

# DEBRIS MONITORING

Adapted From A FEMA  
Presentation for  
Applicants

USACE Virtual Debris Training

5 August 2021



US Army Corps  
of Engineers  
Portland District



## OVERVIEW

Monitoring debris removal operations requires comprehensive **observation and documentations by the Public Assistance applicant** of debris removal work performed from the point of debris collection to final disposal.

Monitoring debris removal work **involves constant observation** of crews to ensure that workers are performing eligible work in accordance with Public Assistance guidelines, and helps to verify compliance with all applicable Federal State, and local regulations.



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# MONITORING REFERENCES

## 44 CFR 13.20(2) Accounting Records

- Identify Source and Application of Funds Provided for Financially-Assisted Activities

## 44 CFR 13.40 Monitoring and Reporting Program Performance

- *Requirement to Adequately Monitor Debris Operations*



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# MONITORING – DEBRIS REMOVAL OPERATIONS

## Roles of your Monitors

- Your representative
- Your eyes and ears
- Make or break a debris operation
- Every time a monitor signs a load ticket, they are writing a check



# DEBRIS MONITORING

Chain of Command

Truck Management / Placards

Debris Loading Quality Assurance

Inspection Tower and Site Setup

Site Management

Safety Reminders



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# CHAIN OF COMMAND

Who has the authority to direct the Contractor's operation?

Who will you be reporting to and taking direction from?

Know the established working hours to cover the debris mission.



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## **TRUCK MANAGEMENT / PLACARDS**

### **Truck Volume Measurement:**

**Length x width x height / 27 = cubic yard. Subtract the hydraulic box (dog house) from total volume.**

**Document if truck has side boards or not. Measure and note the above information in the truck certification form. Photos work well to establish the condition of the truck / trailer at the time of certification.**

