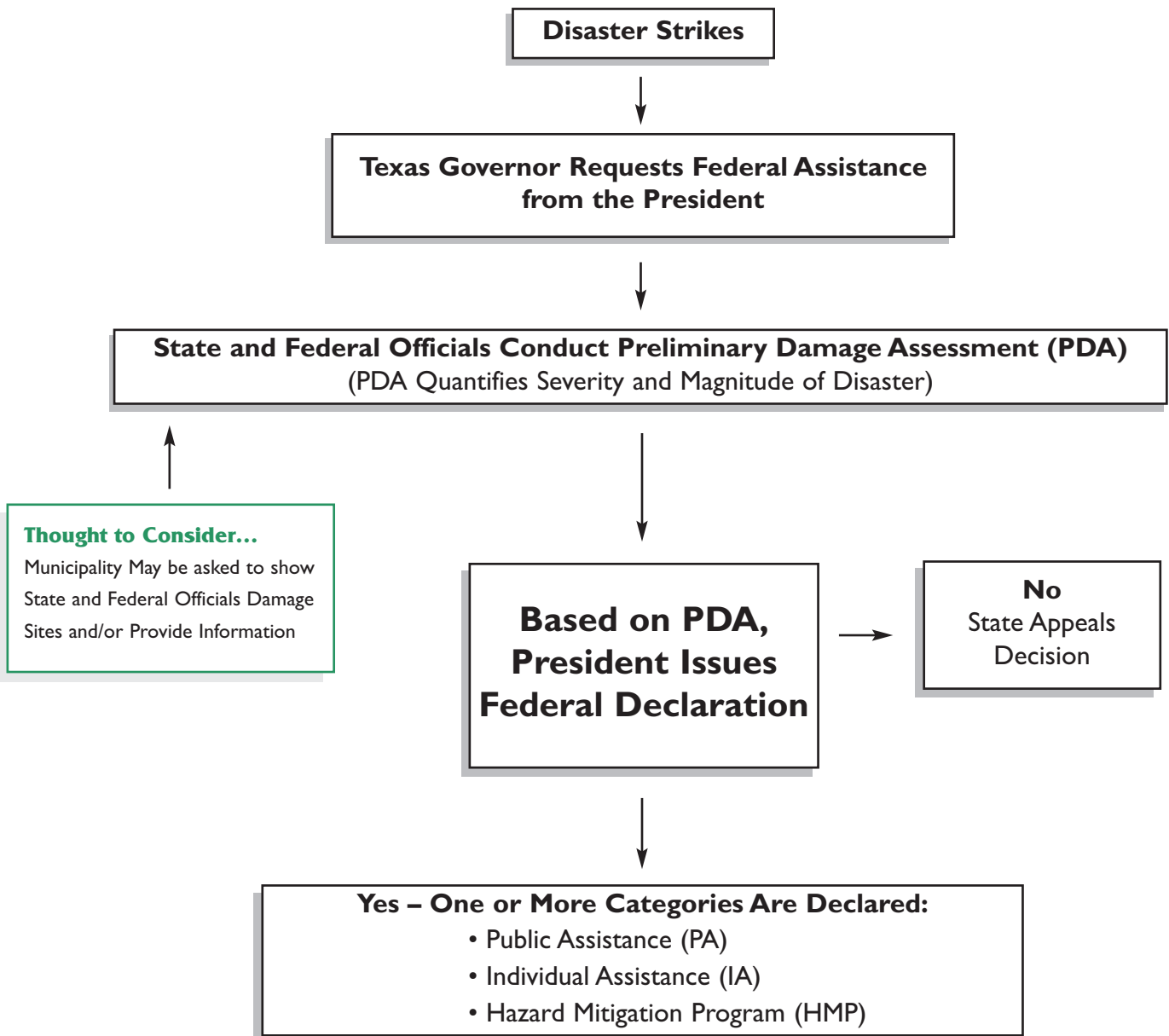


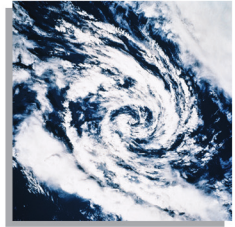


6.0 Overview of the FEMA Declaration and Public Assistance Process

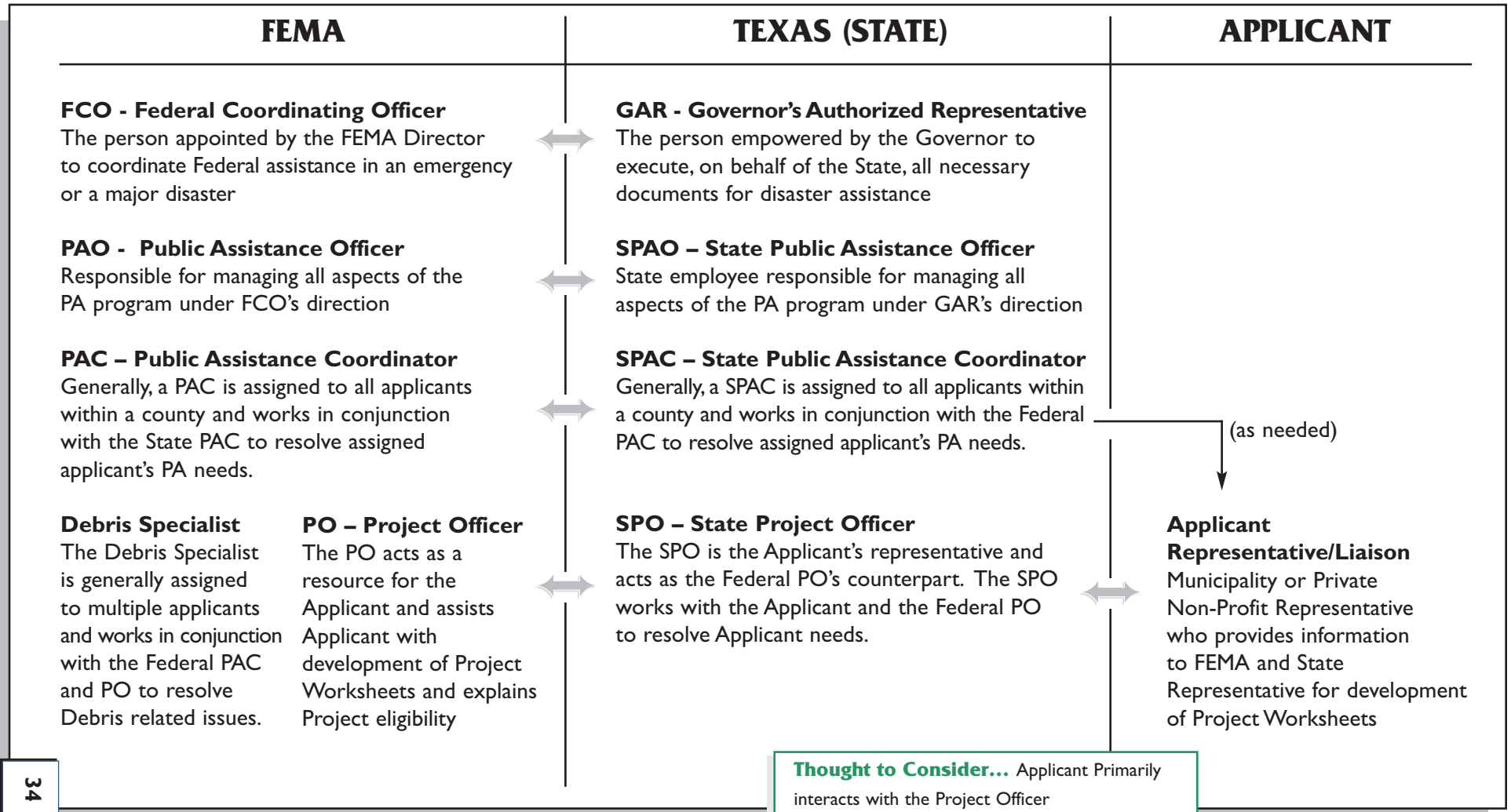
We NEED Help – Where is FEMA

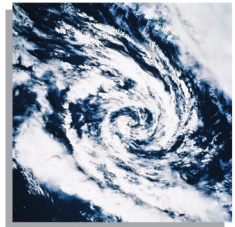
The Federal Declaration Process





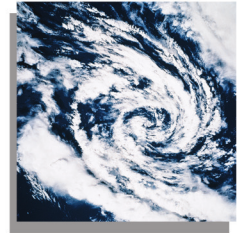
FEMA, State and Applicant Roles





PA Program Process-Federal, State, and Municipality (Applicant)

FEDERAL	STATE	APPLICANT
FCO and PAO Appointed FEMA is Deployed	State Notified of Declaration State Appoints GAR and State PAO	
Federal PAO and State PAO Coordinate Applicant Briefings		
Federal PAO and State PAO Conduct Applicant Briefing <i>(State and Federal PACs may assist)</i>		Attend Applicant Briefing Submit Request for Public Assistance (RPA)
Federal PAO assigns PAC	State PAO assigns State PAC	
Federal PAC assigns PO	State PAC assigns State PO	
Federal and State PACs and POs conduct Kickoff Meeting		Applicant Attends Kickoff Meeting <i>* Be Prepared to Submit List of Damages</i>



7.0 Understanding the Public Assistance Process

The Public Assistance (PA) Program is a grant program that gives money to state and local governments and some non-profit organizations in order to respond to a disaster, recover from the impact and mitigate future occurrences. It is governed by a hierarchy of statutes, regulations, and policies, which include the Stafford Act, 44 Code of Federal Regulations (CFR) Part 206, and policies that have been issued by FEMA Headquarters. These regulations and policies govern what is and is not eligible under the FEMA Program. FEMA documents eligible and ineligible expenses on a form known as a Project Worksheet (PW). The PW relies heavily on local documentation.

