

Culberson County/Town of Van Horn EMERGENCY OPERATIONS PLAN

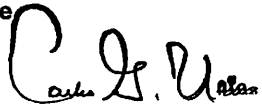

Emergency Support Function 3 Public Works

COORDINATING AGENCY: Culberson County

SUPPORTING AGENCIES:

Public Works Office

Approval and Implementation

Date	Signed by	Signature
10/25/2024	County Judge, Carlos G. Urias	
10/25/2024	EMC, Cody L. Davis	

NOTE: The signature(s) will be based upon local administrative practices. Typically, the individual having primary responsibility for this emergency support function signs in the first block and the second signature block is used by the Emergency Management Coordinator, Mayor, or County Judge. Alternatively, each department head assigned tasks within the support function may sign.

Filed this 25th day of
October A.D. 2024
at 11:15 o'clock AM.
Tina Urias
County Clerk
By [Signature] Deputy

Record of Changes to ESF 3

This page is used to date and describe changes to this document, followed by the initials of the person who made the change.

Use this table to record the following information:

- Change number, in sequence, beginning with 1
- Date change was made to the document
- Description of change and rationale if applicable
- Initials of person who made the change

Number	Date	Description	Name/Initials
1	2024-Jun-17	Transition to ESF	

doc. revision 04/06/2023

INTRODUCTION

- A. ESF #3 – Public Works addresses the agencies that provide response and recovery for local and county public works/engineering following an incident. There is no single organization that has oversight over all varieties of public works/engineering assistance that may be required following a disaster. In general, the County Road & Bridge Supervisor and/or City Systems Supervisor will serve as the lead agency for this ESF. All support agencies for ESF #3 may be required to report individually on their emergency missions when activated by Culberson County/Town of Van Horn EOC or IC.
- B. This document applies to Culberson County/Town of Van Horn and all jurisdictions signatory to the basic plan. Whenever this support function indicates a city/county official or office, the support function also refers to the corresponding municipal official or office.
- C. Respective primary and support agencies are responsible for the dissemination of information that may be of value to other ESF representatives. This information sharing contributes to the response and recovery during an incident of any type.
- D. ESF #3 may be involved in any of, but not limited to, the following activities:
 - a. Damage Assessment
 - b. Technical Advice or Liaison
 - c. Demolition/stabilization projects
 - d. Inspection
 - e. Evaluation
 - f. Contracting
 - g. Reconnaissance
 - h. Emergency Repair
 - i. Temporary or permanent construction
 - j. Debris Removal
 - k. Emergency Supply and Support for Public Works/Engineering

Purpose

A. Function

This support ESF outlines our concept of operations and organizational arrangements to accomplish coordinated public works and engineering activities during incidents.

B. Goal

Provide Culberson County/Town of Van Horn with a mechanism to manage public works/engineering operations during an incident.

C. Objectives

- a. Provide operational guidance for entities that assist in local and regional public works/engineering operations.
- b. Provide information to decision makers about public works/engineering procedures, capabilities and resources.
- c. Describe roles, responsibilities and actions that ensure public works/engineering resource availability during incident response.

Explanation of Terms

This section defines terms and acronyms' used in this document.

Terms

1. **Debris Clearance** involved the clearing of debris by pushing debris to the roadside.
2. **Debris Disposal** involves placing mixed debris and/or debris residue of debris volume reduction operations into an approved landfill.
3. **Debris Removal** involves the debris collection and transport to a temporary storage site for sorting and/or volume reduction or to a permanent disposal site. Debris removal also includes damaged structure demolition and removal.

Situations and Assumptions

A. Situation

1. An incident in Culberson County/Town of Van Horn may threaten public health, safety, and property. Such an incident may require emergency public works and engineering services.

B. Assumptions

1. Utilizing public works and engineering personnel during pre-disaster operations should minimize disaster damage. Advance preparation of resources should hasten restoration and recovery efforts.
2. Local departments and agencies responsible for the public works/engineering function may not have sufficient resources to remove debris created by a major emergency or disaster, as well as accomplish other recovery tasks.
3. Public works and engineering departments and agencies are expected to accomplish expedient repair and restoration of essential services and vital facilities. Dependent on the scale of the operation(s), major reconstruction initiatives will likely require contracted assistance. Large scale debris and/or HazMat operations, however, will require outside assistance.
4. Private construction firms, engineering firms, and equipment rental contractors have staff and equipment resources that may be contracted to carry out public works and engineering activities during incidents. However, local government may have to compete with businesses and individuals seeking those resources for repairs or rebuilding.
5. Assistance may be available through inter-local agreements or contingency contracts. Some types of incidents, due to their large geographic footprint, may cause difficulty in obtaining assistance from normal sources.
6. Damage to chemical plants, power lines, sewer and water distribution systems, and secondary hazards may result in risks to health and safety. These risks could also impede public works and engineering projects.
7. Alternate disposal methods and facilities may be needed as landfills or waste disposal facilities prove insufficient to deal with large quantities of debris. Special consideration must be made if the debris has been contaminated with chemicals or petroleum products.
8. If local capabilities prove insufficient, state and/or federal resources will be available to assist in debris removal or restoration of essential services.

Concept of Operations

- A. The general public works and engineering tasks to be performed include, but may not be limited to, the following:
 - a. Take actions to protect facilities and resources prior to the onset of hazardous conditions, if able.

- b. Provide heavy equipment support for search and rescue operations.
- c. Conduct damage assessment surveys of public facilities, roads, bridges, and other infrastructure.
- d. Inspect damaged structures.
- e. Clear debris from roadways and make repairs to reopen transportation arteries.
- f. Make expedient repairs to essential public facilities to restore operations or protect them from further damage.
- g. Remove debris from public property and manage debris disposal operations for public and private property.
- h. Assist in controlling public access to hazardous areas.