### **Trucks and Trailers must have tailgates**

### **Installation of Placards on each truck:**

**Placards are installed on each side, written very clearly so field crews and inspectors can read from distances.**

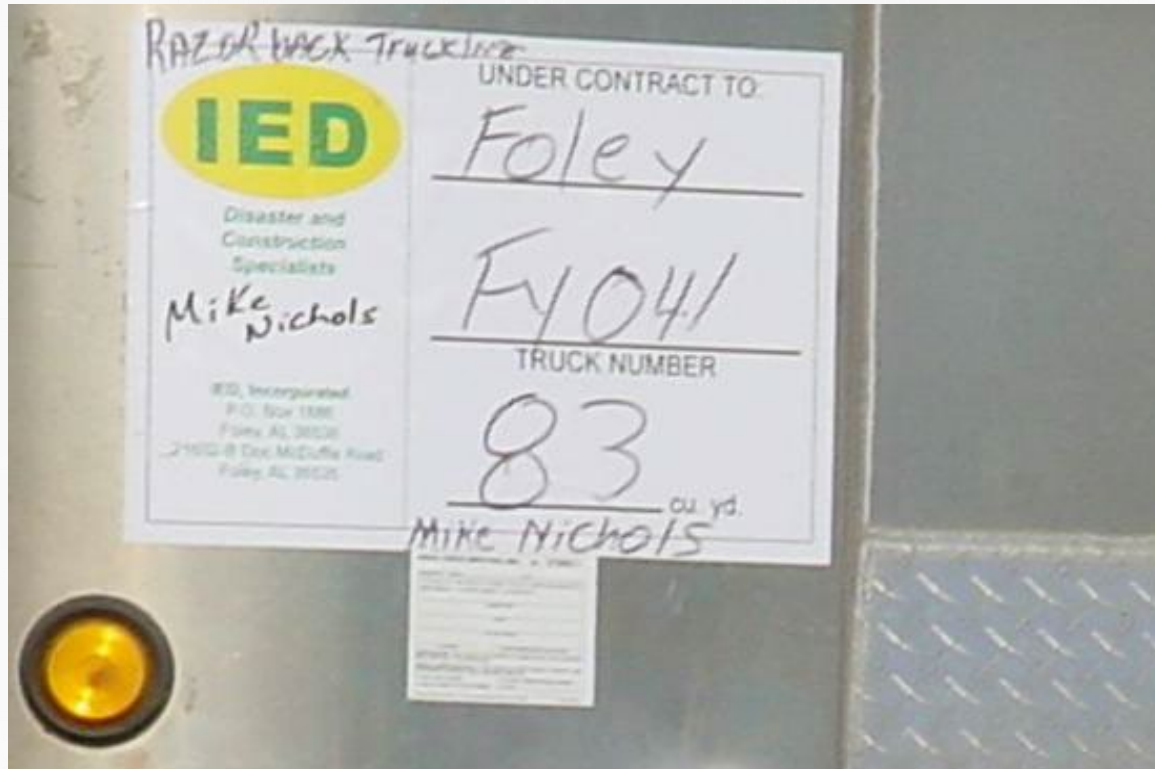


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# TRUCK PLACARD



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## TRUCK MEASUREMENTS



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# DEBRIS MONITORING

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# ELIGIBLE DEBRIS LOADING ISSUES

## General Criteria

- Threat to public health & safety
- Direct result of declared event
- Within maintained Public Property
  - Public ROW
  - Public maintained property such a government offices, schools, parks etc.
- Applicant's legal jurisdiction and responsibility at time of disaster



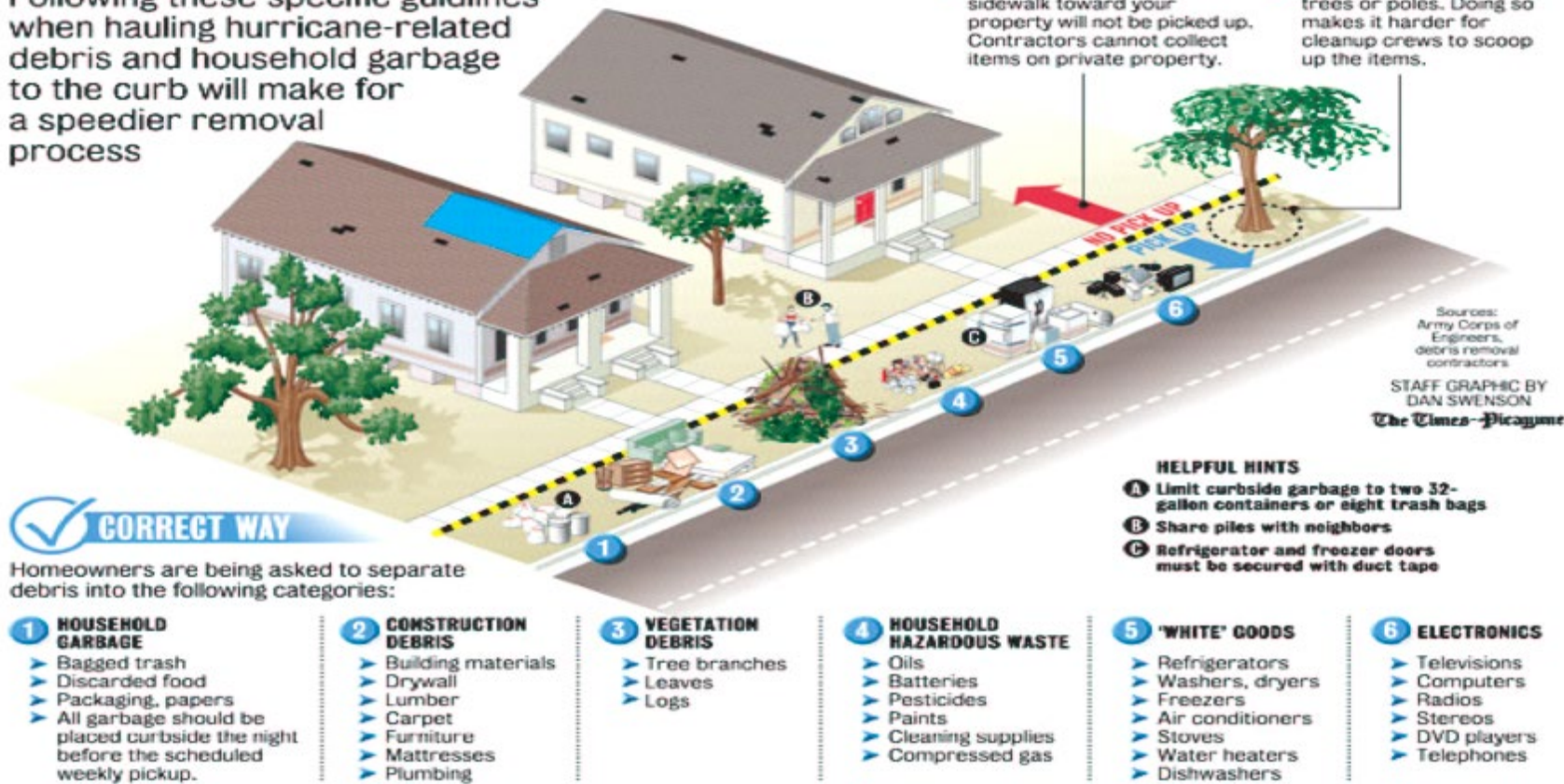
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# Curbside Pickup