7.1 Eligibility? What is that?

Essentially, **eligibility boils down to what the federal government considers reimbursable costs**. Not all costs incurred by the local entity are considered eligible under the PA Program. Eligible Costs are costs that are:

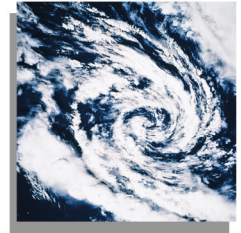
- Reasonable and necessary** to accomplish eligible work (beware of price gauging! FEMA will compare costs in the local area to determine what is considered to be a reasonable cost);
- Comply with Federal, State, and Local procurement requirements; and
- Costs that exist **AFTER** insurance proceeds, salvage values, and other credits are assessed.

What is eligible and what is not eligible is presented in several FEMA Public Assistance Publications including:

- Applicant's Handbook
- Public Assistance Guide
- Policy Digest

These guides can be viewed on the attached CD in Appendix D. A list of websites where the most current addition of these resources can be downloaded and additional resources specific to debris are provided in Appendix C.

Disaster related work is considered either Emergency Work or Permanent Work, which are divided into a total of seven categories of work, as seen in Table 7.1.



Understanding the Public Assistance Process

Table 7.1 Categories of Work

Category		Type of Work
Emergency Work	A	Debris Removal
	B	Emergency Protective Measures
Permanent Work	C	Roads and Bridges
	D	Water Control Facilities
	E	Building and Equipment
	F	Utilities
	G	Parks, Recreational Facilities, and Other Items

There are several differences associated with eligibility for Emergency Work and Permanent Work. The greatest difference between Emergency Work and Permanent Work is eligibility of force account labor, work performed by the local entity. For clarification purposes, force account equipment is also shown in the table below.

	Force Account Labor	Force Account Equipment
Emergency Work:	Overtime ONLY	Regular Time + Overtime
Permanent Work:	Regular Time + Overtime	Regular Time + Overtime

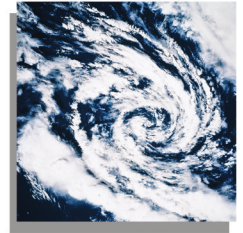
7.2 Overview of Eligibility and Debris

All aspects of debris operations are considered Emergency Work. Below is an overview of key eligibility issues:

- Only overtime is eligible for force account labor.
- Pay policy regarding when exempt and nonexempt employees are eligible for overtime is strictly enforced.

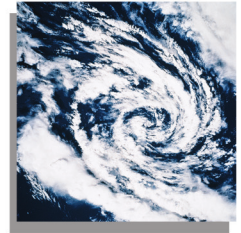
TIP

If a local government decides to use force account labor for debris removal, normal day-to-day activities are delayed, which can be costly. Temporary labor for debris removal frees up staff time and is an eligible cost.



Understanding the Public Assistance Process

- C&D debris from demolished homes is **INELIGIBLE** unless approved in advance by FEMA.
- Debris blocking streets and highways is **ELIGIBLE**. Debris blocking streets and highways are typically a combination of woody and C&D. Generally mixed C&D found on the streets, which includes shingles, glass, plastic, and woody debris is considered eligible.
- C&D created from contractors working to restore a home or public facility is **INELIGIBLE**. Why? This cost is covered by insurance – no double dipping!
- Debris blocking a natural stream or flood channel is **ONLY ELIGIBLE WHEN** it may cause flooding from a future storm. Ideally, document these cases **BEFORE** removing debris by taking pictures and writing a description.
- Removal of fallen trees in unused forested, wilderness areas, and areas that are not adjacent to a park path (don't go too far off the beaten path) are **INELIGIBLE**.
- In parks and recreational areas, the temptation is often there to stake trees and trim/shape trees and shrubberies. Both are **INELIGIBLE**. Staking and trimming/shaping trees are considered to be aesthetics. If you decide to go ahead with staking or trimming/shaping trees, clearly mark on the daily activity reports (DAR) and debris load tickets that which is being removed. If the FEMA monitor sees you, they may declare other loads ineligible if not properly documented.
- Stump Grinding is **INELIGIBLE**, unless leaving the stump is a threat to property or access. Take a photo to document your case .
- Debris removed from private property including commercial property and residential property is **INELIGIBLE**. Debris may only be removed from the public right-of-way (ROW).
- Federal Highway Administration (FHWA) Roads and Texas State roads may not be covered under the FEMA Program. Generally, these roads are covered under a separate program. While additional paperwork is required, this is usually positive since reimbursement under these programs may be up to 100% as opposed to the FEMA standard of 75% federal share and 25% State/Local share.
- Under the FEMA Program, tree replacement is **INELIGIBLE**.



Understanding the Public Assistance Process

7.3 What is a Project Worksheet (PW)?

The PW is a tool used to record and document the scope of work, the estimated or actual costs necessary to complete the work, and to present the necessary documentation to justify the estimated or actual costs. The PW is essentially a request for reimbursement under the FEMA Program for Eligible damages. A FEMA Project Officer or the applicant may prepare the PW.

In order to create the PW, a large amount of documentation is required. Without the required documentation, reimbursement becomes challenging. A Debris PW generally is comprised of 3 components, including load ticket validation, accounting, and contract services.

Load Ticket Validation

- Copy of each load ticket
- Certified truck list
- List of private roads within the municipality
- List of gated communities with road list within each community in the municipality
- List of Federal Highway Administration (FHWA) roads within the municipality

TIP

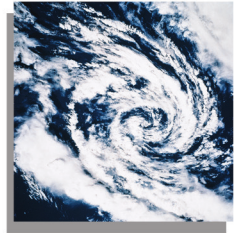
No Documentation = No Reimbursement
FEMA and TXDOT will try to work with you the best they can. Without documentation their hands may be tied.

Accounting

- Copy of pay policy
- Copy of timesheets
- Copy of daily activity logs (labor and equipment)
- Receipts from related purchases including meals, safety equipment, etc.
- Receipts/invoices from vendors used to rent equipment

TIP

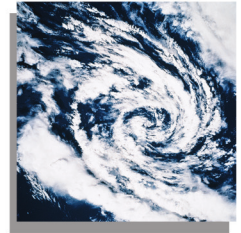
While some photos of the debris may be helpful, ultimately the documentation of debris is the load ticket.
Focus photographing efforts on damaged structures, which requires photographic documentation. For structures, ideally take photos from all four sides. One side of roof = 25% of a roof, which may mean only 25% reimbursement.



Understanding the Public Assistance Process

Contract Services

- Contracts for debris removal, monitors, and reduction method (if applicable)
- Copies of invoices from contractors
- Copies of cancelled checks
- For work to be completed or on-going work, a work order or purchase order may be required.



FEDERAL EMERGENCY MANAGEMENT AGENCY

PROJECT WORKSHEET

O.M.B. No. 3067-0151

Expires April 30, 2001

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 30 minutes. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and submitting the forms. You are not required to respond to this collection of information unless a valid OMB control number is displayed in the upper right corner of the forms. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0151). **NOTE:** Do not send your completed form to this address.

DECLARATION NO. FEMA - ##### DR - TX	PROJECT NO. DEBRIS-1	FIPS NO. ###-#####-##	DATE 06/07/05	CATEGORY A
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DAMAGED FACILITY Countywide / Multiple Locations within the Municipality	WORK COMPLETE AS OF: 08/01/05: 90 %%
---	---

APPLICANT Municipal Name – “City of Bluebonnet”	COUNTY County Name
--	-----------------------

LOCATION Multiple Locations within the Municipality / Multiple Locations within Bluebonnet	LATITUDE ##.####	LONGITUDE ##.####
---	---------------------	----------------------

DAMAGE DESCRIPTION AND DIMENSIONS
Heavy winds from Hurricane Windy damaged and destroyed trees, limbs and structures throughout “Bluebonnet.” As a result of this damage, storm debris was scattered on county roads, streets and public property creating a threat to life, health and safety.