- B.** Public works and engineering resources may be used to engage in protective action in anticipation of a slow building or predicted situation. Such action may include placing protective levees or removing vital equipment. ESF #3 elements are expected to identify buildings and other infrastructure that will benefit from protective measures and, in coordination with the departments or agencies that occupy those buildings, carry out protective measures.

If time permits, ESF #3 elements are also expected to take action in advance of an emergency situation to preserve response and recovery capabilities by protecting vital equipment and supplies, either in place or by relocating them to a safe location. It is desirable for agencies to enter into advanced agreements with other agencies or jurisdictions to ensure the safety and security of vital equipment and resources.

- C.** Heavy equipment support will be used for search and rescue, in particular for search operations in collapsed buildings.
- D.** ESF #3 departments will lead preliminary damage assessments of public buildings, homes, businesses, roads, bridges, and other infrastructure following a disaster. Such procedures are outlined in ESF #14 – Recovery. ESF #3 personnel shall inspect damaged structures. Inspections are conducted to identify unsafe structures and, if necessary, take actions to restrict entry and occupancy until the structure can be made safe.

Damaged buildings posing an immediate threat to public health and safety should be appropriately posted to restrict access pending repair or demolition.

- E.** See Appendix 2 for Debris Removal concepts and procedures.
- F.** ESF #3 staff is expected to make timely temporary repairs to infrastructure deemed essential to emergency response and recovery operations. Building contents should be removed or restricted until the restoration process is complete. Personnel should coordinate with building occupants to determine which areas have the highest priority for protection. Hazardous situations may result in damage to computers holding vital records and/or to hard copy records themselves. When such records are damaged, it is imperative to secure professional technical assistance for restoration as soon as feasible.

It is normally impractical to restore buildings sustaining major damage during the emergency response phase. Major repairs will normally be postponed until recovery operations commence and will typically be performed by contracted personnel.

G. Relationships between levels of government

1. Federal

- a. Coordination with Federal ESF #3 may occur through the State Operations Center, at the site of the incident, or in an established Field Office designated as such.

2. Tribal

- a. Coordination with Tribal ESF #3 may occur through a designated liaison of a given tribe at the discretion of the tribe

3. State

- a. Coordination with the State ESF #3 may occur through the DDC, at the scene of the incident, or through a facility designated as a field office.

4. Local/Regional

- a. Local and Regional entities maintain primary responsibility for addressing local gaps and provisioning for incidents or eventualities that may impact operations.

H. Activities by Phase of Emergency Management

1. Prevention

- a. Identify vulnerabilities of existing infrastructure to known hazards and take steps to mitigate the same.
- b. Reduce vulnerability of new facilities to known hazards through proper design and site selection.
- c. Develop plans to protect infrastructure and equipment from known hazards.
- d. Install emergency generators in key facilities and maintain portable generators to meet unexpected needs.
 - 1. Agencies that maintain possession of generators should have procedures for testing and maintenance in their SOPs.

2. Preparedness

- a. Ensure infrastructure and equipment are in good repair.
- b. Ensure personnel are trained to standard.
- c. Stockpile materials needed to protect and repair infrastructure.
- d. Develop priorities for road clearance.
- e. Maintain an adequate supply of road barricades and temporary fencing.
- f. Maintain current maps.
- g. Review plans, predict potential emergency staffing needs, and make tentative emergency task assignments.
- h. Establish and train damage survey teams.
- i. Execute contingency contracts for emergency equipment and services with local contractors and execute agreements with private entities to borrow equipment.
- j. Ensure SOPs allow for or support accomplishment of ESF objectives.
- k. Ensure provision of fuel for vehicles and generators.

3. Response

- a. If possible, protect key facilities and equipment.
- b. Survey areas affected by hazard, assess damage, and determine need and priority for expedient repair or protection to prevent further damage.
 - 1. Report damage assessments to EOC.
- c. Upon request, provide heavy equipment support for SAR operations.
- d. Clear roads of debris.
- e. Inspect damaged buildings to determine if they are safe for occupancy.
- f. Remove debris from public property and manage disposal of same.
- g. Repair key facilities and equipment as needed, if possible.
- h. Coordinate with Energy and Utilities staff to arrange for emergency electrical service, if needed, to support emergency operations.
- i. Assist
 - El Paso Electric (Electric), the Town of Van Horn (Water/Wastewater), and West Texas Gas(Natural Gas) in making emergency repairs to public utility systems, as needed.
- j. Restrict access to hazardous areas upon request.

4. Recovery
 - a. Repair or contract repair to infrastructure.
 - b. Support community clean-up efforts, as necessary.
 - c. Participate in compiling estimates for damages, response costs, and recovery costs.
 - d. Participate in post-incident review of procedures and make necessary improvements.

Organization and Assignment of Responsibilities

A. General

1. Our normal emergency organization, described in Section VI.A of the Basic Plan and depicted therein, shall carry out the function of providing public works and engineering services during emergency incidents, in accordance with NIMS/NRF protocols.
2. The Emergency Management Coordinator shall provide policy guidance with respect to emergency public works/engineering operations.

B. Task Assignments

1. The Public Works Office shall serve as the Public Works Officer during emergencies and will:
 - a. Coordinate pre-incident programs to reduce vulnerability of local facilities and other infrastructure to known hazards.
 - b. Manage ESF #3 during incidents in accordance with NIMS.
 - c. Oversee restoration of key facilities and systems, as well as debris removal.
 - d. Develop and implement procedures to ensure coordination between various local agencies that perform ESF #3 functions.
 - e. Identify contractors who can provide heavy and specialized equipment support during incidents as well as private entities that may be willing to lend equipment to local government following an emergency.
2. Public Works/Engineering Departments and Culberson County will:
 - a. Carry out pre-disaster protective actions for impending hazards, including identifying possible facilities for debris storage and reduction.
 - b. Conduct damage assessments after a disaster.
 - c. Repair and protect infrastructure.
 - d. Execute debris clearance and removal.
 - e. Negotiate inter-local agreements for ESF #3, with the assistance of Culberson County Attorneys Office.
 - f. Maintain stockpiles of disaster supplies.
3. The Public Works Office/County of Culberson will:
 - a. Develop damage assessment procedures and provide training for damage survey teams.
 - b. Provide engineering services and advice to the IC and EOC staff.
 - c. Assist in conducting damage assessments in the aftermath of an incident.
 - d. Safeguard vital engineering records.
4. The Public Works Office will:
 - a. Maintain reasonable stockpiles of emergency paving materials.
 - b. Make emergency repairs to Culberson County/Town of Van Horn transportation and drainage infrastructure.
 - c. Supervise debris clearance from public right-of-way and support debris removal operations.