## PICKING UP THE PIECES

Following these specific guidelines when hauling hurricane-related debris and household garbage to the curb will make for a speedier removal process



### WRONG WAY

#### CROSSING THE LINE

Any debris placed from the sidewalk toward your property will not be picked up. Contractors cannot collect items on private property.

#### PROPPING UP

Do not set debris against trees or poles. Doing so makes it harder for cleanup crews to scoop up the items.

### CORRECT WAY

Homeowners are being asked to separate debris into the following categories:

- |  |  |   |  |  |  |
|--|--|---|--|--|--|
| <p><b>1 HOUSEHOLD GARBAGE</b></p> <ul style="list-style-type: none"> <li>▶ Bagged trash</li> <li>▶ Discarded food</li> <li>▶ Packaging, papers</li> <li>▶ All garbage should be placed curbside the night before the scheduled weekly pickup.</li> </ul> | <p><b>2 CONSTRUCTION DEBRIS</b></p> <ul style="list-style-type: none"> <li>▶ Building materials</li> <li>▶ Drywall</li> <li>▶ Lumber</li> <li>▶ Carpet</li> <li>▶ Furniture</li> <li>▶ Mattresses</li> <li>▶ Plumbing</li> </ul> | <p><b>3 VEGETATION DEBRIS</b></p> <ul style="list-style-type: none"> <li>▶ Tree branches</li> <li>▶ Leaves</li> <li>▶ Logs</li> </ul> | <p><b>4 HOUSEHOLD HAZARDOUS WASTE</b></p> <ul style="list-style-type: none"> <li>▶ Oils</li> <li>▶ Batteries</li> <li>▶ Pesticides</li> <li>▶ Paints</li> <li>▶ Cleaning supplies</li> <li>▶ Compressed gas</li> </ul> | <p><b>5 'WHITE' GOODS</b></p> <ul style="list-style-type: none"> <li>▶ Refrigerators</li> <li>▶ Washers, dryers</li> <li>▶ Freezers</li> <li>▶ Air conditioners</li> <li>▶ Stoves</li> <li>▶ Water heaters</li> <li>▶ Dishwashers</li> </ul> | <p><b>6 ELECTRONICS</b></p> <ul style="list-style-type: none"> <li>▶ Televisions</li> <li>▶ Computers</li> <li>▶ Radios</li> <li>▶ Stereos</li> <li>▶ DVD players</li> <li>▶ Telephones</li> </ul> |
|--|--|---|--|--|--|

#### HELPFUL HINTS

- A** Limit curbside garbage to two 32-gallon containers or eight trash bags
- B** Share piles with neighbors
- C** Refrigerator and freezer doors must be secured with duct tape

Sources:  
Army Corps of Engineers, debris removal contractors  
STAFF GRAPHIC BY DAN SWENSON  
*The Times-Picayune*

# LOADING TRUCKS

## Machine Loads

- Loaders should have height capability to “compact” load into truck/trailer.
- Mechanical loaders
  - Include Front-end loaders such as Bobcats and Knuckle-Boom type loaders



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# WHY NO-HAND LOAD POLICY?