SCOPE OF WORK
WORK COMPLETED:
Storm-generated debris was removed from roadway rights-of-way and public facilities within Bluebonnet.
70 Hours following Hurricane Windy

- o Removal of vegetative/woody debris performed by force account labor and equipment
- o Jimmy Dean’s Hauling removed 27,000 CY using pre-disaster time and material contract
- o Disposal of 25,920 CY of eligible Woody Debris (no volume reduction) at Dave Mathew’s County Landfill

Debris Removal 70 hours + (long term operation) following Hurricane Windy

- o Debris management oversight by force account labor and equipment
- o Debris monitoring performed by temporary hires of the City of Bluebonnet
- o Removal, transportation, temporary storage, and separation of 134,140 CY of **eligible** Woody and C/D debris performed by Debris R Us
- o Volume reduction of separated woody debris at permitted TSDR site by grinding 65,000 CY of woody debris
- o Disposal of 16,250 CY of **eligible** mulched Woody Debris (Validated by Debris-to-Mulch Conversion Factor of 4 CY of debris per 1 cy of mulch) and 69,140 CY of **eligible** C/D at Dave Mathew’s County Landfill
- o Force Account Materials for Health and Safety Equipment for temporary hires

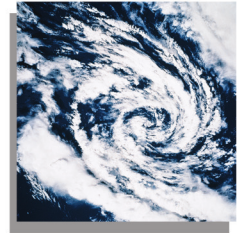
--- CONTINUED ---

Does the Scope of Work change the pre-disaster conditions at the site? Yes No
 Special Considerations issues included? Yes No Hazard Mitigation proposal included? Yes No
 Is there insurance coverage on this facility? Yes No

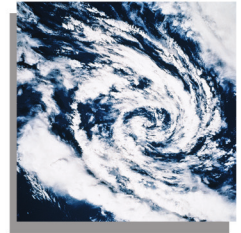
PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
WORK COMPLETED					
1	9007	Force Account Labor	1 / EA	\$4,557.06	\$4,557.06
2	9008	Force Account Equipment	1 / EA	\$12,888.30	\$12,888.30
3	9003	Contract Services – Jimmy Dean’s Hauling	1 / EA	\$1,347,840.00	\$1,347,840.00
4	9003	Contract Services – Landfill Disposal using pre-disaster contract	25,920/ CY	\$25.00	\$648,000.00
5	2012	Temporary Hire Employee	6,000 / HR	\$9.00	\$54,000.00
6	9003	Contract Services – Removal, Transport, Temp Storage, & Separation	134,140 / CY	\$12.00	\$1,609,680.00
7	9003	Contract Services – Volume Reduction by Grinding	16,250/ CY	\$3.50	\$56,875.00
8	9003	Contract Services – Landfill Disposal (including tipping fees)	85,390 / CY	23.00	\$1,963,970.00
9	9009	Force Account Materials	1 / EA	1,000	\$1,000.00
				TOTAL COST	\$5,698,810.36

PREPARED BY:	TITLE:	APPLICANT REPRESENTATIVE:	APPLICANT TITLE:	DATE:
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FEDERAL EMERGENCY MANAGEMENT AGENCY PROJECT WORKSHEET – Damage Description and Scope of Work Continuation Sheet				O.M.B. No. 3067-0151 Expires April 30, 2001	
DECLARATION NO. FEMA - ##### DR - TX	PROJECT NO. DEBRIS-1	FIPS NO. ###-#####-##	DATE 06/07/05	CATEGORY A	
DAMAGED FACILITY Countywide / Multiple Locations within the Municipality					
APPLICANT Municipal Name – “Bluebonnet”			COUNTY County Name		
TCEQ contacted and TDSRS have been permitted – Copy of permit attached					
Contract Work was performed by Debris R Us and Big Daddy C/D. Both contracts are fixed unit price and contracts are on file at DFO. Applicant monitored all contract work in accordance with FEMA guidelines.					
Calculation of Eligible Cubic Yards:					
Jimmy Dean - Time and Material Contract (first 70 hours following hurricane)					
Total CY Submitted	27,000	Contractor Invoice		\$	1,404,000.00
Less FHWA for DOT	540	FHWA for DOT		\$	28,080.00
Less Private Roads	540	Private Roads		\$	28,080.00
Less Truck Capacity Discrepancies	0	Other Ineligibles		\$	-
Less FEMA Tower Deductions	0				
Less FEMA Field Deductions	0				
Less Other Ineligible (<i>ticket discrepancies</i>)	0				
Total Ineligible	1,080	Total Ineligible		\$	56,160.00
FEMA Eligible CY	25,920				
Contract Invoice Divided by CY	\$52.00				
Total FEMA Eligible	\$1,347,840.00	FEMA Eligible		\$	1,347,840.00
Debris R Us - Fixed Unit Price Contract for Long-Term Debris Removal					
Total CY Submitted	231,276	Contractor Invoice		\$	2,775,312.00
Less FHWA for DOT	34,691	FHWA for DOT		\$	416,296.80
Less Private Roads	23,128	Private Roads		\$	277,531.20
Less Truck Capacity Discrepancies	4,626	Other Ineligibles		\$	471,803.04
Less FEMA Tower Deductions	27,753				
Less FEMA Field Deductions	3,469				
Less Other Ineligible (<i>ticket discrepancies</i>)	3,469				
Total Ineligible	97,136	Total Ineligible		\$	1,165,631.04
FEMA Eligible CY	134,140				
Contract Price Per CY	\$12.00				
Total FEMA Eligible	\$1,609,680.96	FEMA Eligible		\$	1,609,680.96
<div style="border: 1px solid green; padding: 5px; display: inline-block;"> <p>Thought to Consider . . . A large portion of the FEMA Ineligible is FHWA Roads. Debris removed from FHWA roads are generally reimbursed by TX DOT. However, there is still \$777,414 of FEMA Ineligible – OUCH!</p> </div>					
PREPARED BY: Project Officer's Name or Municipal Representative					



Understanding the Public Assistance Process

7.4 Components of the Project Worksheet

For debris, there are generally three possible components of the Project Worksheet:

- Load Ticket and Load Ticket Validation
- Force Account Labor and Equipment
- Contract Services

7.4.1 The Load Ticket

The primary piece of documentation used to develop the PW is the **LOAD TICKET!**

At a minimum, the Load Ticket must include the following information:

Ticket Number	Date	Contractor Name/Number
Truck Number	Truck Capacity	Validated Volume
Pickup Address	Debris Classification	Disposal Site
Site Departure Time	Dump Arrival Time	

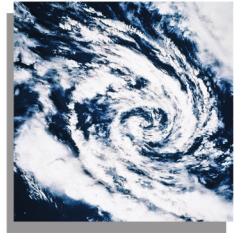
Example load tickets are depicted in Figures 7.1 and 7.2.

Helpful Tips for Managing the Load Ticket

1. Data Management – Designate one person to manage the load ticket data to ensure that no data is lost. Keep in mind that the load ticket is essentially the invoice to FEMA, TXDOT, and FHWA.
2. Use Pre-Printed Sequential Load Tickets - This will enable the data manager to easily identify missing tickets and minimize duplicate tickets.
3. Debris Pickup Location/Site Address
 - Site addresses should show a street range or intersection. This becomes extremely important for identifying roads managed by the Federal Highway Administration (FHWA), private communities, and gated communities.
 - The first and subsequent passes along Federal-Aid Roads may be reimbursed by TXDOT, not FEMA. The FHWA may cover an entire road or only sections of the road.
 - If collecting from a public ROW adjacent to a private or gated community (apartment complex), the **address should ALWAYS be the public ROW street name**. Debris removal from gated or private community is ineligible under the FEMA program.
4. Press Hard – Use a ballpoint pen and press hard, so that the written data goes through each copy. The fourth copy goes to FEMA.

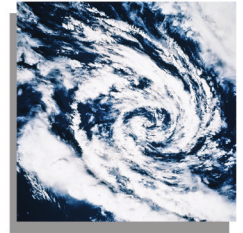
TIP

Load tickets must be retained for three years following close out. Close out may take anywhere from one to 10 years after a disaster.



Understanding the Public Assistance Process

5. Applicant Field Logs – Municipal field monitors should maintain a basic log that mirrors information typically included in the FEMA field logs.
6. Stumps and Root Balls – Mark on the ticket if a root ball or stump is included in the load. It is helpful if the applicant's logs provide a rational explanation or additional location information. Keep in mind the following when looking at stumps and root balls:
 - Root balls or trees that have been knocked over with exposed roots are eligible. Pictures are recommended for documenting. Trees should be cut off at the base
 - Stump removal and grinding is only eligible when the stump creates a hazardous condition (i.e. in the middle of public ROW).



Understanding the Public Assistance Process

Figure 7.1 Load Ticket

NO #####			
Company	MUNICIPAL NAME		Date DATE
Contractor	CONTRACTOR NAME		Contract # _____
Truck #	B123	Truck Capacity (cy) or Tare _____ (tons)	30 cy
License #	BZI K91	Driver	JOHN SMITH
DEBRIS INFORMATION / LOADING			
Address	PICKUP LOCATION _____		
Debris Classification	<input type="checkbox"/> Woody <input type="checkbox"/> C& D <input type="checkbox"/> Other		
Loading Site Monitor:	Print Name Keri Malone	Signature Keri Malone	
Departure Time:		A.M.	P.M.
DEBRIS DISPOSAL			
Disposal Site:	DISPOSAL SITE OR TDSR SITE		
Disposal Site Monitor:	Print Name John Hancock	Signature John Hancock	
Departure Time:		A.M.	P.M.
Truck Capacity (percentage for cy) or Load Size (ton)	90%		
Comments	_____ _____		
Original: Municipality	Yellow: Contractor		
Pink: Driver	Gold: FEMA		

TIP:

FEMA or FEMA representative **MUST** certify truck/bin **PRIOR** to use. A placard with the Truck # is then attached to the vehicle.

TIP:

Address should be a street range (ie. 200-400 Mulberry Lane)
If collecting from the Public ROW adjacent to a private/gated community, address should be name of Public ROW Street

TIP:

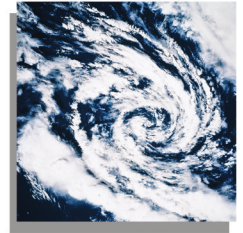
Times are evaluated in field for contractor fraud.

TIP:

The Load Ticket must be validated by the Disposal Site Monitor (usually a FEMA monitor).

While this load ticket has the required fields, it is not endorsed by FEMA or other Agency. Use at your own risk.

Warning: Existing Load Tickets may not have the required data fields. The following example does NOT include several required FEMA fields.