- d. Emplace barricades where needed for safety.
 - e. Provide personnel and equipment to aid SAR as needed.
 - f. Provide heavy equipment support for protective actions taken prior to and during response recovery operations.
 - g. Assist in repairs to public utilities and drainage systems.
5. The Town of Van Horn Sanitation Department or Environmental Services Department Office will:
- a. Collect and dispose of refuse.
 - b. Support ESF #3 operations with available resources.
6. The Public Works Office will:
- a. Support damage assessment operations.
 - b. Determine if access to damaged structures should be restricted or if they should be condemned and demolished.
 - c. Inspect expedient shelter and mass care facilities for safety.
7. The Public Works Office will:
- a. Assess damage to recreation areas and facilities and assist in assessing damage to other facilities.
 - b. Provide resources for ESF #3 operations.
 - c. Upon request, establish and staff a facility to sort and catalog property removed from damaged public facilities.

Direction and Control

A. General

1. The Emergency Management Coordinator will provide policy guidance and priorities, pursuant to NIMS, and approve requests for state or federal resources, as needed.
2. The IC will manage ESF #3 emergency resources committed to an incident site and shall be assisted by a staff commensurate with the tasks to be performed and resources committed to the operation.
 - a. If the EOC is not activated, the IC may request additional resources from local departments and agencies.
 - b. The IC may also request authorized officials activate mutual aid agreements or emergency response contracts to obtain additional resources.
3. The EOC will be activated for significant incidents. When the EOC is activated the Public Works Officer will manage ESF #3 from the EOC. The IC shall coordinate resource requests through the Public Works Officer.
4. The Public Works Officer will respond to mission priorities established by the IC or the , direct ESF #3 resources to accomplish specific tasks and coordinate task assignments to achieve overall
5. The Public Works Officer will identify sources from which needed resources can be obtained during an emergency and coordinate with the Resource Manager to originate emergency procurement or to obtain such resources by lease, rental, borrowing, donation, or other means.
6. A major incident may produce substantial damage and debris requiring extended recovery operations. In such incidents, it may be necessary to establish a Debris Task Force to manage removal and disposal of the debris.
7. Normal supervisors of public works and engineering personnel participating in emergency operations will exercise their usual supervisory responsibilities over assigned personnel, subject to NIMS span of control guidelines.
 - a. Organized crews from other jurisdictions will normally operate under their normal direct supervisor.
 - b. Individual volunteers will be supervised by their crew or team.

B. Continuity of Government

1. Each department or agency with transportation responsibilities shall establish a line of succession for ESF #3 personnel.

Readiness Levels

Refer to Basic Plan

Administration and Support

A. Facilities and Equipment

A complete listing of equipment is included in Appendix 1 of ESF Resource Support or is maintained internally by Culberson County/Town of Van Horn.

B. Communications Protection

1. The Public Works Officer shall ensure that all ESF #3 agencies and support test and maintain an interoperable communications network.

C. Reporting

1. ESF #3 should provide appropriate situation reports to the IC or EOC.

D. Training

1. The Public Works Officer will ensure, in conjunction with the Emergency Management Coordinator, that all applicable personnel are trained in their emergency functions and operations.

Development and Maintenance

The Public Works Officer will, in conjunction with the Emergency Management Director or designee, and related support personnel, maintain responsibility for the development and maintenance of this ESF. The Public Works Officer, or their designee, will maintain responsibility for the regular testing of equipment related to this ESF, where such falls outside the SOPs of the responsible agencies.

References

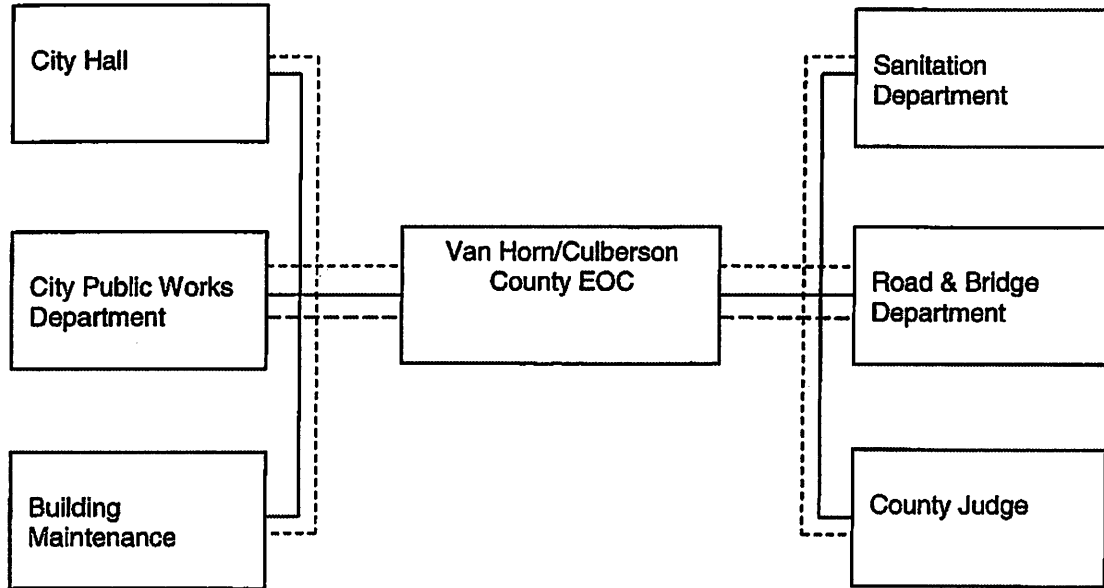
- A. Texas Division of Emergency Executive Guide (TDEM, Federal Emergency Management Agency (FEMA), Comprehensive Preparedness Guide (CPG-101), National Preparedness Goal, State of Texas Emergency Plan Communications (ESF 2)
- B. Division Of Emergency Management *Local Emergency Management Planning Guide*. (DEM-10)