Vertical “Fluff” Loads are the Norm



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# STUMPS

## Validation

### – Pre Validation

- Lists with GPS locations to provide to FEMA monitors.

### – Post Validation

- Lists, Pictures, Descriptions, etc

## Eligibility

- Uprooted 50% or more, and poses an immediate threat to life, public health and safety; on a public ROW, improved public property or improved property
  - 24 inches and above, removed on a per stump cost
  - 24 inches and below, removed at a unit cost rate of veg debris. **Note: All stumps are to be measured two feet above normal ground level.**
- Uprooted 50% or less, and poses an immediate threat to life, public health and safety; on a public ROW, improved public property or improved property of a PNP
  - Flush cut. Cut portion as a unit cost rate of veg debris



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# STUMPS

Covered under 9523.11 Stump Policy

Grinding of stumps meeting other eligibility criteria

- Typically is not eligible. On rare occasions FEMA may consider requests on a case by case basis and must be the most cost effective method. Must be validated by FEMA monitors.



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# STUMPS (CONT)

## FEMA Hazardous Stump Worksheet

Applicant: \_\_\_\_\_

Date: \_\_\_\_\_

Applicant Representative: \_\_\_\_\_

Signature: \_\_\_\_\_

FEMA Representative (If Available): \_\_\_\_\_

Signature: \_\_\_\_\_

State Representative (If Available): \_\_\_\_\_

Signature: \_\_\_\_\_

	Physical Location Street Address/Road/Cross Streets	Description of Facility (ROW, City Hall, etc.)	Hazard?		GPS Decimal Degrees (00.000000)		Tree Size (Diameter)	Eligible?		Fill for Debris Stumps CY	Comments See Attached Sketch Photo, etc.
			Yes	No	Latitude (N)	Longitude (W)		Yes	No		
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											



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# LEANERS

## Validation/Eligibility

### – Pre Validation

- Lists with GPS locations to provide to FEMA monitors.

### – Post Validation

- Lists, Pictures, Descriptions, etc

## Contracts

### – Unit Cost per Tree

### – Unit Cost as Debris

- Based on experience in dealing with storms over the past few years cradle to grave contracts including disposal, are less confusing and more efficient.



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# HANGERS

## Validation/Eligibility

### – Pre Validation

- *Lists with GPS locations to provide to FEMA monitors.*

### – Post Validation

- *Lists, Pictures, Descriptions, etc*

### – Eligibility

- 2” or greater at the break

## Contracts

### – Unit Cost per hanger or “hanger tree”

- Preferred contract by “Hanger Tree”, with single or split scope

### – Based on experience in dealing with storms over the past few years, cradle to grave contracts including disposal, are less confusing and more efficient.



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## HANGERS (CONT)



Find the hanger! Is it eligible?



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# HANGERS (CONT)

## FEMA Hazardous Hangers Worksheet (Contracted per Hanger/Hangers)

Applicant: \_\_\_\_\_

Date: \_\_\_\_\_

Applicant Representative: \_\_\_\_\_

Signature: \_\_\_\_\_

FEMA Representative (If Available): \_\_\_\_\_

Signature: \_\_\_\_\_

State Representative (If Available): \_\_\_\_\_

Signature: \_\_\_\_\_

	Physical Location Street Address/Road/Cross Streets of Tree	Description of Facility (ROW, City Hall, etc.)	Hazard?		GPS Decimal Degrees (00.000000)		Number of Hangers	Eligible?		Comments See Attached Sketch Photo, etc.
			Yes	No	Latitude (N)	Longitude (W)		Yes	No	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										



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## DEBRIS LOADING

Picture of truck being loaded



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# DEBRIS TICKETS

## Load Tickets:

Need to be simple and legible.

Need to indicate the location the debris was picked up.

Need to indicate type of debris.

Do not issue tickets for ineligible debris.