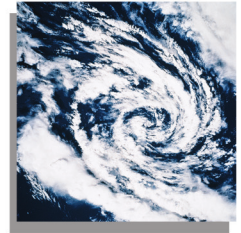
Understanding the Public Assistance Process

Figure 7.2 Example Blank Waste Management (WM) Load Ticket

INVOICE					
N ^o #####					
WM-PASADENA					
3520 Pansy			Phone: 281-487-5000		
Pasadena, TX 77505			Fax: 281-998-1580		
Company	MUNICIPALITY NAME		Date	DATE	
Address	PICKUP LOCATION		TWOB		
Control No. & Location					
Pick Up	Box #	Size			
Delivery	Box #	Size			
Truck #	#####	Trailer #	LICENSE #	Driver	NAME
Disposal Site	DISPOSAL SITE OR TDSR SITE				
Time in Plant	00:00	a.m.	Time in landfill	00:00	a.m.
		p.m.			p.m.
Time out of Plant	00:00	a.m.	Time out of landfill	00:00	a.m.
		p.m.			p.m.
Remarks					
Contractor Name					
Truck Capacity (cy) - This is the CERTIFIED Truck Capacity					
Debris Classification:		Woody	C&D		
Loading Site Monitor					
Quantity of Debris on Truck (Percentage)					
Disposal Site Monitor					
Approval _____					

Roll-Off Bin Information - Fill out ONLY when use roll-offs (dumpsters)

Must be added to capture required fields



Understanding the Public Assistance Process

7.4.1.1 Load Ticket to Project Worksheet – Management and Validation Process

As stated throughout this guidebook, documentation is critical to receiving public assistance. There are two critical local government responsibilities, load ticket data management and truck certification.

Identify and assign someone to manage Load Ticket Data, which should include the following tasks:

- Retain Local and FEMA copies of all the load tickets
- Verify that all data is legible and required fields are entered
- Enter required fields into spreadsheet/database
- Verify that there are no missing load tickets – This can be greatly simplified if use sequential load tickets.

The local entity must provide a notarized list of the measured bed size in cubic yards or the tared weight of each truck referencing the license plate number and/or truck number (force account equipment). **Do not rely upon contractor or Waste Management to keep a copy.** The maximum cubic yards or tared weight is compared against the load volumes during the validation process.

Recommendation: Scan a copy of the load tickets as they come in.

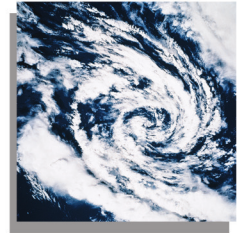
7.4.1.2 Ticket Validation

Applicant will be requested to provide the following information to the FEMA Project Officer or Debris Specialist:

- Electronically prepared spreadsheet containing load ticket information with the following required fields:

TIP Enter the street number and street name as two separate fields.	Ticket Number	Date	Contractor Name/Number
	Truck Number	Truck Capacity	Validated Volume
	Pickup Address	Debris Classification	Disposal Site
	Site Departure Time	Dump Arrival Time	

- Certified Truck List (electronic)
- Private Road List (electronic)
- TXDOT FHWA Road List. A copy is included on the CD in Appendix D.
- First Pass Completion Dates for all TXDOT FHWA Roads. Generally, TXDOT and FHWA cover the cost of the first pass.



Understanding the Public Assistance Process

- FEMA Tower Monitor Logs
- FEMA Field Monitor Logs
- FEMA Narrative Logs
- FEMA Monitor Estimates
- Applicant Field Logs
- Invoices/Proof of Pmt-Applicant to Contractor
- Debris Removal Contract
- Permits-TDSR Sites
- Understanding of reduction and final disposal methods
- Mulch or Incineration Contracts
- Applicant Monitor Contracts

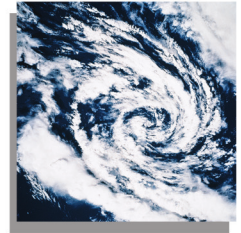
TIP

While the FEMA Project Officer and Debris Specialist can usually track these down if the Applicant does not have them, it is easier if they are retained. It is not uncommon for FEMA Debris Monitors to leave before the FEMA Project Officer and Debris Specialist begin on the Project Worksheet.

7.4.1.3 FEMA Validation of Load Tickets

To validate the load tickets, a FEMA Project Officer or Debris Specialist will review the spreadsheet and compare it against load tickets and truck certification information.

- A random selection of 20% of the load tickets will be validated against the database. If the 20% fails, the sample size may be expanded.
- Ticket numbers will be reviewed for duplicates.
- Truck Capacity will be compared against truck certification. Generally, a column will be added which compares truck capacity/tared weight from the truck certification against both the capacity/weight on the load ticket and the validated volume weight.
- Debris removed from private roads, gated communities, TXDOT roads, and FHWA roads will be identified and marked as ineligible under FEMA program.
- Incomplete information or tickets missing required fields may be determined ineligible.



Understanding the Public Assistance Process

7.4.2 Force Account Labor and Equipment

The local entity's personnel and equipment will be used during at least some portion of the debris operation. How much is left up to the local entity? Both labor and equipment are eligible costs, which require their own form of documentation. The two most common forms of required documentation are the DAR and the Pay Policy.

7.4.2.1 Daily Activity Report (DAR)

At some point, there will be a need to know what it cost to remove the debris. Do your current Daily Activity Reports (DAR) have the capability to track labor and equipment usage for debris removal operations?

If entered into an electronic time keeping system, the DAR should specify a cost or task cost specific to debris removal operations. This allows for quick downloads of information regarding the debris operation.

TIP

If use electronic accounting system, have one cost code for debris removal operations AND a different cost code for repairs associated with the hurricane. FEMA, grant money, and other recovery assistance may require separation of labor.

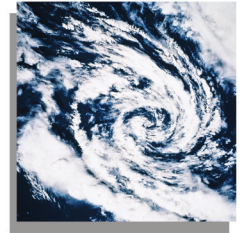
As stated above, for the labor it is best to take a more holistic approach to entering time into the municipal accounting system. Most systems are setup to bill to a "type" of work (i.e. road maintenance). For disaster response, it may be beneficial to setup a task code for debris, emergency preparation, and permanent work with an added level for the location or region work performed.

At a minimum, the DAR should include the following information:

- Date
- Employee name
- Equipment used with operator
- Location work performed (ability to list multiple locations)
- Hours worked (Note regular or overtime per pay policy)
- If labor hours are entered into an electronic time keeping system, the DAR should specify a cost or task cost specific to debris removal operations. This allows for quick downloads of information regarding the debris operation.

TIP

If the local entity uses an electronic accounting system, it is recommended to have one cost code for debris removal operations, emergency protective measures, and a different cost code for Permanent Work. Since there are multiple types of permanent work, ideally, further cost codes to identify specific work should be generated.



Understanding the Public Assistance Process

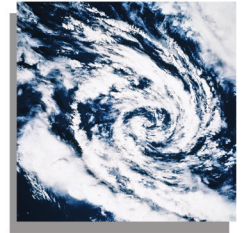


Reality Check: DAR

After an area has been struck by a disaster, a local government accounting office may receive a DAR that states the road maintenance team removed debris from Jones Road, patched a 20-foot by 3-foot area on Jones Road, removed debris from Katy Drive, and replaced a damaged sign on Katy Drive. If the area is under a federal declaration, and your Project Officer asks for labor and equipment for debris removal and patching, the example DAR will be classified in the following way:

- Staff Labor = Overtime Only
- Temporary Labor = Regular and Overtime
- Equipment = Regular Time and Overtime
- Patching or Sign Repair (need to show separate time)
- Temporary Labor and Equipment are eligible for Regular and Overtime

When printing out the labor and equipment report for FEMA or for internal meetings, the report should show number of hours spent for debris removal and number of hours spent on permanent work with a secondary level showing time for patching and for signs.



Understanding the Public Assistance Process

7.4.2.2 Equipment Usage

Tracking equipment use is important since equipment rates have been developed by FEMA to reimburse local entities for the cost of using equipment. This cost includes maintenance items (oil filters, tires, chain saw blades, etc.) and fuel. Equipment includes the use of chainsaws (ranges from \$1.25 to \$2.45 per hour) to dump trucks (18 cubic yard is \$40 per hour).

7.4.2.3 Pay Policy

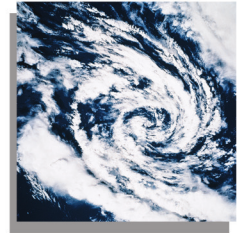
The Pay Policy is extremely important since FEMA is only able to reimburse labor based upon the local entity's pre-disaster pay policy. The only exception to this hard rule is when a local municipality can document one or more examples where a deviation from the policy was implemented.

Pay policies may need to address the following special circumstances that are frequently encountered as part of the disaster response:

- Exempt employees** - Exempt employees generally do not receive overtime. Exempt employees are generally the managers who actively assist in the recovery efforts and work 60 to 80 hours work weeks. Frequently, local entities adopt some method to compensate these employees. If this compensation is not in the pay policy FEMA's "hands" are tied.
- Lockdown** – Occasionally during the disaster response period there are times when personnel are prevented from returning to their homes for safety considerations (i.e. flash flooding). Often, personnel continue to work through these periods with little or no rest until the "lockdown" is over. FEMA's policy is to only pay for "meaningful labor." Lockdown situations may have times when personnel are still being paid (unable to go home) however are not performing "meaningful labor." Ideally the pay policy should address how the local entity will compensate personnel in a lockdown situation.

7.4.3 Contract Services and FEMA

Contract service work for debris is separated into short and long-term operations. Contract services for both short-term and long-term may be supplemented by force account labor and equipment. In addition, contract services may encompass debris removal, debris monitoring, and/or debris management (special engineering organization).