APPENDICES

1. Public Works & Engineering Communications Network
2. Debris Management

Appendix 1

PUBLIC WORKS & ENGINEERING COMMUNICATIONS NETWORK



LEGEND:

- TELEPHONE
- - - - - RADIO
- - - - - PAGER

Appendix 2

1. Objectives

The objectives of debris management in the aftermath of an emergency are to:

- A. Reopen roads and provide access to facilities that provide essential government and population support services.
- B. Remove debris from public property.
- C. Assist citizens in removing debris from private property.
- D. Reduce the volume of debris going to disposal facilities to extend the life of those facilities and reduce costs.
- E. Ensure hazardous materials are segregated from other debris and properly disposed of.

2. Explanation of Terms

- A. Debris is the remains of things destroyed or damaged as a result of natural or technological disasters. Disaster debris may include yard waste, building materials, household items, personal property, hazardous household products, batteries, automobiles, boats, hazardous chemicals, spoiled food, dead animals, and other materials. Some types of debris pose a threat to health, safety, and the environment.
- B. Categorization of Debris. There are a variety of schemes for categorizing debris. In this appendix, the following categorization is used:
 1. Burnable Materials, which include:
 - a. Burnable Natural Debris – generally trees, shrubs, and vegetation
 - b. Burnable Construction and Demolition (C&D) Debris – wooden structural members and other wood products such as roof decking, siding, doors
 - C. Non-burnable Debris – plastic, glass, metal, sheet rock, roofing shingles, carpet, tires, treated lumber, bricks, concrete, soil, and similar items. Household waste is a type of non-burnable debris.
 - D. Hazardous Debris – industrial and household hazardous waste, paint, materials containing asbestos, batteries, petroleum products, agricultural chemicals, dead animals, and similar products.

3. Situation & Assumptions

A. Situation

1. The type and quantity of debris generated by an emergency situation is a function of the type of event, the location of impact, and the magnitude, intensity, and duration.
2. The quantity and type of debris generated, its location, and the size of the area over which it is spread affect the choice of removal and disposal methods, the costs incurred in doing so, and the time it will take to accomplish the task.

B. Assumptions

1. Emergency situations requiring debris removal may occur at any time.
2. Local government may have insufficient resources to remove debris created by a major emergency or disaster and accomplish other recovery tasks.
3. If local debris removal capabilities are insufficient, the chief elected official may issue a local disaster declaration and request State assistance in debris removal. If the local emergency situation is of such magnitude that the Governor requests a Presidential Disaster Declaration and such a declaration is approved, federal resources could become available.
4. For major emergencies or disasters, private contractors may be needed to collect, reduce the volume of, and dispose of debris.
5. Citizens should assist in removing debris from the immediate area of their homes and businesses but will generally need government assistance in removing it for disposal.
6. Citizens are often willing to help their neighbors in removing debris. Proper public information can encourage such cooperative action, speeding up the process and reducing costs.

4. Concept of Operations

A. Phased Approach. Debris management shall be conducted in phases, including:

1. Phase 1 - Emergency Roadway Clearance
 - a. Following a disaster, the top priority is to clear major roads and routes providing access to key population support facilities such as hospitals, to allow for the movement of emergency vehicles, resumption of critical services, and damage assessment. Emergency roadway clearance also facilitates the deployment of external response elements and delivery of emergency equipment and supplies. In initial roadway debris clearance, debris is normally pushed to the side of the road with no attempt to remove or dispose of it.
 - b. Local government is responsible for clearing city streets, county roads, and their rights of way. The Texas Department of Transportation (TxDOT) is responsible for clearing state and federal highways and the rights of way for such highways along with debris disposal resulting from the clearing process.

- c. In this phase, crews equipped with chain saws will generally be required to cut up downed trees and heavy equipment will be needed to move the remains. If possible, heavy equipment used for moving debris should be equipped with protective cabs and all personnel should wear protective equipment. Fire hydrants, driveway cutouts, and utility valves should be left unobstructed.
- d. Electrical systems are often damaged by the same hazards that create substantial debris, public works and engineering crews may need to coordinate their efforts to remove debris with utility crews.

2. Phase 2 – Debris Removal and Disposal

a. Debris Removal from Public Property.

- 1. In the aftermath of a disaster, it may be necessary to remove debris from a variety of public property, including:
 - a. Roads and rights of way.
 - b. Government buildings, grounds, and parking lots.
 - c. Parks and recreation facilities.
 - d. Storm drainage systems and reservoirs.
- 2. If the emergency situation resulted in a Presidential Disaster Declaration, the expense of debris removal from public property may be partially reimbursed by the federal government if the debris must be removed to:
 - a. Eliminate immediate threats to life, public health and safety.
 - b. Eliminate immediate threats of significant damage to improved public or private property.
 - c. Ensure economic recovery of the affected community.
Large-scale debris removal and disposal operations can be extremely costly. It is vital to determine if federal assistance will be provided and the rules that apply to such assistance before commencing debris removal operations. See the *DEM Texas Disaster Recovery Manual* for further information.
- 3. State law provides that state resources may not be used to clear or remove debris from local public property unless the local government presents the State an unconditional authorization for removal.

b. Debris Removal from Private Property.

