

**Hurricanes Katrina and Rita
FEMA-DR-1603/1607-LA
Information Sheet # 018**

STUMP REMOVAL

The Public Assistance Program provides for the removal of debris from public and private property when the removal is necessary to eliminate immediate threats to life, public health and safety; to eliminate immediate threats of significant damage to improved public or private property; or to ensure economic recovery of the affected community to the benefit of the community at large. For consideration, stumps must be located on a public right-of-way (ROW), improved public property, improved property owned by certain eligible private nonprofit organizations, or in limited cases, on other improved private property.

When a disaster event uproots trees at eligible locations and the root ball is more than 50% exposed, FEMA may provide supplemental assistance to extract, transport, and dispose of the eligible stump and root ball and fill the root cavity. FEMA does not consider stumps with less than 50% of their root ball exposed as hazardous. Such stumps should be cut flush at ground level and the cut portion disposed of with regular vegetative debris.

When stump removal is necessary, it must be done by the most economical means possible unless FEMA determines that archeological or historic preservation requirements necessitate a more costly removal method. Straightening or bracing of trees is not eligible for reimbursement.

FEMA Policies 9523.13 and 9523.14 describe special procedures for debris removal from private property. As of January 12, 2006, most parishes were operating under FEMA Policy 9523.14. Applicants must comply with FEMA Policy 9523.13 in order to be eligible for debris removal from private property for economic recovery purposes. Disaster Specific Guidance #3 and #6 identify the parishes eligible for private property debris removal. Additional parishes may be eligible for private property debris removal - consult the Debris Section prior to preparing project worksheets for stump removal in other parishes.

Applicants and debris monitors are responsible for assuring that requested reimbursement is in accordance with these instructions.

Stumps on a Right of Way

Uprooted stumps placed on eligible rights of way will be removed and reimbursed at the vegetative rate (see Attachment A). Stumps that are too large to place in a truck may be approved by the FEMA debris monitor for reimbursement at a reasonable rate on a per stump, case-by-case basis.

Stumps on Public Property

- Pre-approval for stump removal by FEMA field personnel is not required.
- An uprooted stump in an eligible location, posing an immediate threat, having more than 50% of its root ball exposed, and being greater than 24 inches in diameter at point 2 feet from the ground, may be removed at the per stump rate. Assistance includes reasonable costs to extract, transport, and dispose of the eligible stump and to fill the root cavity.
- Other stumps in eligible locations may be cut flush with the ground if they pose an immediate threat. The resulting debris is eligible for removal at the *vegetative unit rate, not per stump rate*.

Stumps on Private Property

- Stump removal on private property is eligible only on a case-by-case basis in accordance with the criteria of this document and FEMA Policy 9523.13 (7)(D).
- Work must be performed or contracted for by an eligible applicant.
- The stumps must pose an immediate threat.
- If the tree is severely damaged, FEMA may reimburse for the trunk and root ball to be cut at grade; reimbursement will be at the vegetative unit rate.
- Stump grinding is not eligible.
- All access requirements to private property must be followed.

Stumps on Known or Suspected Historic Properties

Prior to any stump work, historic preservation specialists must be notified in order to address archaeological and historic preservation concerns under Section 106 of the National Historic Preservation Act (NHPA). If the stump is on private property, the private property conditions apply except in extremely rare situations approved by the historic preservation specialists and the Public Assistance Officer.

Documentation

If it is necessary to remove a stump, the applicant must submit documentation to FEMA, including photographs that establish its location on eligible property, specifics on the threat posed, GPS locations, road locations, diameter, quantity of fill, and any special circumstances. Any missing information must be clearly explained. The attached form (Attachment B) is not required, but may be useful in collecting that information.

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Because this document is not exhaustive, either in topics or in detail, information should be verified with FEMA Public Assistance Program officials before becoming the basis for decision making.

Vegetative Debris Conversion

Stump Conversion Table Diameter to Volume Capacity

The quantification of the cubic yards of debris for each size of stump in the following table was derived from FEMA field studies conducted throughout the State of Florida during the debris removal operations following Hurricanes Charley, Frances, Ivan and Jeanne. The following formula is used to derive cubic yards:

$$\frac{[(\text{Stump Diameter}^2 \times 0.7854) \times \text{Stump Length}] + [(\text{Root ball Diameter}^2 \times 0.7854) \times \text{Root Ball Height}]}{46656}$$

0.7854 is one-fourth Pi and is a constant.

46656 is used to convert inches to Cubic Yards and is a constant.

The formula used to calculate the cubic yardage used the following factors, based upon findings in the field:

- Stump diameter measured two feet up from ground
- Stump diameter to root ball diameter ratio of 1:3.6
- Root ball height of 31"

Stump Diameter (Inches)	Debris Volume (Cubic Yards)	Stump Diameter (Inches)	Debris Volume (Cubic Yards)
6	0.3	46	15.2
7	0.4	47	15.8
8	0.5	48	16.5
9	0.6	49	17.2
10	0.7	50	17.9
11	0.9	51	18.6
12	1	52	19.4
13	1.2	53	20.1
14	1.4	54	20.9
15	1.6	55	21.7
16	1.8	56	22.5
17	2.1	57	23.3
18	2.3	58	24.1
19	2.6	59	24.9
20	2.9	60	25.8
21	3.2	61	26.7
22	3.5	62	27.6
23	3.8	63	28.4
24	4.1	64	29.4
25	4.5	65	30.3
26	4.8	66	31.2
27	5.2	67	32.2
28	5.6	68	33.1
29	6	69	34.1
30	6.5	70	35.1
31	6.9	71	36.1
32	7.3	72	37.2
33	7.8	73	38.2
34	8.3	74	39.2
35	8.8	75	40.3
36	9.3	76	41.4
37	9.8	77	42.5
38	10.3	78	43.6
39	10.9	79	44.7
40	11.5	80	45.9
41	12	81	47
42	12.6	82	48.2
43	13.3	83	49.4
44	13.9	84	50.6
45	14.5		

Hazardous Stump Worksheet

Applicant: _____

Date: _____

Applicant Representative: _____

Signature: _____

FEMA Representative (if available) _____

Signature: _____

State Representative (if available): _____

Signature: _____

	Physical Location (i.e., Street address, road, cross streets, etc.)	Description of Facility (ROW, Park, 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											