Understanding the Public Assistance Process

Short-Term Operations – 0 to 70 Hours Following a Disaster

Immediately following a disaster, debris must be removed from primary roads to ensure public safety. Existing contracts that are based on time and materials may be used during this period. If it is necessary to set up short-term contracts for operations under time and material contracts, the entity may want to place a cost ceiling in the contract.

Long-Term Operations – After 70 Hours

Contracts setup for long term operations require the local entity follow both its own and State procurement processes. State procurement processes for competitive bidding are located on the CD in Appendix D. This means going out to bid. Bids may be performed over the phone, however, it is important to retain record of communications to show that you followed proper procedure.

Long-term contracts should be either Lump Sum or Unit Price contracts.

DO NOT USE LONG-TERM TIME AND MATERIAL CONTRACTS.

7.4.3.1 Lump Sum Contracts

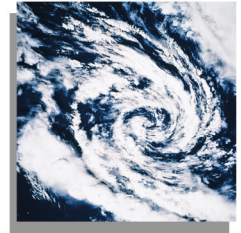
Lump sum contracts should be used when the scope of work and the amount of debris are clearly defined. Lump sum contracts are ideal for special equipment needs (i.e. cranes).

7.4.3.2 Unit Price Contracts

Unit price contracts are the most common contract used for debris removal operations. Unit price contracts are typically set up as cost per cubic yard or cost per ton. FEMA will evaluate the unit price cost for “reasonableness” and compare it to other local entities in the area.

7.4.3.3 Temporary Employees

Temporary employees require the same tracking and documentation as force account labor; however, unlike permanent employees **BOTH the regular and overtime hours are eligible for Temporary Employees.**



Understanding the Public Assistance Process

7.5 Reducing Ineligibles on a Project Worksheet

When preparing the Project Worksheet, there are typically three categories of ineligible expenses under the FEMA PA Program:

- Field and Tower Monitoring Discrepancies
- Federal Highway Administration/Texas State Roads
- Private and Gated Communities

7.5.1 Debris Monitoring

During large-scale debris operations, both the local entity/ applicant and FEMA monitors should be present at each phase of the debris operation.

7.5.1.1 Local Entity –Applicant Responsibilities

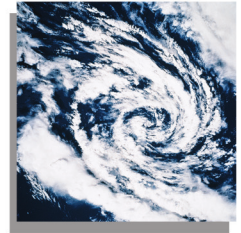
The local entity is required to ensure that the contract haulers are in compliance with their contract. The local entity may use their personnel or hire a local contractor. Temporary employees are ideal for these monitoring positions, since the both their regular and overtime are eligible. By hiring from the community, it may assist residents who lost their job due to the disaster.

TIP

If using a contractor, make sure their rates per hour are not considered excessive or outside of the “reasonable cost” range. For long-term operations, debris monitors should not exceed the local rate for these individuals. Excessive cost may begin as low as \$20 an hour.

At the loading site the local entity’s monitor should fill out the load ticket. **Since the local entity’s representative fills out the load ticket, they are responsible for making sure it is filled out correctly.** When the unit cost for the contractor and/or the landfill is by cubic yards, the applicant generally should also have a monitor at the disposal site. **This representative acts to dispute field calls made on loads by the FEMA monitor.** Both the loading and disposal site local representatives should create a daily log. Below is a list of the information that should be maintained in the daily logs:

- Date
- Time
- Load Ticket



Understanding the Public Assistance Process

- Street or road name
- Truck Number
- Truck Capacity or Tared Weight
- Tonnage used for Unit Price/Landfill Disposal – Truck Weight
- Cubic Yard used for Unit Price/Landfill Disposal
 - Local Entity Load Volume
 - FEMA Load Volume
- Load Site
- Dump Site
- Photo / Disc
- Comments

Whenever possible, discrepancies between what the local entity and the FEMA Tower monitor report should be worked out while the truck is being validated.

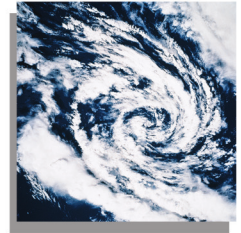
TIP

If using tonnage instead of cubic yards for unit price disposal options, discrepancies on “how full the truck is” are greatly reduced.

7.5.1.2 FEMA Monitoring

In addition to the local entity monitoring, FEMA also monitors debris at the loading and disposal site. Generally, a FEMA Field Monitor will travel to multiple loading sites during the day to verify that the contractor is only collecting eligible debris and is remaining within the local entity’s ROW. The FEMA Field Monitor has the authority to make eligibility calls including:

- At loading site, the monitor can declare one or more loads ineligible. For example, this can happen if the FEMA Monitor observes that the local entity or contractor is loading C&D from a demolished house that has not been pre-approved.
- Partial loads may be declared ineligible when the contractor knocks down a damaged tree, not a root ball, for the specific purpose of removal. Trees and limbs may not be cut or removed from private residences during the debris removal process.



Understanding the Public Assistance Process

TIP

When cubic yards are used, a large percentage of the total ineligible is due to determining “how full” is the truck.

Contractors are generally paid on the certified truck capacity – NOT on what FEMA validates the load for. If your contractor removes 100,000 cubic yards at \$10 a cubic yard (tipping fees assessed by landfill and not paid by contractor) the local entity is on the hook for \$1,000,000. If FEMA validates the loads on average at 90%, the local entity is out \$100,000.

The responsibility of the FEMA Tower Monitor varies depending on whether the disposal site measurement is based on cubic yards or tons.

- Cubic Yards – The FEMA Tower Monitor will provide a percentage of the load of the truck.
- Tons – A FEMA Monitor may or may not be at the disposal site full-time. If the debris operation does not warrant a FEMA Monitor on a full-time basis, the monitor will check the scales, observe operations at the disposal site (i.e. check for trucks not dumping their loads, wet loads, etc.) at random times of the day.

7.5.2 Federal Highway Administration/Texas State Roads

Debris removed during the first pass for FHWA and TXDOT roads may be covered under the Emergency Relief (ER) Program. When this occurs, FEMA declares these roads **INELIGIBLE** for the first pass (or subsequent passes if declared under ER Program). The Local Entity must apply for reimbursement under this program. The reimbursement under the ER Program may be better than what is offered by FEMA.

A list of both FHWA and TXDOT Roads are provided on the included CD.

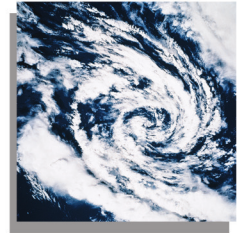
7.5.3 Private and Gated Communities

Debris removal from within private and gated communities is INELIGIBLE. A private or a gated community includes any community where a gate, guard, or other mechanism restricts access to the community. Communities may bring their debris to the

public ROW for pickup, but debris loads removed from within these communities themselves are **INELIGIBLE**. Keep in mind that C&D debris associated with performing repairs or demolition is still considered **INELIGIBLE**. The reason for this is that gated and private communities are considered private property. The same gates and guards that restrict access, also limit the risks and hazards associated with the debris to the public as a whole. In addition, the removal of debris from these areas is generally the legal responsibility of the individual homeowners or the Homeowner’s Association. Depending on multiple factors not covered in this manual, a Homeowner’s Association **MAY** be eligible to become a Private Nonprofit (PNP) Facility under the FEMA Program.

TIP

While they may not be gated, **apartment complexes are also considered INELIGIBLE** for debris removal within the complex since they are considered commercial properties.



8.0 Avoiding Common Mistakes when Working with FEMA

8.1 Contracts

You can avoid great expense and save critical time by having contracts in place before a disaster strikes. Ideally, the applicant—the local entity—should have a short term (the first 70 hours following a disaster) AND a long term contract. Generally, Time and Material contracts result in a higher cost to the local entity when debris cleanup lasts more than one week. This is due to the fact that most local entities have existing contracts to manage debris caused from intense storms or events that only impact a small localized area. These are generally great to use for the short term, but for far reaching disasters, Time and Material contracts results in a higher cost than either Lump Sum or Unit Price.

FEMA’s policy states that time and materials contracts OR force account labor should be cut-off or stopped entirely within 70 hours following the disaster. **Time and materials contracts past 70 hours may jeopardize reimbursement under the FEMA PA Program.**

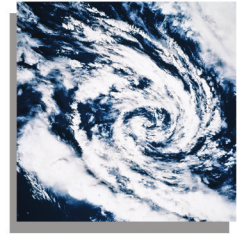
8.1.1 Short-Term Operations - Less than 70 hours following a disaster

- Set up contracts on an hourly basis.
- Solicit hourly rates from several different contractors.
- Specify that the hourly rate will include all fuel, maintenance, repair, etc. and the operator.

8.1.2 Long-Term Operations

Prepare long-term contracts if the situation is beyond the capabilities of existing resources and need assistance beyond the first 70 hours.

- Debris Monitoring (use temporary labor or a contract firm)
- Consider establishing a separate engineering group inside your organization. Decide on whether to hire a local engineering firm or set up an internal organization composed of city/county engineering staff.
- Long-term contracts should be lump sum OR unit price (unit price is typically used). The unit price must include fuel, maintenance, repair, equipment, and the operator.



Avoiding Common Mistakes when Working with FEMA

8.2 Force Account Labor

If using force account labor, make sure your accounting system can easily pull out the individuals worked or can be readily entered by hand by someone based upon a daily activity record. Keep track of equipment used including chain saws and other small equipment. It can add up fast.

8.3 Certified Trucks

Trucks used in debris operations must be certified by FEMA and/or the landfill (truck capacity). **Trucks not certified may result in all of the loads performed by the truck to be ineligible.**

8.4 Load Tickets

Incomplete or incorrect load tickets may result in an ineligible load. Make sure all copies are legible. Press hard - there are usually 7 copies to go through. Complete one load ticket for EACH load.