- 1. Debris removal from private property, including demolishing condemned structures, is generally the responsibility of the property owner, and the cost may be wholly or partly covered by insurance. If there has been a Presidential Disaster Declaration and debris on private property is so widespread that public health, safety, or the economic recovery is threatened, local government may be partially reimbursed for the cost of debris removal from private property. Local government normally has responsibility for picking up and disposing of debris from private property placed at the curb and bears the cost of that effort.
- 2. When the Governor has issued a disaster declaration for an emergency situation, § 418.023 of the Government Code law provides that state resources may be used to remove debris from private property. As a general rule, the property owner must authorize removal of debris, grant unrestricted access, and indemnify the state against any claim resulting from the removal. As the Executive Order of the Governor Relating to Emergency Management provides that county judges and mayors who have issued a local disaster declaration may exercise the emergency powers of the Governor on an appropriate local scale, local governments may remove debris from private property subject to the same conditions cited above. Attachment 1 to this appendix provides a sample Debris Removal Access Agreement that should be used to meet statutory requirements.

B. Preparation for Debris Removal

Considerable time and labor can be saved in the debris removal process by sorting debris from public property and encouraging the public to sort debris from private property before it is picked up. A proactive public outreach program should advise the public of the actions they can take to facilitate pickup, including:

- 1. Sorting debris into categories – burnable natural debris, burnable construction and demolition debris, non-burnable debris, and potentially hazardous debris.

2. Placing sorted debris piles at curbside.
3. Keeping debris off roadways and away from fire hydrants and utility valves.
4. Disposing of household waste in normal refuse containers.

C. Estimating the Amount of Debris

In determining the means to be used to remove and dispose of debris, it is essential that local officials have a reasonable estimate of the amount of debris that must be removed and eventually disposed of. Attachment 3 to this appendix provides a methodology that may be used to estimate the amount of debris that must be removed.

D. Determining Debris Removal Strategy

1. After an estimate of the amount of debris that needs to be removed is made, options for removing the debris should be evaluated in terms of their cost and timeliness.
2. The general strategies for debris removal and processing are:
 - a. Removal and processing of debris by local government.
 1. Advantages:
 - Direct government control.
 2. Disadvantages:
 - Normally requires diversion of significant government resources from regular functions and makes them unavailable for other recovery tasks.
 - Speed of debris removal may be constrained by the government equipment and personnel available.
 - Local government may lack specialized equipment and skills needed to carry out all aspects of debris removal.
 - b. Removal and processing of debris by contractors.
 1. Advantages
 - Speed of debris removal may be increased by contracting for additional resources.
 - If local contractors are used, may provide local economic benefit.
 2. Disadvantages:
 - Requires detailed contracts.
 - Requires extensive oversight and inspection.
 - c. Removal and processing of debris by a combination of local government and contractors.
3. If contractors are used, the disaster area should be divided into geographic sectors for control purposes and bids solicited based on the estimated quantity of debris in each sector. In defining sectors, it is desirable to group properties of like type, construction, and with similar vegetation together. This will also facilitate estimating the quantity of debris that needs to be removed.
4. Debris may be removed by one-time collection of all debris at each property or using multiple passes to collect different types of material that have been pre-sorted by the property owner.

E. Establishing Temporary Debris Storage and Reduction (TDSR) Facilities.

1. The effective disposal of large quantities of disaster debris requires that suitable temporary storage and volume reduction facilities be established. Such facilities hold debris until it can be sorted, reduced in volume, and dispatched to an appropriate disposal facility. Sorting and volume reduction can significantly reduce the costs of disposing of debris and prevent potentially serious environmental problems.
2. Sorting. TDSR facilities sort debris and send it to the most appropriate facility for treatment or disposal. Sorting is needed to separate burnable from non-burnable materials and segregate hazardous products for disposal at authorized facilities and identify debris that can be burned, chipped or ground, recycled, or simply disposed of at a landfill without treatment.
3. The volume of debris can be greatly reduced by a variety of methods, including:
 - a. Incineration. This method includes open burning, use of air curtain pit incineration (trench burners), or use of portable air curtain incinerators. Incineration of burnable debris typically reduces its volume by 95 percent.
 - b. Chipping and grinding. Chipping and grinding is appropriate for clean, woody debris and typically reduces its volume by 75 percent. However, chipping and grinding normally

costs as much as incineration and unless the resulting mulch can be disposed of without cost or at a profit, local government may incur additional costs to have the residual material hauled to a landfill.

- c. Recycling. Recycling debris may present an opportunity to reduce the overall cost of disposal. Metals, lumber, and soil are the most likely candidates for recycling. Before local government attempts to operate a recycling operation, it is essential to determine if there is, in fact, a market for the materials sorted out in the recycling process; otherwise the output may simply have to be hauled to a landfill. Specialized contractors may be willing to undertake recycling, particularly if it involves large amounts of well sorted debris.

4. Site Selection

- a. Criteria pertinent to selecting TDSR facilities are:
 1. Preferably government owned.
 2. Large enough to accommodate a storage area, a sorting area, and volume reduction operations area(s).
 3. Reasonable proximity to disaster areas and debris disposal sites.
 4. Good road access.
 5. Not in a residential area or in the vicinity of schools, churches, or other facilities with concentrations of population.
 6. Not in an environmentally sensitive area, such as wetlands or a water well field.
- b. Local landfills and possible local sites for TDSR facilities are described in Attachment 2 to this appendix. The selection of specific sites to be used for TDSR facilities will normally be made by a team of local, state, and, where appropriate, federal personnel, who are familiar with the local area and the specific environmental regulations governing such facilities. Attachment 3 to this appendix provides methods for determining space requirements for TDSR sites and estimating the quantity of debris that must be disposed of after processing.