Always protect as if it were your own checkbook as it represents a form of payment verification.





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# LOADING TICKETS



	<b>Debris Load Ticket</b>
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Contractor: <u>P&amp;J</u>	
Contract No.: <u>DACW 0157398</u>	
Driver: <u>Pierce</u>	Truck No.: <u>27</u>
Truck Capacity: <u>20</u> y. <input type="checkbox"/> tons	
<b>LOADING</b> Date: <u>7/30/05</u>	
Location: <u>110 3rd St</u>	
<b>Load Classification:</b>	
<input checked="" type="checkbox"/> Vegetative	<input type="checkbox"/> Construction & Demolition
<input type="checkbox"/> Mixed	<input type="checkbox"/> HHW
<input type="checkbox"/> Other	<input type="checkbox"/> White Metals
<b>Distance to Drop Off Point</b>	
<input checked="" type="checkbox"/> <0-15 miles	<input type="checkbox"/> >15-30
<input type="checkbox"/> Other	<input type="checkbox"/> >30-60
Time Released: <u>0850</u> a.m. <input checked="" type="checkbox"/> p.m.	
Inspector: _____	
<b>DROP OFF</b>	
Time Arrived: <u>0918</u> a.m. <input type="checkbox"/> p.m.	
Dumpsite: <u>Fairgrounds</u>	
Load Amt: <u>18</u> y. <input type="checkbox"/> tons	
Inspector: <u>[Signature]</u>	
Orig: USACE	Ticket Number
Yellow: Driver	
Pink: Prime Contractor	
Green: Other	
Accountable Document	H- 2543

A Load Ticket with **LEGIBLE** handwriting



	<b>Debris Load Ticket</b>
US Army Corps of Engineers	
Contractor: <u>[Illegible]</u>	
Contract No.: <u>[Illegible]</u>	
Driver: <u>[Illegible]</u>	Truck No.: <u>[Illegible]</u>
Truck Capacity: <u>[Illegible]</u> y. <input type="checkbox"/> tons	
<b>LOADING</b> Date: <u>[Illegible]</u>	
Location: <u>[Illegible]</u>	
<b>Load Classification:</b>	
<input checked="" type="checkbox"/> Vegetative	<input type="checkbox"/> Construction & Demolition
<input type="checkbox"/> Mixed	<input type="checkbox"/> HHW
<input type="checkbox"/> Other	<input type="checkbox"/> White Metals
<b>Distance to Drop Off Point</b>	
<input checked="" type="checkbox"/> <0-15 miles	<input type="checkbox"/> >15-30
<input type="checkbox"/> Other	<input type="checkbox"/> >30-60
Time Released: <u>[Illegible]</u> a.m. <input type="checkbox"/> p.m.	
Inspector: _____	
<b>DROP OFF</b>	
Time Arrived: <u>[Illegible]</u> a.m. <input type="checkbox"/> p.m.	
Dumpsite: <u>[Illegible]</u>	
Load Amt: <u>[Illegible]</u> y. <input type="checkbox"/> tons	
Inspector: <u>[Illegible]</u>	
Orig: USACE	Ticket Number
Yellow: Driver	
Pink: Prime Contractor	
Green: Other	
Accountable Document	H- 2546

A Load Ticket with **ILLEGIBLE** handwriting

# DEBRIS MONITORING

Chain of Command

Truck Management / Placards

Debris Loading Quality Assurance

Inspection Tower and Site Setup

Site Management

Safety Reminders



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# INSPECTION TOWER AND SITE SETUP

Tower location to inspect trucks entering and leaving site.

Incineration locations and grinding sites:

✓ Check prevailing winds and maintain at least a 200 – 300 foot buffer zones.

Traffic flow and equipment.