8.5 Duplicate Load Tickets

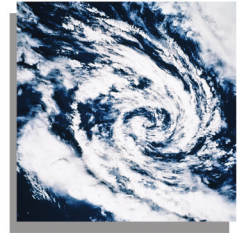
Duplicate load tickets may lead to ineligible loads. If using multiple contractors, make sure that no duplicate load ticket numbers are used. This increases the verification time exponentially and several tickets may be determined ineligible.

8.6 Verified Load Tickets

To maximize reimbursement, make sure FEMA or a local government monitor at the landfill verifies all loads. This is very important when using cubic yards under a unit price contract (FEMA recommends using tonnage versus cubic yards for more accurate measurement). The contractors rarely have 100% loads. They generally range between 75 to 90% of the truck capacity. Without the verification, FEMA will take a range usually as low as 60 to 75%.

8.7 Load Ticket Tracking

Have one person or small group be responsible for ALL tickets. **Track load tickets carefully and keep this philosophy in mind: no load ticket = no money from FEMA.** The applicant must make certain that all information is entered into a spreadsheet or database. At a minimum it must include: load ticket number, date, driver name, truck number, truck capacity, percent verified, adjusted amount, and debris type. From this spreadsheet the Project Officer will check it against the truck certification list and duplicate tickets.



Avoiding Common Mistakes when Working with FEMA

8.8 Debris Monitor

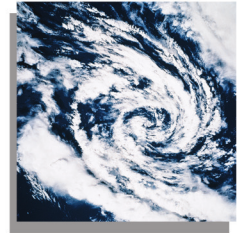
Make sure the applicant's debris monitors are properly trained. Review ordinances and determine the ROW of each road. If the FEMA monitor catches the contractor beyond the public ROW, one or more load tickets will become ineligible. Unless authorized by FEMA, construction and demolition debris (C&D) is ineligible (i.e. houses destroyed that have been demolished and brought to the curb). If the FEMA monitor witnesses ineligible debris being hauled away, several loads may be declared ineligible. If the applicant is verifying loads, make sure the monitor is well trained. Invite FEMA to do the training – typically they will be more than happy to do so. This would increase the amount of “good will” between the applicant and FEMA. Part of the training should include what to look for when determining percentage (i.e. trees standing vertically instead of laterally, “fluff factor”, false bottoms on trucks, mud/sand, etc).

8.9 Federal Aid Roads

All persons filling out the load tickets should be as specific as possible. For example, do not write “Westheimer” as a street. **Provide a range for the street address whenever possible.** This is extremely important for federal aid roads. The first pass is generally covered by TXDOT, however subsequent passes may be covered by the applicant. If you have several tickets that all say the same road (no range) it is impossible to determine first and subsequent passes. FEMA generally takes a percentage of Federal Aid roads that are the responsibility of the applicant and deducts that percentage from the total of eligible debris.

8.10 Private Roads/ Gated Communities

Currently, FEMA does not reimburse under any circumstances for private roads/communities. However, this may change due to multiple appeals. Generally, you can manage with having the community bring the debris to the public right-of-way (ROW). However, instruct the monitor to NOT write the name of the private community (i.e. apartment complex) or road; otherwise the load becomes ineligible.



9.0 Putting it All Together

When developing a debris management plan and preparing for a disaster there have been many guides created by Federal and Texas agencies, as well as other state and local governments. On the attached CD is a Florida guide to FEMA forms, and in Appendix C, there is a list of web sites that also have debris management guides. No matter which guide fits your community best, most guides start with developing a debris management team. In getting started with your preparation for Hurricane Season, there are a few simple steps to take to set you on the right path.

9.1 Developing a Debris Management Team

Meet with lead staff from Public Works, Solid Waste, Office of Emergency Management, Engineering, and Finance departments to determine core members of the Debris Management Team. Agenda items should include the following:

- Assign a Debris Manager to lead the team.
- Select the key members of the team.
- Assign areas of responsibility to each key member. These team members may be required to oversee certain aspects of the preparedness and recovery processes.
- Review existing plans and other federal, state, and local guides.

9.2 Supplementing the Team

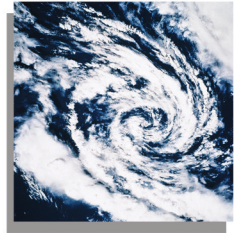
Once the debris management team reviews plan and guide materials, the team may determine that other staff need to be included in the planning and preparedness or recovery phase.

- Determine other supplemental members needed to support the team.
- Outline roles and responsibilities for each member.
- Develop an organization chart that clearly identifies decision makers and the roles of each team member.

9.3 Developing a Debris Removal Strategy

There are many aspects to debris removal, including waste assessment, temporary storage, landfill capacity, hauling, processing, and contracting. Determining how to approach each task can be difficult in a team setting. Using Table 3.1 Roles and Responsibilities, identify the most qualified team member to review each aspect. Use the checklists in Appendices A and B to assign tasks to each member.

- Review each team member's role in preparedness and recovery activities.
- Assign checklists and provide expectations.



Putting it All Together

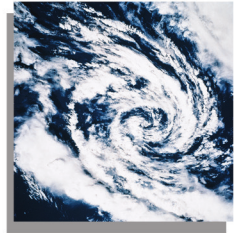
- Develop a timeline to complete tasks or review on-going tasks.
- Review the timeline and set the next meeting date and time.
- Periodically meet with team members, even in an inactive storm season, to review timeline and duties.

9.4 Review and Revise

The preparedness process is ongoing. Once Hurricane Season ends October 31, and the recovery from any disasters is complete, it is time to review and revise the debris management plan based on experienced flaws.

- Review the current plan and preparedness activities.
- Note anecdotes from various departments and other communities involved in debris management.
- Revise plans and activities to better accommodate situations experienced.

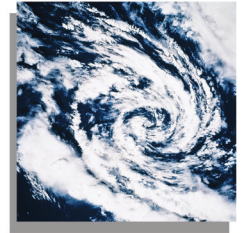
Time is critical to a disaster victim. Returning the community to normal activities should be the first priority of every debris manager. Preparedness is the key to mitigating the recovery time after a disaster. Take the time to go through the process of each step before the disaster strikes.



Appendix A – Pre-Disaster Checklists

This appendix contains the following lists of tasks:

- Review Local Ordinances
- Pre-Disaster Waste Analysis
- Processing Facilities and Operations
- Temporary Storage Sites
- Processing and Barriers to Processing
- Processing Equipment Needs
- Labor Needs
- Contracts
- Funding Options
- Mutual Aid Agreements
- Public Information



Review Local Ordinances and Regulations

Recommended Position: Legal and Solid Waste Departments

Lead Position: _____

Report to: _____

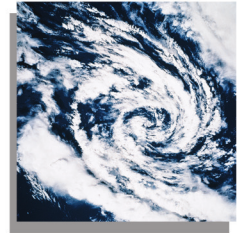
Deadline for Completion: _____

Updates: _____

Tasks:

- Identify all local ordinances affecting a jurisdiction’s ability and authority to establish a diversion program or to enter into contracts to manage the disaster debris.
- Determine who in the jurisdiction has been delegated the authority to act on behalf of the governing body in the event of an emergency/disaster.
- Outline jurisdiction’s local authority with respect to debris management.
- Identify or establish local ordinances relating to temporary storage sites.

Notes: (Identify Critical Path tasks and individual task deadlines)



Pre-Disaster Waste Analysis

Recommended Position: Public Works, Planning, Solid Waste and Park Departments

Lead Position: _____

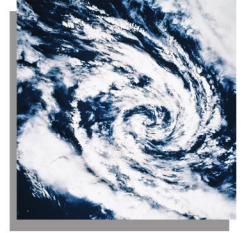
Report to: _____

Deadline for Completion: _____

Updates: _____

- Analyze risk posed by various categories of hurricanes and related storms.
(Refer to H-GAC Regional Mitigation Plan. <http://www.h-gac.com/HGAC/Programs/Disaster+Preparedness/Regional+Mitigation+Plan.htm>.)
- Project amount of waste generated using the USACE hurricane debris model.
(Refer to <http://www.swg.usace.army.mil/em/mg/mguide.asp> and H-GAC Regional Storm Debris Management Assessment2002: Tab D Detailed County and City Debris Estimating Tables.)
- Estimate waste components and quantities – Divide your community in terms of land use (rural, urban, industrial, or mixed use); review areas for maturity of vegetation and density of development; potential categories: household hazardous waste, vegetative debris, and construction and demolition.
- Develop a directory of processors, including landfills, that can handle the estimated volumes for each type of waste.

Notes: *(Identify Critical Path tasks and individual task deadlines)*



Processing Facilities and Operations

Recommended Position: Public Works, Planning and Solid Waste Departments

Lead Position: _____

Report to: _____

Deadline for Completion: _____

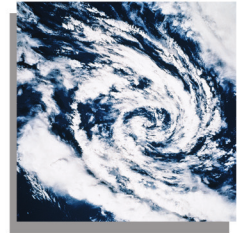
Updates: _____

- Prepare a list of existing waste disposal facilities. (Refer to the H-GAC Regional Storm Debris Management Assessment 2002: pages 18-26)

- Complete a facilities assessment for each facility – Review the facility for types of materials handled, processing capacity, processing barriers, remaining disposal capacity of facility, description of on-site recycling facilities, expected waste types and origin of waste, expected storage capacity for disaster debris, and disaster debris disposal/diversion reporting formats.

- Compare the facilities assessment with waste analysis to determine the facilities that meet the needs of your community.