F. Public Information and Instructions

1. In the aftermath of an emergency situation, the Public Information staff should provide the public detailed information on debris removal and disposal plans and procedures. Providing appropriate instructions to the public concerning debris removal can significantly reduce the time and costs involved. Public information on debris removal must start as soon as possible after the disaster – before people start moving and stacking large amounts of debris.
2. Public instructions should encourage citizens to:
 - a. Assist their neighbors, particularly the elderly or infirm, in removing debris.
 - b. Move debris to curbside for pickup.
 - c. Separate debris into the categories determined by local officials.
 - d. Keep debris piles away from fire hydrant and utility valves.
3. Public information should keep citizens advised of:
 - a. Debris pickup schedules and the system of pickup, if various types of debris will be picked up on different days.
 - b. Self-help disposal guidelines for citizens and businesses that wish to haul their own debris to a debris storage area or landfill.
4. The normal methods of public information dissemination through the media should be used to provide information to the public. If loss of electric power has occurred, extra effort must be made to reach those without power using door hangers, flyers, signs, and, if necessary, door-to-door outreach.

G. Regulatory Issues and Technical Assistance

1. The Texas Commission on Environmental Quality (TCEQ) regulates the disposal of waste, including hazardous waste. TCEQ also issues emergency permits for debris incineration. Hence, the advice and assistance of TCEQ should be obtained in developing and implementing plans for debris disposal.
2. The Texas Department of State Health Services (DSHS) is the state agency responsible for

ensuring food safety. The assistance of DSHS should be sought when there are questions regarding the safety of foodstuffs in damaged retail stores, warehouses, and processing facilities. DSHS has the authority to condemn unsafe foodstuffs so that they can be disposed of.

3. The Texas Animal Health Commission (TAHC) can provide advice and assistance regarding the disposition of dead animals. TAHC may also help identify stray live animals so they can be returned to their owners.

5. Organization

A. Phase 1 - Emergency Roadway Clearance

During Phase 1, our normal emergency organization as outlined in the Section VI.A of the Basic Plan and this annex should coordinate debris clearance operations. Debris clearance will normally be managed from the EOC. However, if debris is localized, an incident command operation may be established at the incident site to manage debris clearance.

B. Phase 2 - Debris Removal and Disposal

1. For small-scale debris removal and disposal operations, our normal emergency organization as outlined in the Basic Plan and this annex may coordinate debris removal and disposal.
2. For major emergencies or disasters that result in large volumes of debris, removal and disposal may have to continue for an extended period. For these situations, a Debris Management Task Force, consisting of personnel from those departments and agencies having the required expertise, shall be formed to manage debris removal and disposal operations. The Task Force should be comprised of personnel to perform the following functions:
 - a. Operations: Plan debris removal and processing, manage the use of government resources, and monitor the use of contract resources committed to the task.
 - b. Contracting & Procurement: Develop contracts for services and/or equipment, obtain bids, and award contracts.
 - c. Legal: Contract review, manage authorizations for debris removal, and prepare legal documents for building condemnation and land acquisition.
 - d. Administration: Provide supply, administrative, and accounting support.
 - e. Engineering: Damage assessment, develop scopes of work and specifications for contracts, and prepare cost estimates.
 - f. Public Information: Provide information and instructions relating to debris removal to the public.

It may be desirable to organize the Debris Management Task Force as an ICS operation under an Incident Commander.

3. If the government uses its own resources to remove debris, the primary role of the operations staff is to plan and supervise debris removal. If contractors will be removing debris, then the primary role of the operations staff is to monitor contractor work and ensure contract provisions are followed.

6. Task Assignments

A. Phase 1 - Emergency Roadway Clearance

Task assignments shall be as stated in Section VI.B of this annex.

B. Phase 2 - Debris Removal and Disposal Phase

Task assignments shall be determined by the Debris Management Task Force leader. General tasks of the various components of the Task Force are described in the Chapter 3 of the *FEMA Debris Management Guide* (FEMA-325).

Attachment 1

Debris Removal Access Agreement

I/We _____, the owner(s) of the property
commonly identified as _____,
(street address)

_____, State of Texas
(city/town) (county)

do hereby grant and give freely and without coercion, the right of access and entry to said property to the County/City of _____, its agencies, contractors, and subcontractors thereof, for the purpose of removing and cleaning any or all storm-generated debris of whatever nature from the above described property.

It is fully understood that this agreement is not an obligation to perform debris clearance. The undersigned agrees and warrants to hold harmless the City/County of _____, State of Texas, its agencies, contractors, and subcontractors, for damage of any type, whatsoever, either to the above described property or persons situated thereon and hereby release, discharge, and waiver any action, either legal or equitable that might arise out of any activities on the above described property. The property owner(s) will mark any storm damaged sewer lines, water lines, and other utility lines located on the described property.

I/We (have _____, have not _____)(will _____, will not _____) received any compensation for debris removal from any other source including Small Business Administration (SBA), National Resource Conservation Service (NRCS), private insurance, individual and family grant program or any other public assistance program. I will report for this property any insurance settlements to me or my family for debris removal that has been performed at government expense. For the considerations and purposes set forth herein, I set my hand this _____ day of _____ 20____.

Owner

Owner

Telephone No. Address

Witness

Attachment 2

Landfills & Potential Temporary Debris Storage and Reduction (TDSR) Sites

1. Landfills

- a. Name: Town of Van Horn Landfill
 - 1) Address:
 - 2) Operated by Town of Van Horn
 - 3) Estimated capacity remaining (cubic yards):
 - 4) Estimated daily processing capacity: 20 tons/daily
 - 5) Normal operating schedule: 8-12 1-5 M-F
 - 6) Restrictions: Type 1 Air exempt
 - 7) Fees: Refer to Town of Van Horn Fee schedule
 - 8) Other Factors:
- b. Name:
 - 1) Address
 - 2) Operated by
 - 3) Estimated capacity remaining (cubic yards)
 - 4) Estimated daily processing capacity:
 - 5) Normal operating schedule:
 - 6) Restrictions
 - 7) Fees
 - 8) Other Factors:

2. Possible TDSR Facilities

- a. Name:
 - 1) Address
 - 2) Owner:
 - 3) Site size (acres):
 - 4) Fenced?
 - 5) Road access:
 - 6) Neighbors
 - 7) Environmental concerns:
- b. Name:
 - 1) Address
 - 2) Owner:
 - 3) Site size (acres):
 - 4) Fenced?
 - 5) Road access:
 - 6) Neighbors
 - 7) Environmental concerns:

Attachment 3

Debris

Estimation

This attachment contains the following tabs:

1) **Tab A- Estimating Debris Quantity.**

This tab includes two worksheets (Worksheet 1 and Worksheet 2) which outline a methodology that can be used to estimate the quantity of debris produced by a disaster. The methodology allows the user to estimate the debris in various geographic areas (sectors) and then sum the amount of debris in each sector to determine the overall volume of debris that must be dealt with. The sectors developed in this process can be used in operational planning and contracting. To the extent possible, sectors should be drawn to encompass areas with buildings of similar construction and vegetative cover.