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# INSPECTION TOWER AND SITE SETUP



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# ESTIMATING LOADS



10623 FM 1442, Orange, TX 77630, United States



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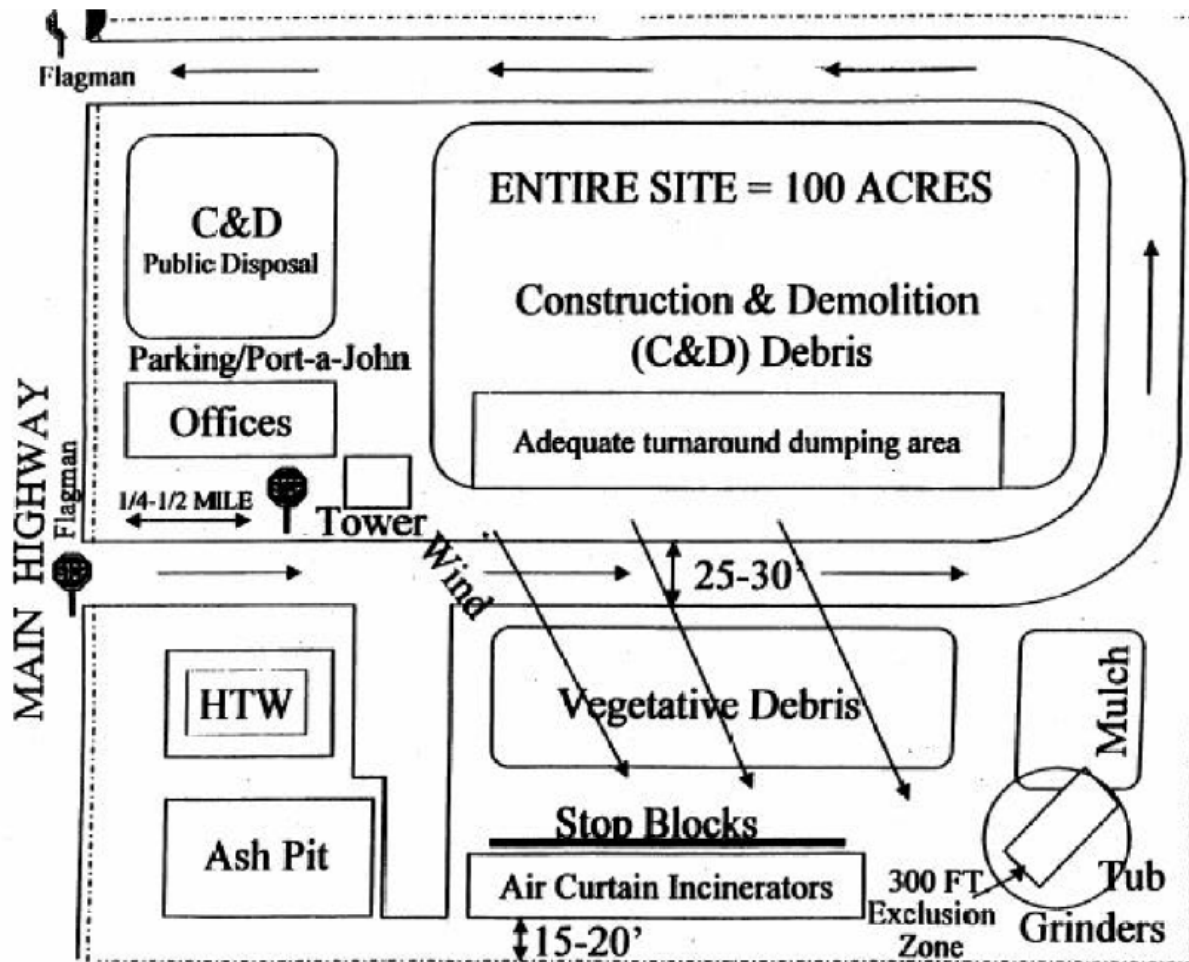
Safety Reminders



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# TYPICAL SITE PLAN



TYPICAL TDSR REDUCTION SITE LAYOUT

# VOLUME VS WEIGHT

CY is a very subjective call at best

- Even experienced monitors call loads at higher than actual volume

Weight is the best method

- Cost will be more accurate
- Cleanup will be faster
  - Contractor will pick up EVERYTHING. Still need to monitor closely
- Easier to monitor
- FEMA WILL reimburse for the use of portable scales