Notes: *(Identify Critical Path tasks and individual task deadlines)*



Temporary Storage Sites

Recommended Position: Public Works, Solid Waste, Local Environmental Enforcement, Park, Legal, and Household Hazardous Waste Departments

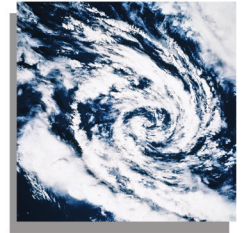
Lead Position: _____

Report to: _____

Deadline for Completion: _____

Updates: _____

- Complete Waste Analysis.
- Develop the criteria for selection of a temporary storage site – location, current state of vegetation, current use, previous uses (possible contamination), public or private ownership, proximity to water body, drainage, access (ingress and egress), surrounding land uses, and zoning.
- Make a list of available sites – Include both public and private, but consider purchasing the land prior to use, if it is a privately owned site. (Refer to the H-GAC Regional Storm Debris Management Assessment 2002: Assessment Tab, Table 8 Temporary Debris Management Site Requirements.)
- Identify necessary permits for storage and processing from various agencies, including city, county, state, and federal. (Necessary permits would include Wetlands, Groundwater, Endangered Species, Archeological and Historical Resources, Hazardous and Toxic Waste Site.)
- If time permits, pre-approve sites. Complete an Environmental Site Assessment Phase II analysis (Video/photograph aerial, video/photograph ground, notation of features, random soil sampling, water samples from existing wells, and volatile organic carbon “sniffer” also known as a PID). Send this information to the TCEQ and request a preliminary evaluation of the site for the purpose of a Storm Debris Temporary Disposal Site. Contact the county for permit requirements and consult local ordinances.
- Enact a temporary storage site waiver ordinance – Be sure to specify conditions in order to avoid use by landowners other than the City/County.



Temporary Storage Sites

- If applicable, rezone the selected sites and back up sites.

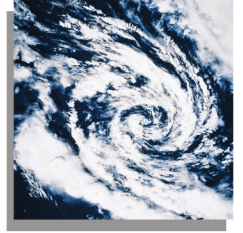
- Set up guidelines for use of the temporary site – accepted materials, hours of use, condition of material, types of processing, schedule for removal to landfill, amount of material that can be stored, and facilities needed at the site for processing and measuring debris.

- Develop a household hazardous waste screening program.

- Develop an access management plan – determine the flow of traffic in and out of the site to maximize efficiency and minimize wait time.

- Develop a restoration plan based on the completed ESA Phase II analysis.

Notes: *(Identify Critical Path tasks and individual task deadlines)*



Processing and Barriers to Processing

Recommended Position: Public Works, Engineering, Solid Waste, and Local Environmental Enforcement Departments

Lead Position: _____

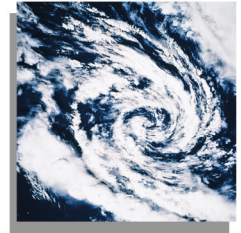
Report to: _____

Deadline for Completion: _____

Updates: _____

- Develop goals for material disposal based on waste analysis, i.e. recycling percentages.
- Develop a processing strategy, with time and cost considerations, based on end goals for material disposal – Volume reduction methods include incineration, grinding and chipping, and recycling.
- Select a processing strategy – consider the location of the processing facility, the environmental consequences, and the types of debris.
- Identify barriers and develop programs accordingly – air quality, closeout procedures for TDSR sites, permit requirements. (Incineration may not be an option in a non-attainment county.)

Notes: *(Identify Critical Path tasks and individual task deadlines)*



Processing Equipment Needs

Recommended Position: Public Works, Planning, Household Hazardous Waste, Local Environmental Enforcement, Legal, and Finance Departments

Lead Position: _____

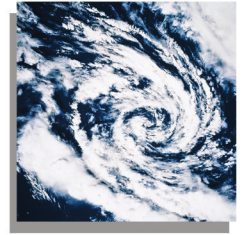
Report to: _____

Deadline for Completion: _____

Updates: _____

- Identify the type and amount of processing equipment needed to support selected diversion programs. A separate facility for household hazardous waste (HHW) would need to be set up with special equipment including a impermeable liner; however, in communities without qualified staff, qualified environmental contractors should be used to collect and remove HHW. Incineration may include various types of equipment depending on the type, open-air or air curtain pit. Grinding and Chipping requires various levels of chippers and grinders depending on the desired end product. Based on debris estimates, number of teams and number of temporary sites, determine the number of track hoes, dump trucks, and dozers needed to remove and manage debris. Inspection and monitoring equipment should also be considered.
- Identify organizations/agencies/businesses that may be able to provide equipment through MAA in the event of a disaster. Consider the wide-reaching impact of a disaster when setting up memorandums of understanding for equipment with other communities in your area. State equipment stored locally may also be destroyed by a disaster. When requesting equipment from the state, request an operator also. Set contracts with reputable equipment companies that can supply equipment from places unaffected by a disaster in your area.

Notes: *(Identify Critical Path tasks and individual task deadlines)*



Labor Needs

Recommended Position: City Manager / Administrative Officer, Solid Waste, General Services
Administration, Finance, and Legal Departments

Lead Position: _____

Report to: _____

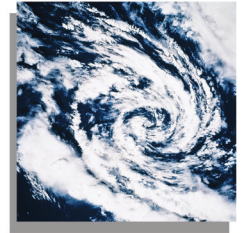
Deadline for Completion: _____

Updates: _____

- Estimate staffing requirements for diversion programs as part of staffing needed for overall recovery programs.
- List all possible sources for obtaining additional staffing, including other municipalities and the county, temporary employee companies, and volunteers.
- Develop MAA and contracts with the appropriate entities to provide staffing needs.

Notes: *(Identify Critical Path tasks and individual task deadlines)*

When using staff after a disaster, FEMA only reimburses for overtime. When using a contractor to provide staffing, FEMA reimburses the full time (usually FEMA pays 75% of costs and requires a 25% match, but this varies by disaster). When considering labor needs, consider the regular business that your staff is required to complete, and then consider contracting additional labor to support your staff's efforts during the response and recovery efforts after a disaster. It is good to consider levels of disasters, i.e. a Category 1 hurricane may require less assistance than a Category 3 hurricane.



Contracts

Recommended Position: City Manager/ Administrative Officer, Public Works, Engineering, Legal,
and Finance, Departments

Lead Position: _____

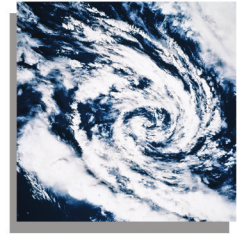
Report to: _____

Deadline for Completion: _____

Updates: _____

- Review local and state contracting policy and guidelines.
- Determine equipment, personnel, and removal needs.
- Determine contract type – Time and Materials Contracts are good for first pass activities and should not exceed 70 hours. Unit price contracts use construction units and prices for these units to develop line item costs and total contract costs. (Refer to <http://www.swg.usace.army.mil/lem/mg/mguide.asp>, Appendix I, Contract Scope of Work and the H-GAC Regional Storm Debris Management Assessment, Tab G Sample Debris Management Contract Scopes of Work.)
- Develop contracts based on procurement policies.
- Set up a tracking system that can verify the load requirements.
- Determine qualified contractors who have the appropriate equipment and experience necessary to respond quickly after a disaster.
- Using local and state procurement policies, request a proposal from contracting firms and pre-qualify contractors. You may want to go ahead and contract with your selected contractors. Have each contractor give prices that are good for that year, with the intent to update pricing annually. The contractor may cost more up front, but the time saved will be worth it. This gives you time to get FEMA review of your contracts before you sign them (Neva Elliot, (940) 898-5399).

Notes: *(Identify Critical Path tasks and individual task deadlines)*



Mutual Aid Agreements

Recommended Position: City Manager/ Administrative Officer, Solid Waste, Legal, and Finance Departments

Lead Position: _____

Report to: _____

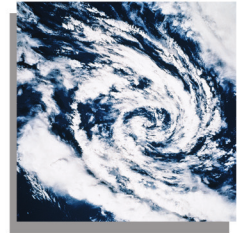
Deadline for Completion: _____

Updates: _____

- Review existing MAA
- If lack of personnel is an issue, explore the possibility of entering into discipline-specific MAA, such as public works, emergency managers, and public information officers.
- Meet with other community officials in your area to determine resources available and form MAA with these communities.

Notes: *(Identify Critical Path tasks and individual task deadlines)*

Mutual Aid Agreements (MAA) are useful when a disaster is localized and did not heavily impact the region. If a disaster is large enough to severely impact the region, MAAs may be considered void.



Public Information

Recommended Position: *Public Information Officer and Legal Department*

Lead Position: _____

Report to: _____

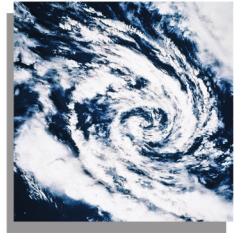
Deadline for Completion: _____

Updates: _____

Tasks:

- Review local government policy on communications with the public and media
- Review FEMA guides on public information plans (Refer to the Debris Management Guide on the attached CD).
- Determine the point of contact for the public and media questions on debris management.
- Develop a post-disaster public information strategy. It is important to remember that many citizens will be without power. Handouts and public meetings may be the best sources of information. This strategy should address the following:
 - Inform the public about disruption and resumption of waste collection services
 - Inform the public of storm related debris pick-up services and deadlines
 - Inform the public about disposal of HHW
 - Manage all media and outside communications
 - Issue timely reports on debris removal regulations, status, and other efforts.