The methodology in this tab should not be used for hurricane debris; use the methodology in Tab E instead.

2) **Tab B - Estimating Debris Removal Time.** This tab includes two worksheets (Worksheet 3 and Worksheet 4). The worksheets provide a methodology that can be used to estimate the time in days that it will take to remove specific quantities of debris given a known set of hauling resources and a reasonable estimate of the cycle time for those resources (time spent in pickup, hauling, unloading, and, waiting on one trip).

3) **Tab C - Estimating Debris Disposal Quantity.** Worksheet 5 outlines a method to determine the volume of debris that will have to be disposed of after sorting and volume reduction, given information on the composition of debris that must be disposed of. To utilize this methodology, you must remove a sample of debris in each sector and sort it to determine the characteristics of the debris from that sector. If the sample of debris is not representative of debris in the sector, this method will be inaccurate.

4) **Tab D - Estimating Requirements for Debris Processing.** Worksheet 6 can be used to estimate how much space will be required for temporary debris storage and reduction facilities. This worksheet is based on a US Army Corps of Engineers methodology.

5) **Tab E - Estimating Hurricane Debris Quantity.** Worksheet 7 can be used to estimate the quantity of debris produced by a hurricane. This worksheet is based on US Army Corps of Engineers methodology.

Tab A

ESTIMATING DEBRIS QUANTITY

Complete a separate Worksheet 1 for each Sector.
Transfer results from each Worksheet 1 to Worksheet 2.
CF = cubic feet & CY = cubic yards

Use Tab E for Estimating Hurricane Debris

WORKSHEET 1					
Sector:					
Description:		N = Number	M = Multiplier	CY = (N x M)	
A. Homes (1800-2000 square feet)		100	300	30000	
B. Mobile Homes		130	80	10400	
C. Other Buildings	L = Length/ft	W = Width/ft	H = Height/ft	CF = (L x W x H)	CY = (CF/27) x .33
Apex Center	250	60	10	150000	1833
Anchor Fire Station	100	100	12	120000	1467
Teasdale School	125	100	10	125000	1527
Subtotal [sum the right column]					4827
D. Debris Piles	L = Length/ft	W = Width/ft	H = Height/ft	CF = (L x W x H)	CY (CF/27)
Crystal Creek @ Compton	150	8	4	4800	177
Hungry Hollow Bridge	80	20	8	12800	474
Willow Road @ Newton	100	16	5	8000	296
Subtotal [sum the right column]					947

WORKSHEET 2	Sector A	Sector B	Sector C	Sector D
<i>Debris Volume Estimate (cubic yards/CY)</i>				
A. Homes [from Worksheet 1]	30000	4200		
B. Mobile Homes [from Worksheet 1]	10400	2400		
C. Other Buildings [from Worksheet 1]	4827	1021		
SD = Structural debris (A + B + C)	45227	7621		
V = Vegetation Multiplier [see note]	1.3	1.1		
ST = Subtotal (SD x V)	58795	8383		
D. Debris Piles [from Worksheet 1]	947	1200		
E. SV = Sector Volume (ST + D)	59742	9583		
TOTAL [add entries in row E above]	69325			

Note:

V= Vegetative Multiplier:	<u>Vegetative Cover</u>	<u>V =</u>
	None	1
	Light	1.1
	Medium	1.3
	Heavy	1.5

Tab B
ESTIMATING DEBRIS REMOVAL TIME

Worksheets 3 and 4 may be used to estimate the time it will take to remove a quantity of debris given information on the quantity and capacity of the hauling resources available and estimates of the cycle time for those resources. Cycle time is the time it takes a cargo truck to complete a round trip. Cycle time is computed by adding the time it takes to load a truck, the round-trip travel time between the loading point and the off-load point, unloading time, and any unproductive waiting time. This methodology will be most accurate if you use times observed during actual operations, not theoretical numbers.

WORKSHEET 3	Sector A	Sector B	Sector C	Sector D
A. Debris to be Removed in cubic yards (CY) from Worksheet 2 or 7	59742	9583		
<i>Removal Cycle (all times in hours)</i>				
B. Estimated loading time	.2	.2		
C. Estimated travel time (roundtrip)	.4	.6		
D. Estimated unload time	.1	.1		
E. Estimated waiting time	.1	.1		
F. Cycle time (B+C+D+E)	.8	1.0		
G. Daily work period	7.5	7.5		
H. Cycles per day (G / F)	9	7		
<i>Removal Time</i>				
I. Capacity (CY) per cycle [Worksheet 4]	136	136		
J. Capacity (CY) per day [H x I]	1224	952		
K. Days to Clear Sector [A / J]	48.8	10.0		
L. Days to Clear All Sectors [add entries in Row K above]	58.8			

WORKSHEET 4	A. Truck Capacity (CY)	B. Units Available	C. Group Capacity (AxB)
<i>Equipment</i>			
Dump Truck, Light	6	4	24
Dump Truck, Medium	8	4	32
Dump Truck, Heavy	10	8	80
Capacity Per Cycle (CY) [sum the right column]			136

Note: In estimating units available, it is essential to consider that some equipment may not operationally ready each day. Hence, an out-of-service factor based on local experience should be applied to obtain a realistic estimate of equipment available for use on a daily basis.