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# REDUCTION



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# DEBRIS REDUCTION

## Open Burning

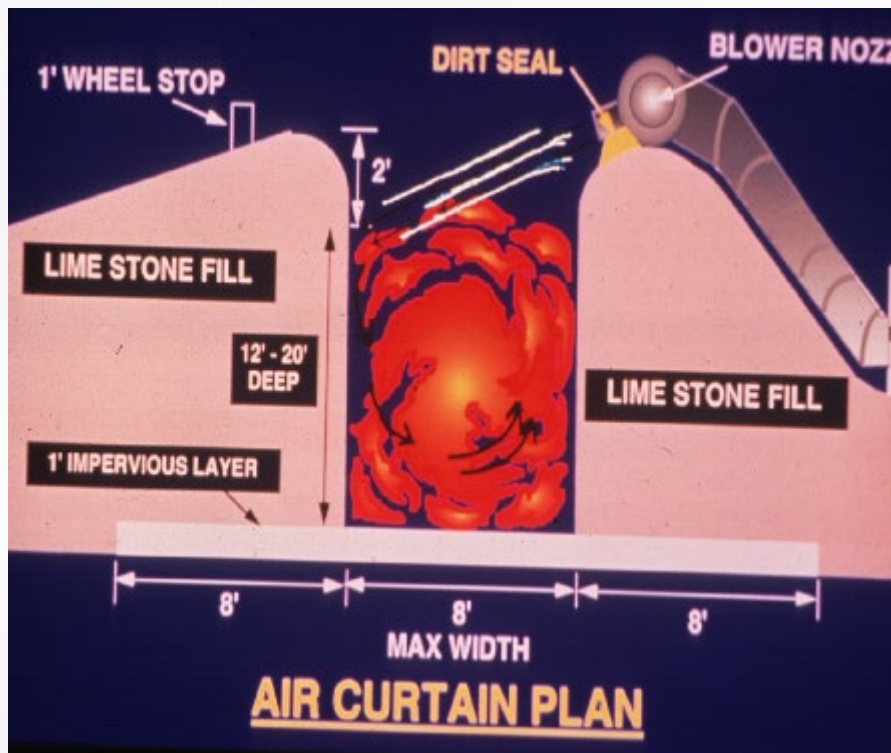
- Clean, Woody Debris
- Rural Areas
- Ash-Soil Additive

## Air Curtain Pit Incineration

- Substantial Volume Reduction
- Reduced environmental Concerns

## Portable Air Curtain Incinerators

- Pre-manufactured pit



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# BURNING / INCINERATION



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# CHIPPING AND GRINDING

## Vegetative Debris Reduction Differences

- Burning -95%
- Chipping/Grinding – 75%

## Remaining Volume Should Have Benefit or Use

- Recycling Wood Chips for Mulch or for Boiler Fuel

## Supports Environmental Concerns



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# DEBRIS MONITORING

Chain of Command

Truck Management / Placards

Debris Loading Quality Assurance

Inspection Tower and Site Setup

Truck Scale Implementation

Safety Reminders



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# SAFETY REMINDERS

- Become familiar with county, state and federal safety requirements concerning debris removal operations.
- Require all employees to use the necessary Personal Protective Equipment-PPE.
- ✓ Hard hats, gloves, steel toe boots, chain-saw safety leg chaps, safety vest, hearing and eye protection
- Be current on immunization shots, medical records etc.
- Have available personal health care items, sun screen, sun glasses, first aid kits, water, etc.
- Have emergency phone numbers available for all employees, become familiar with hospital and health care providers locations.



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# SAFETY REMINDERS

- Know and understand limits of safe equipment operation hours, for example, safe daylight working hours and always consider weather conditions.
- Traffic control measures, knowledgeable personal and equipment necessary to execute proper traffic control operations, in accordance with state, county and city laws.
- Safe equipment operations, obey general safety guidelines, do **not** work boom equipment within 10 feet of electrical power lines. Make sure safety guards and safety warning decals are installed in accordance with manufacture's recommendations.



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# QUESTIONS



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