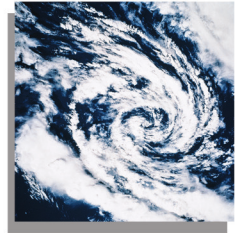
Notes: *(Identify Critical Path tasks and individual task deadlines)*



Appendix B - Post-Disaster Checklists

This appendix contains the following lists of tasks:

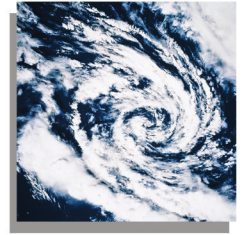
- 0-70 Hours After Disaster
- 70 Hours to 10 Days
- 10 Days to 90 Days



0 – 70 Hours After Disaster

- Clear debris from emergency evacuation routes, access roads to critical facilities, and primary roadways.
- Send out rapid response teams to perform windshield surveys of damage and estimate debris quantities.
- Estimate magnitude of event against available resources to determine if additional assistance is needed.
- Notify City/County/State officials if a disaster declaration is needed.
- Activate pre-positioned contracts, if necessary.
- Start to issue messages to inform the public about what they should expect during cleanup.
- Perform emergency removal of debris if needed for life-saving measures.
- Conduct daily briefings with debris managers and other officials to update progress and discuss issues.
- Develop a traffic control plan along potential haul routes and at debris management and disposal sites.
- Coordinate with other City/County agencies regarding priorities and responsibilities.
- If additional Contractor resources are needed, develop scope of work for contract, issue request for proposals, and complete competitive bidding process.
- Request assistance from FEMA for additional monitors or debris removal resources, if needed.

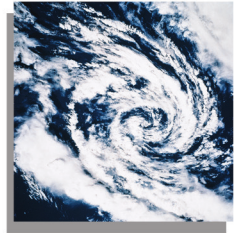
Notes:



70 Hours - 10 Days

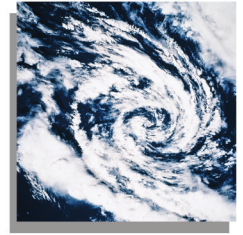
- Terminate emergency time-and-material debris clearance and removal time and materials contracts after 70 hours of actual work or when price limit is reached, whichever comes first. Complete competitive bidding process, if it has not already been completed during pre-disaster preparation.
- Coordinate debris removal efforts with Contractor(s).
- Assign and deploy debris contract monitors to debris management zones to monitor Contractor activities.
- Meet daily with debris managers and key officials to update progress and discuss issues.
- Continue to disseminate public information. Provide information about curbside debris pickup dates, household hazardous waste drop-off sites, and other debris-related public information.
- Maintain documentation for costs of debris clearance, removal and disposal.
- Enter debris load ticket information into a spreadsheet or database and update daily.
- Ensure that debris management sites meet environmental and permitting requirements.
- Have your first meeting with your FEMA Public Assistance Coordinator. Be able to:
 - Identify your Debris Manager and provide contact information.
 - Provide the address and phone number of the Debris Management Center.
 - Provide an estimate of debris quantities based on your Preliminary Damage Assessments.
 - Identify how debris will be removed – in-house using force account labor and/or by a Contractor.
 - Provide addresses and maps of debris management sites.
 - Provide addresses and maps of final disposal sites.
 - Provide copies of all relevant contracts and be able to explain how bidding was completed. Discuss if contracts are lump sum or unit price.
 - Provide contract rates for debris removal labor and equipment and tipping and other disposal fees.
 - Explain the debris removal monitoring program.
 - Discuss load ticket documentation.
 - Discuss how other costs are being documented (time sheets, equipment logs, etc.).
 - Ask for FEMA Debris Monitors and Specialists to be made available.
 - Ask for a storm-related debris removal timeline and deadline, which is usually six months but varies with each event.

Notes:



Appendix C - Debris Websites

This appendix contains a list of helpful websites that provide useful information about debris management during preparedness and recovery phases.



Debris Websites

- **General Debris Management Debris Site**

<http://www.fema.gov/rrr/pa/debrisinfo.shtm>

- **Debris Management Brochure – FEMA 329** Concise brochure on basic debris removal procedures.
- **Debris Management Guide - FEMA 325** Comprehensive guidance for community leaders in planning, mobilizing, organizing, and controlling large-scale debris clearance and disposal operations.
- **Fact Sheet: Debris Operations** - Recovery Division Policy Number 9580.4 - One page fact sheet clarifying debris removal contracting requirements.

- **FEMA Policy 9580.1 - Public Assistance Debris Operations Job Aid**

http://www.fema.gov/pdf/rrr/pa/9580_1.pdf

This job aid provides guidance on the pick-up, removal, and disposal of eligible debris generated by hurricanes, tornadoes, floods, earthquakes, wildfires, and other events that are Presidentially declared disasters or emergencies.

- **FEMA Policy 9523.4 Demolition of Private and Public Facilities**

http://www.fema.gov/rrr/pa/9523_4.shtm

This policy provides guidance in determining the eligibility of structures for demolition under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288 as amended (Stafford Act).

- **FEMA Policy 9580.4 Fact Sheet: Debris Operations – Clarification: Emergency Contracting vs. Emergency Work**

http://www.fema.gov/rrr/pa/9580_4.shtm

Clarifies Contracting process for debris operations. Even though it is "emergency work" in FEMA operations, this does not necessarily mean that the contracts can be awarded without competitive bidding.

- **FEMA 9500 Policies**

<http://www.fema.gov/rrr/pa/9500toc.shtm>

This website link contains the FEMA 9500 Policies. In addition to the policies specified above, it also provides guidance on policies ranging from eligibility to emergency work to insurance.

Other Helpful Debris Information Sites:

- **H-GAC Regional Hazard Mitigation Plan**

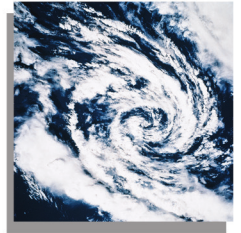
<http://www.h-gac.com/HGAC/Programs/Disaster+Preparedness/Regional+Mitigation+Plan.htm>

This website contains the H-GAC Regional Mitigation Plan. The plan is helpful in that analyzes the risk posed by various natural disasters.

- **California Integrated Waste Management Disaster Plan**

<http://www.ciwmb.ca.gov/disaster/DisasterPlan/>

This is the State of California's Integrated Waste Management Disaster Plan. The site incorporates local government guidance on debris management. This site is a good example of a debris management plan and should be used as a resource.



Debris Websites

- **Louisiana Sample Debris Management Plan**

<http://www.loep.state.la.us/disrecovery/debrismgtsampleplan.htm>

This website contains a sample debris management plan. The plan is basic and may be useful in developing local plans.

- **The State of Texas Recovery – Public Assistance**

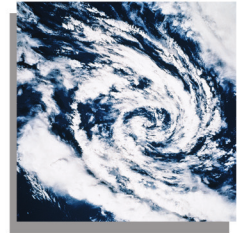
http://www.txdps.state.tx.us/dem/ctxflood02_recovery_pa.htm

Texas Department of Emergency Management has an entire web page devoted to debris management. This website contains useful state guides to debris management, as well as the Federal Public Assistance guides.

- **USACE Galveston District Emergency Management Office**

<http://www.swg.usace.army.mil/em/mg/mguide.asp>

This website contains downloadable disaster guidebook. This guidebook provides guidance on marina clearance. It also contains sample documents that can be used in local government debris management plans.



Appendix D

This appendix contains a CD with helpful information. The CD contains the following:

Applicant Workbook

This workbook is an Excel spreadsheet that allows a local government to track labor and equipment.

Checklists

This is a Microsoft Word document that contains the checklists located in Appendices A&B. These can be modified and tailored to meet the needs of each entity.

FEMA Forms

This folder includes a number of blank forms described throughout the guide. These forms are subject to change.

FEMA Debris Management Guide

This guide was developed to provide guidance to local governments in planning, mobilizing, organizing and controlling a large-scale debris clearance, removal and disposal operation.

FEMA Debris Operations Job Aid

This Job Aid contains public assistance policies. It is one of the documents used by the project officer when helping the applicant develop a Project Worksheet.

FEMA Policy Digest

In an effort to help local governments better understand and successfully use the Public Assistance Program, FEMA has developed this guide that is intended to be an easy-to-read, easy-to-use, brief summary of the basic policies that govern the Public Assistance Program

FEMA Public Assistance Guide

This FEMA guide describes the Public Assistance Program's basic provisions and application procedures.

H-GAC Regional Storm Debris Management Assessment

This assessment was developed in 2002 by Dewberry & Davis, LLC for the Houston-Galveston Area Council. It identifies a basic framework and many underlying resources necessary to support the development of a debris management plan.

TCEQ Outdoor Burning in Texas

This guide explains the Outdoor Burning Rule implemented in 1996. It also contains answers to frequently asked questions about the rule.

Texas Department of Transportation and Federal Highway Administration Roads

This is a list of Federal Aid Roads located in Texas. The roads are listed by county.

Texas Procurement Policies

This contains the state policies on procurement, including competitive bidding. This resource may be found at the following site: <http://www.window.state.tx.us/lga/purchasing/96-449.pdf>

USACE Sample Contract Scope of Work

This sample contains contract scopes of work for various debris removal activities and is located on the US Army Corps of Engineers web site at <http://www.swg.usace.army.mil/em/mg/appendi.doc>. It contains scopes of work for equipment leasing, site management, debris removal, tree removal, and sunken vessel removal. These scopes are only examples and should be thoroughly reviewed by your legal department before use.