Tab C
ESTIMATING DEBRIS DISPOSAL QUANTITY

Worksheet 5 provides a method of estimating the volume of debris that will have to be disposed of after volume reduction. It requires taking a sample of the debris in each sector to determine the percent of burnable debris (B below), the percent of burnable C&D debris (C below), the percent of non-burnable debris (D below) broken down by recyclable materials (D-1) and other material (D-2), and the percent of hazardous debris. In taking a sample, it is desirable to include debris from at least 10 properties.

Worksheet 5	Sector 1	Sector 2	Sector 3	Sector 4
<i>Sample Debris Characteristics</i>				
A. Debris volume [from Worksheet 2]	59742	9583		
B. % Burnable Natural Debris	.30	.40		
C. % Burnable C&D Debris	.32	.28		
D. % Non-Burnable Debris	.35	.32		
D-1. Potentially Recyclable	.07	.10		
D-2. Landfill	.28	.20		
E. % Hazardous Debris	.03	.02		
<i>Disposal Volume (cubic yards)</i>				
F. Burnable Natural Debris $_{(A \times B)}$	17922	3833		
F-1. Amount to be chipped/ground ¹	200	0		
F-2. Amount to be burned	17722	3833		
G. Burnable C&D Debris $_{(A \times C)}$	19117	2683		
H. Total Burnable $_{(F-2 + G)}$	36839	6516		
I. Volume for disposal after burning $_{(H \times .05)}$	1841	326		
J. Volume for disposal after chipping or shredding $_{(F-1 \times .25)}$	50	0		
K. Non-Burnable Debris $_{(A \times D)}$	20910	3067		
L. Less Non-Burnables to be Recycled ²	5400	767		
M. Volume of Non-Burnables for Disposal $_{(K - L)}$	15510	2300		
N. Volume (Non-hazardous) for Landfill Disposal $_{(I + J + M)}$ ³	17401	5693		
N. Total for Landfill Disposal [add quantities in row N above]	23094			
O. Volume for Hazmat Disposal $_{(A \times E)}$	1792	191		
P. Total for Hazmat Disposal [add quantities in row O above]	1983			

Notes:

1. Local officials need to decide how much debris to chip or grind instead of burning. The quantity should be based on a) the amount of chipped/ground wood that local government wants to retain for use as mulch and b) the amount that can be disposed of without cost or at some profit to landscape products firms. Since chipping and grinding costs approximately the same as burning and produces a higher volume of residue, there is little reason to chip and grind instead of burning if you also have to pay to have the resulting mulch hauled away.
2. This number should be based on the proportion of recyclable materials for which you can determine there is a ready market. Recycling materials for which there is no market simply leaves you sorted debris to haul to the landfill.
3. If mulch produced in the chipping and grinding operation is hauled away without cost, do not include it (item J) in the equation because disposal of that material is no longer your problem.

Tab D
ESTIMATING REQUIREMENTS FOR DEBRIS STORAGE & PROCESSING SITES

This methodology may be used to determine the space required for debris storage and processing sites.

It assumes that:

1. Debris will be stacked 10 feet high.
2. 40 percent of a site will be used for storage; 60 percent will be used for sorting areas, separation between debris piles, roads, site buffers, and burn pits

WORKSHEET 6	
A. Debris Volume in cubic yards (CY) [From Worksheet 2 or 7]	69325
B. CY per acre assuming 10' stack height ¹	16117
C. Acres for debris storage only (A/B)	4.3
D. Multiplier for processing, roads, & buffers	1.66
E. Required facility area in acres ²	7.1

Notes:

1. If you plan to use a stack height other than the typical 10 feet, use the following formula to compute CY per acre:

$$CY = (\text{stack height in feet} / 3) \times 4840$$

2. Where the area requirement is large, the requirement is generally satisfied by establishing several sites that, taken collectively, provided the needed area.

Tab E
ESTIMATING HURRICANE DEBRIS QUANTITY

Worksheet 7 may be used to estimate the quantity of debris that must be removed. This worksheet uses the formula $Q = H \times C \times V \times B \times S$ where:

- Q = the quantity of debris in cubic yards (CF)
- H = the number of households
- C = the storm factor in CY:
- V = the vegetation characteristic multiplier:
- B = the business/commercial use multiplier
- S = the storm precipitation characteristic multiplier

WORKSHEET 7	Sector A	Sector B	Sector C	Sector D
<i>Debris Volume Estimate - Hurricane</i>				
1. H = households	5167	2100		
2. C = Storm category	26	8		
3. V = Vegetation multiplier	1.5	1.1		
4. B = Business/commercial multiplier	1.3	1.0		
5. S = Storm precipitation multiplier	1.3	1.3		
6. Q = H x C x V x B x S	340557	24024		
TOTAL (add columns in item 6 above)	364581			

Notes:

1. H = Households. If you do not know the number of households, estimate the number by dividing the population of the area by 3.

- | | | |
|---|-------------------------|------------|
| 2. C = Hurricane Category | <u>Category</u> | <u>C =</u> |
| | 1 | 2 |
| | 2 | 8 |
| | 3 | 26 |
| | 4 | 50 |
| | 5 | 80 |
| | | |
| 3. V= Vegetative Multiplier | <u>Vegetative Cover</u> | <u>V =</u> |
| | None | 1 |
| | Light | 1.1 |
| | Medium | 1.3 |
| | Heavy | 1.5 |
| | | |
| 4. B = Business/Commercial Density Multiplier | <u>Density</u> | <u>B =</u> |
| | Light | 1.0 |
| | Medium | 1.2 |
| | Heavy | 1.3 |
| | | |
| 5. S = Storm Precipitation Multiplier | <u>Precipitation</u> | <u>S =</u> |
| | None to Light | 1.0 |
| | Medium to Heavy | 1.3 |